Natural Psychology

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Introduction

Natural Psychology is a comprehensive, parsimonious explanation of human psychology including rational consciousness and mental distress; it is based on a radically different perspective of accepted science theory and basic empirical neuroscience. Reconsidering thinking theory from the original debate during the founding of modern psychology provides the key to understanding human psychology. Modern psychology was founded on two competing thinking theories; unfortunately, psychologists migrated to one theory without disproving or integrating the second theory. The thinking theory of neo-rationalism was advocated by Rationalists during the founding of modern 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 (led by David Hartley, James Mill, John Stuart Mill and Alexander Bain). The Associationists proposed rationality based on *associative thinking*; they were the legacy of classical British empiricists (John Locke, George Berkeley and David Hume) and ancient Greek philosophers (Aristotle and Plato). Regrettably, the debate about thinking theory lost context when the focus shifted to behavior science; thinking theory slowly migrated to a neo-rational mental principle without integrating associative thinking. Associative thinking epitomizes a science theory that has been forgotten because it lost its context rather than its scientific truth and value (Meehl, 1978; Chang, 2004, p.239). Early Associationists including Pavlov and Skinner proved associative thinking with behavior conditioning but the politics of neo-rationalism trumped the science of behaviorism. Behavior conditioning proves associative thinking when exemplifying a stimulus/response; repetitions of a stimulus/response exemplify thinking rather than learning. Since *learning* is the “modification of behavior”, repetitions of a stimulus/response do not exemplify any change in behavior and therefore cannot demonstrate learning. After a stimulus/response is learned, repetitions demonstrate (associative) thinking by definition. Unfortunately, a neo-rational mental principle (excluding associative thinking) became the basis of our current psychology paradigm before understanding the motivation that directs associative thinking and makes it understandable. It is also unfortunate that a neo-rational mental principle (excluding associative thinking) became the accepted psychology paradigm before neuroscience developed because basic empirical neuroscience proves associative thinking. Natural Psychology explains associative thinking and the natural motivation that directs it with a new perspective of accepted science theory and elemental empirical neuroscience.

The current psychology/psychiatry paradigm is based on scientific contradictions of basic scientific principles; this thesis identifies and solves these foundational scientific failings.

Philosophers of science and logicians advocate that fundamental principles are more important to follow than obscure principles, and anomalies of fundamental principles are more problematic than anomalies of obscure principles. Consistency with basic science principles is critical since obscure studies can support or reject any detail of any psychology theory (with 6,000-8,000 doctoral theses published annually in psychology and psychiatry). Consistently, this thesis only addresses basic psychology and psychiatry principles and the basic scientific failings of current theory. This thesis provides no original research; it is based on a radically new perspective of accepted science principles and accepted empirical neuroscience.

Natural Psychology is presented in a simple format. Chapter One describes a real science foundation for psychology, and addresses critical scientific contradictions and failures of the current psychology/psychiatry paradigm. Chapter Two explains thinking as an integral half of the binary neuroscience of motivated-thinking; associative thinking explains rational consciousness, cognition and mental distress with neuroscience that is observable and verifiable. Motivated-thinking is binary science consistent with the binary function of computers that model brain operations. Chapter Three follows the advocacy of thinking theory with motivation theory-the other half of the equation; elementary empirical neuroscience explains the motivation for thinking and behavior. Consistent with natural science theory, this thesis explains our natural motivation for behavior to seek species survival. Understanding the binary science of motivation neurophysiology directing thinking neurophysiology promotes an appreciation for the critical importance of unique personal experience (life circumstances) in Chapter Four. Our mental process of motivated thinking is a function of individual experience (personal histories); this chapter describes how singular individual experience directs our motivation and thinking neurophysiology. Consistently, Chapter Four disputes behavioral genetics (genetic determinism) and challenges the pseudoscience that supports it. Following the discussion of how unique personal experience directs our mental process of motivated-thinking, Chapter Five explains human psychology. This comprehensive explanation of psychology unifies the essence of all of the current schools of psychological thought: structural, functional, biological, behavioral, psychodynamic, humanistic, sociocultural and cognitive. Moreover, a unified theory of psychology promotes a comprehensive explanation of mental distress and “mental disorders” in Chapter Six. Chapter Six explains the “medical model” of mental distress as more accurately describing a “disease model”; this chapter explains how the current psychology paradigm pathologizes naturally painful “problems with living.” Understanding “mental disorders” promotes a substantially better understanding of “mental health” care for individuals and the community that is advanced in Chapter Seven. The final chapter is a summary that emphasizes the difficulty of

making a classical paradigm shift. It is difficult to understand the simple science of rationalism through associative thinking from the perspective of the current paradigm that *assumes* a complex neo-rational mental principle. Chapter Eight also addresses the substantial social value to the community of transitioning to a new paradigm that is based on significantly more scientific truth.

Natural Psychology includes supportive appendixes that are presented separately so the main thesis is not interrupted by large digressions. Appendix A is an additional discussion about the scientific foundation of psychology and psychiatry, and the pseudoscience of neo-dualism. Following a discussion of science theory, Appendix B and Appendix C are more extensive explanations of the neuroscience of thinking and motivation respectively. Appendix D follows with an explanation of popular psychology theory from the perspective of the new paradigm of Natural Psychology. Appendix D provides a unified explanation of popular theories about learning, cognition, memory, mental states of consciousness, perception, intelligence, personality, language, and social psychology. Lastly, Appendix E explains “mental disorders” from the perspective of the new paradigm of Natural Psychology. Appendix E provides a unified explanation of what is currently described as anxiety disorders, eating disorders, substance-abuse disorders, mood disorders, somatoform disorders, dissociative disorders, personality disorders, and schizophrenia disorders.

Natural Psychology explains human psychology based on accepted science theory and accepted empirical neuroscience; it is far better science than current theory since it makes no assumptions. Natural Psychology is an elegant theory of biological and physiological psychology based on the binary interaction of motivation directing thinking. Although paradigm shifts are difficult, understanding behavior and the mental process will promote a renaissance of scientific and social advances.

I
The Science of Human Psychology

Natural Psychology explains human psychology with a classical paradigm shift to better natural science as described by the eminent philosopher of science, Thomas Kuhn (Kuhn, 1962). 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. A classical paradigm shift is difficult to understand from the perspective of the established paradigm regardless of increased parsimony and the ability to solve significant anomalies of the established paradigm. This thesis implores the reader to suspend belief in a massive quantity of complex, ambiguous support for accepted psychology theory and follow basic science theory and basic empirical neuroscience to more truth. Natural Psychology challenges current neuroscience research that dazzles with complexity while contradicting the philosophy (the most fundamental principle) of every science that informs it. A philosophy of a science is a principle that *frames* a science; it is an assumption underlying a science that defines it (and is thus not provable). Popular neuroscience investigations contradict the *philosophy of (general) science*, the *philosophy of natural science*, the *philosophy of biology* and the *philosophy of physiology*. 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. Current neuroscience investigations lack validity by contradicting the philosophy of every science that informs them.

Popular psychology theory is founded on pseudo natural science that contradicts the philosophies of the sciences that inform it: 1) general science, 2) natural science, 3) biology, and 4) physiology.

First, psychiatry's neuroscience contradicts the philosophy of science (the philosophy of all science) - *parsimony*. All science theory is based on the principle of parsimony- Occam's razor: "All other things being equal, simpler theories are better science" or "fewer assumptions make better science." Consistently, the most basic principle of the Philosophy of Science is *falsifiability*. The Philosophy of Science contends that true science theories can be differentiated from pseudoscience by falsifying them- explaining how to disprove a proposed science theory. Falsifiability is a process of identifying assumptions as potential sources of error; this process separates real science from ad hoc theories and post hoc theories. Philosophers contend that a

theory is not good science if unproven assumptions are not identified. In contrast, psychiatry's neuroscience is comfortable with complexity and limitless unidentified assumptions. The embrace of complexity by neuroscientists is unscientific; neuroscientists have lost contact with a scientific foundation. Neuroscience investigations were brilliant in making breakthrough discoveries about the basic functions of a neuron cell (cellular neurophysiology); neuroscientists deserve substantial admiration for this complex achievement. However, subsequent neuroscience investigations have increasingly developed a philosophical (or theological) embrace of complexity without concern for the number of assumptions that it makes (or falsifying its theories).

It is a fundamental failure of scientific logic to *assume* complex mental principles *without understanding* mental principles, full stop. It is a basic scientific anomaly to *assume* that the brain functions through complex mental principles *especially* while modeling the brain after computers. Scientists model the brain after computers that operate based on the simplest math principle (binary science) yet fail to consider the possibility that the brain is based on binary neuroscience. It is illogical to assume complex mental principles based on an assumption that simple mental principles would be obvious to scholars. It is extremely difficult to cull out simple principles of human psychology from the massive quantity of ambiguous, convoluted, complex popular theory. Moreover, simple mental principles are difficult to discover because they are not sought; it is extremely difficult to discover a theory that is not sought. Regardless of historical problems with oversimplification in psychology specifically and in science generally, it is unscientific to ignore the possibility that simple mental principles produce complex cognition and complex behavior. It is unscientific for neuroscientists to embrace complexity, assume complex mental principles, and fail to identify this problematic assumption. Neuroscientists are generally proud of the complexity of their investigations while failing to *falsify* them; in contrast, Natural Psychology is proud of its simplicity and is *falsifiable*.

Second, besides contradicting the *philosophy of science* (*all* science), most current neuroscience investigations also contradict the *philosophy of natural science*. While science is a tool humans developed to investigate and better understand our environment, natural science focuses on the natural, physical (material) world. The natural sciences are generally considered the "hard sciences" since they address the physical world as opposed to using science to investigate more abstract concepts like social science (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; however, since psychiatry addresses philosophy (a philosophy of “mind”), it is not natural science. Psychiatry and neurology may investigate substantially similar subjects but neurology is natural science while psychiatry is pseudo natural science by definition.

Most current neuroscience investigations further contradict two accepted principles of natural science: evolutionary theory and the theory that human nature is based on simple principles. Popular neuroscience investigations discount the accepted natural science principle of evolution or imply that evolutionary theory no longer applies to human nature because we have “evolved” *complexity* beyond our natural purpose. Popular psychology theory generally seeks to distance itself from natural science based on a vilified perspective of human nature as primitive and base. Most psychology/psychiatry theory attempts to separate desirable and exemplary behaviors from a vilified human nature by considering admirable behaviors attributed beyond human nature. Psychology and psychiatry generally attribute positive behaviors to spiritual causation (philosophical or theological) while attributing negative behaviors to a vilified human nature. Consistently, *evolution psychology* culls human psychology for “caveman behaviors” to identify as atypically “human nature.” Current neuroscience investigations are illogical (unscientific) in ignoring or discounting evolutionary theory; all behavior and mental processes are human nature consistent with the natural science principle of evolution.

Besides contradicting the natural science principles of addressing the physical world and of evolution, current neuroscience research also contradicts the natural science principle that addresses its complexity. Our most eminent natural scientists (Einstein, Brian Greene, Steven Weinberg, and Walter Lewin) contend that *human nature is based on simple principles that are hidden beneath an appearance of complexity* (Lewin, 1998; Greene, 1999; Weinberg, 2003). One hundred trillion neural connections create complex thinking and complex behavior but this manifestation of complexity does not prove a complex mental principle. Complex mental principles are inconsistent with the evolutionary (natural science) requisite of *functional resilience*; functional resilience dictates that body systems must operate properly over time to promote species survival. Simple operating principles promote functional resilience; maintenance engineers understand this principle and complain about problems inherent in complex engineering with the mantra of the acronym KISS: “Keep it simple, stupid!” The popular psychology/psychiatry paradigm contradicts the evolutionary requisite of functional resilience when nearly thirty percent of the population suffers from mental malfunctioning annually (Bernstein, 2006, p. 576; Whitaker, 2010). Embracing complexity and ignoring evolutionary theory is pseudo natural science; in contrast, Natural Psychology explains evolutionary theory, human nature and human psychology with accepted natural science theory.

Third, besides contradicting the *philosophy of science* and the *philosophy of natural science*, most neuroscience investigations also contradict the *philosophy of biology*. Biology is the natural science that investigates living matter- organic life; since biology is a natural science, the biological investigation of life is limited to the natural (physical) world. Consistently, neurology is a biological science (as well as a natural science) since it addresses the brain and nervous system of an organism. Conversely, psychiatry investigates philosophy (the philosophy of "mind"); it cannot be a biological science (or a natural science) since it does not address a physical entity. Popular theory uses "sciency" terminology and scientific methodology to philosophize about an abstract *mind*. Classical dualism advocated an imagined soul that was separate from the physical brain; neo-dualism advocates a philosophy of "mind" that mediates between the material brain and the material world. Regardless of substantial overlap between psychiatry and neurology, psychiatry's investigation of a non-organic (non-physical) entity contradicts the *philosophy of biology* and the *philosophy of natural science*. Psychiatry's neuroscience is pseudo biology by definition; a further discussion of modern dualism is addressed in Appendix A.

Lastly, the current neuroscience investigation contradicts the *philosophy of physiology*; physiology investigates organisms at various organizational levels of the body with each organizational level explaining the entire organism. The *philosophy of physiology* advocates that an organism can be understood at different organizational levels of descending sizes and ascending complexity. Physiology texts explain humans at organizational levels of body systems, tissues, cells, and molecules (Tortora, 2008; Martini, 2011; Marieb, 2012). Anatomy and physiology texts explain organisms with body systems, explain body systems with tissue physiology, explain tissue physiology with cellular physiology and explain cellular physiology with molecular physiology. Physiologists can explain the function of all organs of the body at the largest organizational level- the level of body systems. Physiologists generally explain 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 (generally towards species survival). More importantly, physiologists can also explain all organs of the body except the brain with tissue physiology and *only tissue physiology*. Physiologists cannot explain any organ of the body at a smaller and more complex organizational level than tissue physiology. All organs of the body except the brain are explained by four kinds of body tissues: muscle tissue, connective tissue (bone, tendon and teeth tissue), epithelial tissue (skin and organ wall tissue) and nervous tissue. For example, after describing the cardio-vascular system at the

organizational level of body systems (as a pump that sends nourishment throughout the body), physiologists explain the function of the heart with tissue physiology. Physiologists explain the heart with tissue physiology as: 1) *muscle tissue* creates the heart and its chambers and flexed heart muscles push nourishing blood throughout the body, 2) *connective tissue* creates valves to produce a directional flow for the blood that nourishes the body, 3) *nervous tissue* creates a periodic spark to flex heart muscles that push blood through the body, and 4) *epithelial tissue* creates pipes to carry the blood throughout the body and allow nourishment (and waste) to pass through the pipe walls. Tissue physiology explains organs; investigating cellular neuroscience to understand the brain skips a generation of information, and investigating molecular neuroscience skips two generations of information. Physiologists explain all organs of the body besides the brain with tissue physiology but are unable to explain any organ of the body at a smaller, more complex organizational level. The tissue physiology of the heart is far more general and easier to explain than the cell physiology that comprise and explain tissue physiology. Consistently, the cellular physiology is far more general and easier to explain than molecular physiology. Investigating cellular neuroscience to understand psychology fails “to see the forest for the trees”; investigating molecular neuroscience fails “to see the forest for the tree *needles*.” Molecular physiology is far too complex to 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 human psychology is analogous to investigating the molecular structure of steel to understand the function of an automobile engine. Investigating molecular neurophysiology to understand human psychology contradicts the *philosophy of physiology* that begs for an investigation of tissue neurophysiology. Physiologists explain all organs of the body except the brain with tissue physiology; consistently, tissue neurophysiology explains the brain.

Neuroscience investigations dazzle with complexity while contradicting the philosophy of (general) science, the philosophy of natural science, the philosophy of biology, and the philosophy of physiology.

Logic and science theory dictate that the most basic tenets of a science are the most important guidelines to follow; everything emanates from foundational principles. Hence, neuroscience investigations are predominately pseudoscience since they contradict the philosophy of every science that informs them. The current psychology/psychiatry paradigm socially constructs a complex mental principle of neo-rationalism based on a strong confirmation bias and fundamental scientific failings. It is a significant failure of basic science principles for the popular psychology/psychiatry paradigm to *assume* that the brain functions through complex

principles when: 1) brain functions are unknown, 2) eminent natural scientists advocate simple mental principles, and 3) scientists model the brain after computers that operate through binary science- the simplest math principle. Anomalies of the scientific foundation of popular psychology/psychiatry theory skew all the science that is built upon them; as information technologists say, “garbage in, garbage out” (Eysenck, 1978; Ioannidis, 2016).

The embrace of complexity by neuroscience investigations is pseudoscience; in contrast, Natural Psychology contends that basic empirical tissue neurophysiology explains the brain and human psychology. The basic philosophies of general science, natural science, biology and physiology implore the consideration of simple principles of tissue neurophysiology (especially binary tissue neurophysiology) to understand human psychology. Since neurophysiologists have a general understanding of nervous tissue and a specific understanding of neuron cells, they have all the information they need to understand tissue neurophysiology. Natural psychology is a comprehensive theory of binary tissue neuroscience; it explains complex thinking and complex behavior with the simple empirical neurophysiology of motivated thinking.

This thesis implores the reader to suspend belief in a massive quantity of complex, abstract, ambiguous, and fragmented support for cultural expectations and follow real science to understand human psychology. Natural Psychology is falsifiable because it makes *no* assumptions; it is based on accepted science theory and accepted empirical neuroscience. Natural Psychology may be difficult to understand from the context of the established paradigm but it is elegant, parsimonious theory. This new paradigm appeals to a reverence for science and to the belief that more scientific truth will greatly improve the human social condition.

II
Thinking Theory

Consistent with neuroscientists modeling the brain after computers and natural scientists advocating simple principles of human nature, the brain produces behavior based on the binary interaction of motivation and thinking. It is critically important to separate thinking theory from motivation theory to understand the binary science of human psychology. In contrast to the social construction of a complex, neo-rational mental principle, Natural Psychology advocates gloriously simple associative thinking that is explained by accepted science theory and accepted neuroscience. Popular theory correctly identifies the thinking neurophysiology of connectionist neural networks that explains associative thinking but erroneously seeks to adapt this empirical neuroscience to complex, abstract neo-rational mental principles. The popular thinking theory of parallel distributed processing (PDP) of connectionist neural networks describes associative thinking but fails to consider a macro perspective of nervous tissue (the “big picture”). Instead, popular PDP theory is a micro perspective that philosophizes about the complexity of processing *nodes* (units) of information or partial information *chunks*. PDP theory critically fails to consider the larger perspective of nervous tissue as a whole. Associative thinking is explained by the general flow of neural communication through connectionist neural networks of the cerebral cortex. Associative thinking is a more basic concept of thinking whereby the thinking process is separate from the motivation that gives it direction; current thinking theory erroneously includes elements of motivation. Separating thinking theory from motivation theory is critically important for understanding the binary science of human psychology.

Natural Psychology advocates that associative thinking produces all thinking including rational consciousness and thinking that is neither rational nor conscious. This revives an intellectual tradition advocated by Associationists who founded modern psychology (with Rationalists), classical British empiricists and ancient Greek philosophers. Associative thinking was proved by behaviorists and never disproved. Unfortunately, associative thinking lost context when the focus shifted to behavior science and thinking theory slowly migrated to an acceptance of a neo-rational mental principle. Basic empirical neuroscience now proves that Associationists were correct as well as Rationalists; our rational consciousness is produced by associative thinking (directed by our natural motivation in an interactive loop). Associative thinking may appear base and mechanistic from the perspective of our current paradigm but it is glorious in producing our vast, rich array of thoughts and behaviors. Natural Psychology is parsimonious

theory that explains how associative thinking is majestically able to produce rational consciousness and increasingly altruistic behaviors.

Thinking is associative whereby each thought is the strongest association of the previous thought and sensory stimuli (after learning from connecting simultaneously occurring sensory stimuli and ideas). Associative thinking produces a stream of consciousness (selective attention) whereby trillions of associations produce all thinking including. Associative thinking produces rationality by associating all material pertinent to a subject. Consistently, reasoning that A =C if A=B and B=C is a learned association of the first element with the later two elements. Associative thinking typically produces rationality but this does not prove that the brain operates through a mental principle of rationality. Associative thinking is accepted learning theory and memory theory (thinking for the future and about the past) because it is conspicuous; associative thinking is less conspicuous when thinking about 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 introspection by conditioning oneself to consider the source of surprising thoughts. Unexpected thoughts 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 extremely emotional experience, hearing the same music after an intervening period prompts strong associated memories and emotions. Self-conditioning an exploration of the source of surprising thoughts exposes a subconscious connection that exemplifies associative thinking.

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

First, elementary empirical neuroscience now explains associative thinking as the foundation of all thinking. Consistent with biology and physiology theory, tissue neurophysiology (the nervous tissue of the cerebral cortex) explains thinking- associative thinking. The entire nervous tissue of the cerebral cortex (the exterior of the forebrain) is thinking anatomy and the flow of neural communication through the cerebral cortex is thinking physiology. Associative thinking is explained by the common flow of neural information through common neural networks of the nervous tissue of the cerebral cortex. Connectionist neural networks connect (associate) critical sensory information in the “association area” of the posterior cerebral cortex and thereafter connect more complex associations (ideas) in the “association area” of the frontal cerebral cortex. Technical neuroscience nomenclature labels most of the central posterior and frontal cerebral

cortex as “association areas”; this label should be considered literal. The primary senses of touch, sight and hearing enter the posterior cerebral cortex from the peripheral of the posterior lobe and are connected in the central, *association area*. The sense of touch enters the posterior lobe from the frontal area, the sense of sound enters from the peripheral area, and the sense of sight enters from the posterior area. Connecting (associating) the primary senses of touch, sight and hearing in the central posterior lobe and thereafter making more complex connections (associations) in the frontal lobe produces complex thoughts and complex behaviors. Although popular theory correctly identifies connectionist neural networks, it fails to consider an overview of nervous tissue and erroneously seeks to adapt connectionist networks to complex principles of neo-rationalism. The cerebral cortex is nervous tissue structured for thinking (thinking anatomy); the flow of neural communication through the cerebral cortex is thinking neurophysiology.

Consistent with biological reductionism, the tissue neurophysiology that explains associative thinking is further explained by cellular neurophysiology; tissue physiology is the cumulative effect of cellular physiology. The tissue neurophysiology of connectionist neural networks that explains associative thinking is further explained by the cumulative effect of the cellular neurophysiology of neurons communicating at their synapses- “cellular thinking.” Molecular neurophysiology may eventually explain cellular neurophysiology but it is extraneous to understanding the tissue neurophysiology of thinking. The common neurophysiology of the cerebral cortex explains associative thinking; it 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 advocated associative thinking for all thinking before it was relegated to learning theory and later memory theory. Classical behavior conditioning proves that thinking is based on a mental process of association when repeatedly demonstrating a conditioned response. Classical conditioning proves associative thinking when a ringing bell becomes a learned association of an electrical shock. Repeating the process of stimulus/response cannot demonstrate repeated learning of the *same* behavior based on the definition of learning as producing a change in thinking or behavior. 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. Empirical behavior science proves that all thinking is associative thinking including rational consciousness and mental distress (this is explained further in the following chapter that addresses motivation).

Third, associative thinking is supported by a long, storied history of philosophical advocates. Psychology was founded by Associationists (led by David Hartley, James Mill, John Stuart Mill, and Alexander Bain) who challenged Rationalists with a thinking theory of associationism. The Associationists were the legacy of classic philosophers- seventeenth and eighteenth century British Empiricists. Associative thinking was advocated by John Locke in his *Essay,* Bishop Berkeley in his *New Theory of Vision,* and David Hume in *An Inquiry Concerning Human Understanding* (Encyclopedia Britannica, 1911). Classical British empiricists revived a thinking theory of association from early Greek philosophers. Plato was the first to describe associative thinking in *Phaedo* (Encyclopedia Britannica, 1911); Aristotle followed Plato with numerous discussions of his philosophy of associative thinking (Encyclopedia Britannica, 1911). Unfortunately, associative thinking failed to maintain popularity because it challenged the social construction of a neo-rational mental principle and failed to explain motivation. Understanding the motivation for associative thinking is critically important considering the cultural appeal of a complex neo-rational mental process.

Lastly, associative thinking is supported by the disproof of the popular neo-rational mental principle; popular thinking theory based on neo-rationalism is empirically disproved by research on eye cataract patients. Esteemed neurologist J.Z. Young studied adult patients who had been blind since birth and then given sight with the development of eye cataract surgery in the 1930's (Young, 1951). These adults were unable to rationally interpret their new visual information; they could not relate visual information into their previously unsighted world (Senden, 1960). The patients struggled with the tedious process of attempting to integrate visual information into a complete world view where visual data had no relevance. As years passed, the patients remained unable to rationally interpret the most fundamental visual information; they were unable to rationalize the difference between a square, a triangle and a circle. Consistently, these 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 upon touching the objects. These cataract patients became frustrated with their difficulty integrating newly acquired visual information into their previously unsighted world; there was no *rational* connection. Since learning is cumulative, it was far more difficult and time consuming for these adults to understand their visual world than for infants to learn the same information. Other investigations of adults who gained eyesight after living blind also chronicle the inability to rationalize the meaning of basic visual stimuli (Senden, 1960). Consistently, famed neurologist Oliver Sacks did 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" (Sacks, 1993). Gaining sight later in life after living blind disproves a neo-rational mental principle.

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

Human psychology is understandable in terms of accepted science theory and the empirical binary neuroscience 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. Associative thinking may seem base and dehumanizing from the context of the prevailing paradigm but it is glorious how it is motivated to produce rationality, self-consciousness and increasingly humanistic behavior.

III
Motivation Theory

Human psychology is understandable in terms of the binary science of motivated-thinking; nervous tissue structured for motivation (the limbic system) directs nervous tissue structured for thinking (the cerebral cortex). It is critically important to separate motivation theory from (associative) thinking theory to understand the binary science of human psychology. *Our natural motivation neurophysiology seeks the electrical brain energy of life;* this is true biological theory at the tissue level as well as the cellular level. Humans are sensing organisms as well as thinking organisms; humans sense strong brain energy as attractive and weak brain energy as attractive. Consistently, our natural motivation directs (associative) thinking to seek the most electrical brain energy produced by the strongest associative thought. Since lived experiences associated with neurophysiological energy are generally experiences of well-being, *behavior is naturally motivated to seek emotional well-being.* The human motivation for behavior to seek well-being generally directs behavior towards species survival as advocated by traditional, accepted natural science theory (Myers, 1992, pp. 120-121, 409; Bernstein, 2006, p. SIG-17; Wade, 2006, pp. 445-448; Passer, 2009, pp. 502-505). Explaining the natural science motivation for behavior to seek well-being is a breakthrough understanding of evolutionary theory as well as of human psychology.

Biological motivation seeks the greatest electrical brain energy of life from the strongest associative thought (from the previous thought or from sensory stimuli). Our natural motivation seeks the strongest flow of neural energy through the cerebral cortex; the strongest associative thought produces the most brain energy. Although the cerebral cortex is constantly bombarded with stimuli from the senses, seeking 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 to fire again more easily) generally promotes coherency in a “train of thoughts” (Nyberg, 2001).

The motivation for the mental process 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 improving 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: nourishment, hydration and rest. Infant experiences associated with neurophysiological energy are learned as desirable experiences; they generally teach the desirability of a friendly environment of comforting human contact, affection and social support. Infant experiences associated with satisfying physiological energy needs are generally experiences that promote emotional well-being. As the brain develops over time and learns from experience, it seeks emotional well-being consistent with how it sought physiological health during infancy. Conversely, infant experiences associated with physiological deficiencies from poor nutrition, dehydration, fatigue and physical sickness are learned as undesirable. Formative experiences associated with physiological deficits teach us the aversion of a hostile environment of loneliness, abandonment and social rejection. Infant experiences associated with physiological deficits are experiences that promote emotional suffering- emotional distress. As the brain develops over time and learns from experience, it avoids emotional suffering consistent with how it avoided physiological suffering from deficits during infancy. Humans seek emotional well-being based on its association with physiological energy during formative years and avoid emotional suffering based on its association with physiological deficits. Our natural motivation directs the mental process to seek the strongest associative thought and directs behavior to seek emotional well-being.

Behavior is motivated to seek well-being and avoid a lack of well-being; emotions are the physical sensations of achieving or failing to achieve our natural motivation. *Humans are feeling organisms as well as thinking organisms*; humans *feel* happy from happy experiences and *feel* sad from sad experiences. Hence there are two kinds of emotions: positive emotions of well-being and negative emotions of suffering- a distressful lack of well-being. Positive emotions are physical sensations of well-being and negative emotions are physical sensations of emotional suffering- emotional distress. Broadly construed, most popular theories about emotions are consistent with the proposed theory of emotions expressing well-being or distress. 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 paradigm. The fact that none of these popular motivation theories are comprehensive should discount the specific importance of each. The *drive reduction theory* has the most truth since it is based on a “biological requirement for well-being” (Bernstein, 2006, p. 401). 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; this is consistent with associative thinking. Popular motivation theories erroneously seek to conform to cultural expectations for a complex,

neo-rational mental principle. Abraham Maslow proposed a classic motivation theory of seeking *self-actualization* but this is a western culture motivation that excludes the eastern culture motivation of *collectivism*. Seeking well-being is a more fundamental theory that explains the motivation for both eastern and western cultures. Understanding emotions may be difficult for scholars who pride themselves on their intellect but humans are feeling organisms as well as thinking organisms. In contrast to current theories about motivation and emotions, Natural Psychology is a comprehensive, structural and function theory explained by empirical neuroscience.

In contrast to ambiguous popular motivation theories, Natural Psychology explains the behavior motivation to seek emotional well-being with: 1) empirical neuroscience, 2) empirical behavior science, and 3) evolutionary theory.

Consistent with how neuroscientists understand all other organs of the body with tissue physiology, our natural motivation for behavior and the mental process is explained by *tissue* neurophysiology. The role of the limbic system in human motivation is generally accepted but theorists erroneously attempt to adapt this theory to a complex, neo-rational mental principle. The entire nervous tissue of the limbic system (the interior of the forebrain) is the anatomy of motivation and its function is motivation neurophysiology. The limbic system is comprised of two dead-end structures of nervous tissues with two different 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 of well-being with hormones like endorphins that the brain senses as desirable. The endocrine system also motivates behavior to avoid distress (for species survival) with stress hormones like epinephrine that the brain senses as aversive. Second, the dead-end structures of the hippocampus and amygdala (shaped like ram's horns) stagnates the flow of neural communication and thus makes these nervous tissue structures especially sensitive to its level of neurophysiological energy. The hippocampus and amygdala sense their cumulative neurophysiological energy, and sense neurophysiological energy as attractive and neurophysiological energy deficits as aversive. Since the neurophysiological energy level of the limbic system is indicative of the general energy level of brain, the limbic system expresses the general level of the 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- the cumulative effect of neuron cell 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 to seek energy (and avoid a lack of energy). Cellular motivation is explained by the unique ability of the neuron cell to sense its physical condition and to seek cellular energy and health; the neuron cell is sensitive. It is widely accepted that neuron cells are motivated to seek homeostasis- a resting potential; homeostasis is a balanced, healthy cell state that avoids physical deficiencies. However, if neuron cells only sought homeostasis, humans would seek sleep rather than activity; neuron cells also seek the energy of the electrical spark of life- an action potential. Neuron cells seek the energy of an action potential as well as the health of a resting potential; it is an imbalance between the two potentials that is sensed as aversive. The stagnated flow of neural communication through the hippocampus and amygdala accentuates the cumulative effect of neurons seeking the physical energy of life to promote motivation. Consistent with physiology theory, neuron cell motivation to seek neurophysiological energy explains the nervous tissue motivation of limbic system to seek neurophysiological energy for the organism. The neuroscience of motivation is explained further in Appendix C.

Besides empirical neurophysiology explaining motivation, behavior science documents the motivation for behavior to seek well-being as the motivation for all conditioned behavior. *Unconditioned stimuli* that are described as *natural motivations* direct subjects to seek emotional well-being and avoid a lack of well-being. Classical conditioning demonstrates behavior seeking emotional well-being with isolated motivations that are common to the community while operant conditioning demonstrates behavior seeking well-being with isolated motivations that are tailored to individuals. Consistently, a *positive reinforcer* describes an experience that promotes well-being while a *punishment* describes an experience that promotes distress. Since behavior seeks well-being, an *external reward* ceases to have the desired affect when it causes distressful from feeling manipulated. Although behaviorism theory is becoming increasingly complex to conform to cultural expectations, the motivation for all conditioning describes our natural motivation to seek emotional well-being.

The behavior motivation to seek emotional well-being is not only explained by empirical neuroscience and behavior science, it also explains evolutionary theory- the motivation to seek species survival. Seeking well-being predominately motivates behavior to seek 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 well-being. Humans are sensing organisms as well as thinking

organisms; emotional suffering (emotional pain) is a strong, natural motivator for behavior. Although the motivation to seek well-being can compromise individual physical health (and even physical survival under unfortunate circumstances), it fosters our evolutionary goal of seeking species survival. Our natural motivation to seek well-being as a function of individual experience promotes survival that adapts to different and changing environments.

In contrast to ambiguous popular motivation theories, Natural Psychology explains the behavior motivation to seek emotional well-being with: 1) empirical neuroscience, 2) empirical behavior science, and 3) evolutionary theory.

Humans are sensing organisms as well as thinking organisms; emotions are literally feelings. Human emotions and motivation are explained by basic empirical neuroscience that is observable and verifiable; an abstract philosophy of *mind* is extraneous. Human psychology is understandable with simple binary neuroscience; the motivating nervous tissue of the limbic system directs the thinking nervous tissue of the cerebral cortex. The mental process is motivated to seek the energy of the strongest associative thought and motivates behavior to seek well-being based on learning from individual experience. A strong *confirmation bias* (the *experimenter expectancy effect*) for a neo-rational mental principle hinders our understanding of thinking and motivation, and of human psychology. Seeking emotional well-being may seem base and dehumanizing based on cultural expectations but it is glorious how our natural motivation directs associative thinking towards rational cognition, self-consciousness and increasingly moral behavior. Although seeking well-being may produce some repugnant behaviors, human nature is glorious in totality; our common humanity is majestic in producing increasing altruism in an increasingly humanistic world.

IV
Motivated-Thinking and the Function of Experience

Natural Psychology explains human psychology with binary science: substantially common motivation neurophysiology directs substantially common thinking neurophysiology as a function of singular personal experience. Thinking neurophysiology is the general flow of neural communication through the nervous tissue of the cerebral cortex; motivation neurophysiology is the stagnated flow of neural communication through the dead-end structures of the limbic system. *Empirical neuroscience explains how the mental process seeks the strongest associative thought and behavior seeks well-being as a function of learning from individual experience*. All behavior is understandable as a function unique personal experience; unfortunately, we currently have little understanding of the experiences of others. In contrast to popular theory, our substantially common neurophysiology of motivated-thinking creates a substantially "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 (Pinker, 2002, p. 34). Natural Psychology is a paradigm shift from assuming substantially common experiences affecting substantially unique neurophysiology to substantially unique experiences affecting substantially common neurophysiology.

Understanding human psychology as substantially a function of lived experience affecting common neurophysiology will be difficult to accept for scholars who define themselves in terms of a substantially nativist intellect. Difficulty understanding the wide range of personal experience (life circumstance) also obscures an understanding of this comprehensive, parsimonious explanation of behavior and the mental process. Most people do not understand their own experiences and have significantly less understanding of the personal histories (life circumstances) of others. Even a brilliant psychiatrist like Oliver Sacks is unable to appreciate the distressful life circumstance of living in a mental institution (Sacks, 1998). Current psychological theory erroneously uses the term *event* to describe a common experience; this may be useful in discussing a population but is misleading in understanding unique personal experience. Personal lived experience creates a unique perspective of any *event*; personal experience is singular. This thesis implores suspending disbelief in common neurophysiology to consider basic empirical neuroscience- observable and verifiable. Individual experience directs human psychology; this chapter challenges behavioral genetics and the pseudoscience that

supports it.

Behavior seeks well-being through associative thinking based on 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*. Behaviors described as instincts seek well-being based on learning from common experiences; this includes 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 are different between cultures as documented by the sociocultural model of psychology (Ratner, 2002; Nisbett, 2003; Heine, 2007; Watters, 2010). Hence fundamental behavioral goals of *individualism* for western cultures and *collectivism* for eastern cultures are a function of cultural experience. Consistently, "attachment" behaviors and *separation anxiety* vary widely as a function of cultural experience. Moreover, "Cultural Concepts of Distress" is a "disorder" described in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* as a function of cultural experience (Bures, 2016). Furthermore, depression varies widely as a function of cultural experience from under 3% in some areas of Spain to 30% in some areas of Zimbabwe (Brown, 1996; Horwitz, 2002, p. 127; Watters, 2010). Suicide rates similarly vary widely as a function of cultural experience (Durkheim, 1895). Besides common individual and cultural experiences producing common behaviors, common family experiences often produce common behaviors that have been erroneously described as a product of family genes. "Family pedigree studies" correlate behaviors common to family members but erroneously discount the affect of experiences common to a family.

The classical "nature vs. nurture debate" purports to investigate the function of genetics (genetic determinism) in producing individual behavior but there are many problems inherent in the framework of this debate. Cultural expectations for both genetic and environmental causation for behavior obscure the illogic of investigating influences that affect an *unknown* mental process. It is difficult to understand influences affecting a *known* mental process; it is nearly impossible to understand the influences that affect an *unknown* mental process. Moreover, the category of nurturing experiences is not inclusive; parental nurturing is not the only experience that affects emotional well-being. The devastating effect of a lack of nurturing is documented in studies of abusive parenting, prison ward nurseries, and orphanages but these are not the only environmental experiences that shatter emotional well-being. Besides nurturing experiences, experiences with social rejection, poverty, bullying, and violence affect emotional well-being,

especially over time. Furthermore, nurturing experiences are extremely difficult to quantify; each child experiences the family nexus differently. It is impossible to quantify nurturing experiences and wrong to limit critical experiences that affect emotional well-being by focusing solely on nurturing experiences. In contrast to the nurture position, the nature position purports to advocate for behavioral genetics but this advocacy is critically flawed. The critical difference between the genetics of unique neurophysiology and the genetics of common neurophysiology is lost when the nature position claims both positions. Also, behavioral genetics ignores the fundamental anomaly of *schizophrenia spectrum disorder*; schizophrenia is generally considered a genetic dysfunction but it does not breed true (Ross, 1995; Andreasen, 2000). People with *schizophrenia* have a twenty percent reproduction rate compared to the general population; this should translate into the elimination of *schizophrenia* after several generations. Moreover, proposing multiple genes influencing an unknown mental process makes it impossible to falsify the theory. Furthermore, it is impossible to disentangle the difference between family experiential influences and family genetic influences (Glatt, 2008); the debate cannot be falsified. Cultural expectations for behavior based on both genetic and environmental causation foster a confirmation bias that supports behavioral genetics with debate that lacks any *healthy scientific skepticism*.

Linkage studies and *twin studies* are the two main types of support for genetic determinism (behavioral genetics) but they are similarly based on a strong confirmation bias and poor scientific methodology. *Linkage studies* that attempt to link specific genes to specific behaviors regularly make the news but the significant failure to replicate these studies is rarely editorialized (Kirk, 2013, p.307; Boekel, 2014; Joseph, 2014; Aarts, 2015; Insel, 2015; Joseph, 2015; Spellman, 2015; Yong, 2016). 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 (Joseph, 2013b). The failure to replicate studies that support behavioral genetics is a disparaging problem for many eminent geneticists (Risch, 2000; Kendler, 2005; Faraone, 2008). Genetic causations for IQ, crime, “autism”, “ADHD”, “bipolar disorder” and “schizophrenia spectrum disorder” have been clearly challenged and/or rejected (Joseph, 2003, Joseph, 2004; Joseph, 2006, Leo, 2016). Moreover, linkage studies fail to address the gender based nature of most mental distress (Horwitz, 2002, p. 173). Some geneticists further contend that the nature of genetics precludes the ability to link genes to behavior (Ruth Hubbard, 2010). The failings of linkage studies and behavioral genetics are well documented (Szasz, 1960; Breggin, 1991, Ch. 5 & Ch. 7; Gould, 1996; Joseph, 2004; Ratner, 2004; Joseph, 2006; Carlat, 2010; Joseph, 2010a; Joseph, 2010b; Joseph, 2011; Palmer, 2011;

Joseph, 2012; Joseph, 2013a; Joseph, 2014; Panofsky, 2014; Leo, 2016).

More importantly, critics of behavioral genetics fail to address its most critical fallacy; genetics are far too complex to describe the function of any organ. Investigating the function of any organ besides the brain based on genetic research would be considered absurd- difficult beyond belief. Only a reverence for neural complexity, a strong confirmation bias, and a disregard for replication could support claims of genetic causation for specific behaviors like breakfast eating patterns (Keski-Rahkonen, 2004), perfectionism (Tozzi, 2004), coffee and tea preferences (Luciano, 2005), loneliness (Boomsma, 2005; Bartels, 2008), and political choices (Spector, 2015). Falsifiability is never a consideration with linkage studies; there are an unfathomable number of assumptions that separate linkage studies of genetic determinism from real science.

Twin studies advocate for behavioral genetics with fewer assumptions than most types of linkage studies but a strong confirmation bias again promotes shoddy science. Twin studies typically focus on the difference between the behavior of identical twins (with similar genes) and fraternal twins (with different genes) while assuming similar experiences- similar environments. Most twin studies are dependent on the equal environment assumption (EEA) which falsely asserts that both identical twins and fraternal twins experience equal environments. 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. In reality, twins are a major influence on each other; identical twins typically expect and seek similar behaviors while fraternal twins typically expect and seek dissimilar behaviors. The failings of the EEA are well documented (Ross, 1995, p. 89; Pam, 1996; Joseph, 1998; Joseph, 2006, pp. 28-34; Ross, 2008, p. 126; Joseph, 2014). Besides the erroneous EEA supporting twin studies, a cultural fascination with coincidences among identical twins makes them immune to standard scientific methodology (Nairne, 2003, p. 23; Passer, 2009). Twin studies often support cultural expectations with open-ended searches for coincidental similarities; this ignores basic scientific methodology of stating a hypothesis in advance to be tested. Fascinating coincidences in case studies of identical twins are embraced as legitimate proof of behavioral genetics while case studies are generally considered weak scientific evidence (Peter Watson, 1981).

Reared-apart-identical-twins studies are the hallmark of twin studies and support for behavioral genetics, but again, these studies are plagued by a confirmation bias and poor scientific methodology. The logic of the premise seems indisputable: since identical twins share similar genes, similar “character traits” of reared apart twins must be attributable to common

genetics. But as the saying goes… the devil is in the details. Actually, this is hardly about details; the devil is in the pseudoscience of a strong, cultural "confirmation bias" for behavioral genetics. Studies of reared apart identical twins lack the standard science methodology of acceptable sample sizes, random recruitment, double-blinded studies and especially transparency. Reared apart identical twin studies also fail to adjust for common experiences from a common physical appearance, common age, and common sex (Farber, 1981; Joseph, 2004; Joseph, 2014; Joseph, 2015b). Reared-apart-identical-twins studies lack any *healthy scientific skepticism*. The most famous reared-apart-identical-twins study supporting behavioral genetics is the Minnesota Study of Twins Reared Apart (Bouchard, 1990). A newspaper article instigated this research (Myers, 1992); 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 reunite and investigate identical twins that were separated at birth; but finding identical twins separated at birth proved problematic. *In contrast to the title and legend of the study, few subject twins were separated at birth and reunited by the study*. Astonishingly, twins were described as "reared apart" if they spent any part of their childhood in different homes rather than actually being "reared apart"- lacking contact during formative years. This is an extremely misleading (or dishonest) concept of "reared apart" whereby environmental factors are not isolated as implied; most twins had substantial contact during formative years and before the study. As documented and thereafter discounted in the study, twins frequently lived together for years before their separation and typically lived together for years after their separation and before the research (Bouchard, 1990, pp. 224-227). This seems fraudulent; the hypothesis of reared-apart-identical-twins research should depend on twins not having contact after birth and before the study since (in general) identical twins strongly influence each other. Our culture generally assumes common "character traits" for identical twins and identical twins generally desire this commonality; any contact between twins nullifies the hypothesis. The unusually strong confirmation bias of the subject twins was compounded by the experimenter bias of student researchers; researchers realized the historical significance of their research while using subjective questionnaires. Furthermore, it is unscientific for Bouchard to omit the data of numerous pairs of twins in the study sampling without explanation. The study introduces a sampling of over 100 sets of twins (Bouchard, 1990, p. 223) and thereafter provides data for only 48 sets of identical twins (Bouchard, 1990, p. 226). Most information about research methodology is veiled in the anti-science of secrecy but the study does provide details of the significant contact between twins[1]. The self-aggrandizing tone of the conclusion sings praise to *scientheology*. Nevertheless, it is difficult to understand how the dishonesty and lack of

transparency of this study has continued to pass for critically important *science*.

A Danish-American adoption study of *schizophrenia spectrum disorder* is a second classic study that supports behavioral genetics with a pseudo scientific study of identical twins reared apart. Seymour Kety and his colleagues located biological parents of adopted children with *schizophrenia* to correlate rates of "mental disorders." In contrast to its claims, this study shows no biological connection between behavior and genetics; there was no increase in rates of *schizophrenia* between close family members. 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 for behavioral genetics. There have been numerous criticisms of the scientific failings of this frequently quoted study (Benjamin, 1976; Lidz, 1983; Breggin, 1991, pp. 97-98; Pam, 1995; Joseph, 2001; Boyle, 2002; Joseph, 2014). Studies of identical twins reared apart have significant scientific failings obscured by a confirmation bias for behavioral genetics among both researchers and identical twins.

Besides twin studies, E. Fuller Torrey's study of *schizophrenia spectrum disorder* and *bi-polar disorder* is the most sighted pseudoscientific support for genetic causation of mental distress (Torrey, 1994). A strong confirmation bias promotes pseudo scientific methodology; researchers subjectively interpreted both the diagnoses of specific "mental disorders" and childhood recollections about physical illnesses and behaviors. Torrey's study lacks any objective structure including 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. Torrey's study is widely accepted pseudoscientific support for behavioral genetics based on a strong confirmation bias, a lack of healthy scientific skepticism, and self-promotion.

Reared-apart-identical-twin studies support cultural expectations with a confirmation bias and without standard scientific skepticism.

There are strong cultural expectations and vested interests that seek scientific support for behavioral genetics; it is unfortunate that genetic research does not adjust for this confirmation bias. Behavior is the natural outcome of substantially common neurophysiology learning from unique experience and responding to unique experience; there are no genes for specific behaviors. Behavioral genetics supports cultural expectations for a complex, nativist mental principle of neo-rationalism with a bias that shades science; it lacks structural and functional neuroscience support. In contrast to behavioral determinism, Natural Psychology explains

behavior with the elementary empirical neuroscience of common motivation neurophysiology directing common thinking neurophysiology as a function of unique lived experience. Natural Psychology challenges the pseudoscience of behavioral genetics with a comprehensive, unified theory of human psychology.

Natural Psychology challenges cultural expectations for a unique mental principle of neo-rationalism and cultural expectations about free will but this should not discount the value of its scientific truth. 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 describe 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 (Pinker, 2011); understanding our natural psychology will significantly hasten this process.

Natural Psychology is a parsimonious new paradigm of human psychology based on accepted science theory and basic empirical neuroscience. It explains psychology with binary neuroscience consistent with how neuroscientists model the brain after binary computers. The nervous tissue of the limbic system is structured for motivating the nervous tissue of the cerebral cortex that is structured for thinking. Natural Psychology is an elegant explanation of human psychology based on our common motivation neurophysiology directing our common thinking neurophysiology as a function of lived experience- unique personal experience.

V
Natural Psychology

Basic empirical neuroscience explains human psychology including rational consciousness and "mental disorders"; the mental process 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 learning from individual experience. Consistent with the advocacy of Associationists (who founded modern psychology with Rationalists), early 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 structure and function of the nervous tissue of the cerebral cortex; this nervous tissue is further explained by cellular neuroscience. The motivation for thinking is explained by the structure and function of the nervous tissue of the limbic system; this nervous tissue is similarly further explained by cellular neuroscience. Our natural motivation seeks the energy of the strongest associative thought; learning during formative years naturally directs behavior to seek emotional well-being. Human psychology develops from unique individual experience affecting common thinking and motivation neurophysiology. Natural Psychology is a comprehensive new paradigm of biological and physiological psychology based on elemental neuroscience that is observable and verifiable. While our mental process is a more mechanistic foundation for *free will* than expected, unique personal experiences create a different kind of unique spirit (soul). Natural Psychology explains human psychology with elegant, parsimonious (binary) science.

With an understanding of the process of motivated thinking and the role of experience, human psychology becomes logically understandable. Since behavior seeks well-being based on experience, experiences common to individuals, cultures and families foster common behaviors common to individuals (currently attributed to "instincts"), cultures (currently described as *cultural psychology*) and families (currently attributed to familial DNA). Consistently, since behavior is a product of associative thinking, behavior patterns are substantially habitual (often described as "'personality' traits"). Since behavior seeks well-being and communicating with others typically promotes well-being, humans generally seek language skills. Since behavior seeks emotional well-being and fair treatment typically promotes well-being, humans generally seek fair treatment for themselves and promote altruism by extension.

The popular *biopsychosocial* model of psychology describes the current psychology paradigm; it combines popular biological, psychological and social perspectives, but its biology is pseudo “hard science” that dominates the softer sciences. The “bio-psycho-social” model contends that nativist neurophysiology interprets social experiences through psychological processes. The problem with this model is that its biology is pseudo but nevertheless dominates the theory since it purports *hard science* while psychology and social science are considered *soft sciences*.

Schools of psychology gained popularity because they add valuable insights into behavior and the mental process; Natural Psychology unifies the essence of: 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 rather than investigating the complexity of sensory elements of consciousness, it identifies the empirical brain structures of thinking and motivation. Natural Psychology explains 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 rather than investigating the adaptability of an abstract philosophy of *mind*, it identifies the empirical tissue neurophysiology of thinking and motivation. Natural Psychology explains the function of the nervous tissue of the cerebral cortex as thinking neurophysiology and explains the nervous tissue of the limbic system as motivation neurophysiology. Thus human psychology is extremely adaptive to environmental change since our common mental processes are a function of environmental experience. Third, this thesis is *biological psychology*, but rather than investigating obscure molecular neurobiology, it explains psychology with empirical neurobiology. Current biological psychology theory seeks to integrate biology into philosophy (a philosophy of *mind*); this is pseudo neurobiology by definition. Consistently, *sociobiology* makes abstractions from theoretical biology without any reference to accepted empirical neurobiology (E.O. Wilson, 1980; Machamer, 2001). Fourth, this thesis is *physiological psychology*, but instead of investigating *obscure* (molecular) physiology, it explains psychology with accepted (empirical) tissue physiology consistent with physiology theory. Fifth, this thesis is *behavioral psychology*, but rather than distort behavior science seeking consistency with a complex neo-rational mental principle, it explains all behavior as “conditioned” (through associative thinking). Sixth, this thesis is *evolutionary psychology*, but instead of theorizing about the adaptability of a philosophy (of “mind”), it explains how behavior generally seeks species survival with broad adaptability. Seventh, this thesis is *psychodynamic psychology* when advocating that traumatic experiences

cause mental distress, that many traumatic experiences are unavailable for recall, and that the memory of many traumatic experiences can be retrieved through associative thinking. Psychodynamic “states of consciousness” and the impact of traumatic experiences on memory are discussed further in Appendix D. Eighth, this thesis is *humanistic psychology*; it explains how our common humanity and our natural motivation to seek fair treatment foster humanism in an increasingly humanistic world. Ninth, this thesis is *cognitive psychology*, but rather than theorizing about complex neo-rational information processing, it explains cognition as a function of motivated thinking. Lastly, this thesis is *sociocultural psychology*, but rather than focusing solely on group dynamics, it also explains the effect of cultural experiences on individuals. Natural Psychology is a comprehensive, unified theory of structural psychology, functional psychology, biological psychology, behavioral psychology, psychodynamic psychology, humanistic psychology, cognitive psychology, and sociocultural psychology.

Natural Psychology is a simple, unified theory of human psychology in contrast to popular theory that is complex and ambiguous. 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 innate character and environmental factors. Popular theory is comprised of such a massive quantity of complex, convoluted, and fragmented support that it is difficult to summarize. Popular theory is so complex and ambiguous that an overview varies widely between psychologists; thus, it is difficult to challenge. Current theory is complex and has few limits to the acceptance of obscure details about an *unknown* mental process; parsimony (the most basic principle of science) is never a consideration. This brief explanation of psychology is supplemented by a unified explanation of popular psychology theories in Appendix D.

Natural Psychology explains human psychology: *the mental process seeks the strongest associative thought and behavior seeks well-being based on personal experience*. This parsimonious thesis may seem dehumanizing from the context of the current psychology paradigm but it describes a glorious mental process that promotes increasingly altruistic behavior and advanced mental acuity. More importantly, Natural Psychology is critical theory for understanding mental distress and reducing emotional suffering in the community; self-knowledge will promote a significant improvement in the human social condition.

VI
”Mental Disorders”

The mental process seeks the strongest associative thought and behavior seeks well-being based on unique personal experience; *affirming experiences produce “mental health” (emotional well-being) and distressful experiences produce mental distress (emotional suffering-pain*). “Mental disorders” pathologize natural, painful emotional suffering (from distressful experiences) and coping styles psychiatry deems *disabling* (non-conforming, non-productive and/or disruptive). Psychiatry denies our humanity when it pathologizes sadness and illogical in *assuming* that mental distress is a dysfunction of a normal mental process without understanding a normal mental process. Distressful experiences naturally cause painful anxiety and depressing experiences naturally cause painful depression; made-up diseases do not cause anxiety or depression. Psychiatry makes the illogical assumption that happiness is a natural state and sadness is an unnatural state regardless of personal experience (life circumstances). Unfortunately, the World Health Organization (the WHO) supports psychiatry in pathologizing sadness by defining “mental health” as *emotional well-being* and thereby implying that emotional suffering is a “mental illness” (World Health Organization, 2005, p.2). Psychiatry attempts to explain its “medical model” with the DSM that pathologizes symptoms of emotional suffering (sadness) and “disabling” coping styles. Unfortunately, pathologizing emotional suffering and “disabling” coping methods serves a social function of delegitimizing the dissent of the marginalized and disenfranchised. The World Health Organization supports the delegitimizing of social dissent when defining “mental health” (emotional well-being) in terms of community productivity: “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” (World Health Organization, 2005, p.2). Psychiatry (and the WHO) pathologizes sadness with what psychologists describe as an *attribution bias*. An *attribution bias* is a common, *irrational* tendency to attribute personal success to innate qualities and personal setbacks to external causation. An attribution bias is especially true for community leaders who often demonstrate narcissistic tendencies. However, an attribution bias is not common among the marginalized and disenfranchised that are often socialized into a *reverse attribution bias*. The marginalized and disenfranchised often accept the cultural paradigm that attributes distressful life circumstances to predominately innate qualities regardless of causation.

Psychiatry’s “medical model” of “mental disorders” is a classical paradigm whereby

numerous terms have definitions or connotations that support its erroneous narrative. The terms *mental disorder, psychological disorder, mental illness, mental disease, madness, insanity,* and *abnormal psychology* are misnomers; they erroneously connote brain (or "mind") malfunctioning. Consistently, *maladaptive behaviors* may be "maladaptive" for the survival of the individual but not for the survival of the species. Moreover, the term "mental health" (as well as "mental illness" and "mental disease") is an oxymoron since "mental" references the philosophy of "mind" and "health" references the status of the physical body. "Mental health" is an oxymoron since a philosophy (of "mind") cannot have physical health and physical health problems. Moreover, since psychiatry addresses philosophy (of "mind") and biology is a natural science that only addresses the physical (material) world, psychiatry is biological (medical) pseudoscience by definition. Consistently, the "medical model" is more accurately labeled the "Disease Model" since it pathologizes natural emotional suffering while lacking medical science legitimacy. "Mental disorders" erroneously pathologize natural emotional suffering and/or coping styles that psychiatry deems *disabling*.

Psychiatry falsely claims biological reductionism but real biological reductionism explains mental distress as natural emotional suffering from unique, distressful personal experience (distressful life circumstances) including physical ailments. Understanding associative thinking and the motivation to seek well-being explains mental distress (emotional distress). 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 similar to physiological deficits. Emotional pain is perceived by the brain identical to physical pain (albeit with a less identifiable source); unfortunately, it recedes far slower. Emotional pain can be excruciating and unrelenting; severe emotional pain can last years or decades (or a lifetime) depending on life circumstances.

Anxiety is the feeling of emotional distress- emotional suffering; it is the painful sensation of negative emotions from distressful experiences. Negative emotions of distress produce painful anxiety that is strong, natural motivation for behavior to seek well-being- to reduce the pain. Unfortunately, the marginalized and disenfranchised often have few options for reducing their natural emotional suffering; the cruel injustice of unfortunate life circumstances often obscures a path to emotional well-being. Depressing experiences produce depression- hopelessness about achieving emotional well-being and reducing the pain of emotional suffering. Depression (minimally) reduces painful anxiety by slowing painful thinking when solutions seem distant or hopeless. Depression describes a broad range of hopelessness from a common reaction to

minor social problems to the depression expressed in *catatonic schizophrenia*. Distressful experiences cause painful anxiety that is often shaded by depression; consistently, anxiety and depression are the two most common psychological complaints (Wade, 2006, p. 566; Passer, 2009, p. 556) and often occur simultaneously (Kendell, 1974; Breier, 1985; Tyrer, 1985; Stavrakaki, 1986; Zimmerman, 2000).

Psychiatry pathologizes natural emotional suffering expressed in anxiety and depression; it also pathologizes coping styles that are intended to reduce emotional suffering. Unfortunately, coping methods often seek short-term relief of emotional suffering at the expense of long-term gain; most coping styles are counterproductive. The marginalized and disenfranchised often seek (minimal) relief from painful anxiety and depression through coping behaviors psychiatry deems *disabling* (non-conforming, non-productive and/or disruptive). Broadly construed, most counterproductive coping methods are understandable as compulsions- behaviors *associated* with well-being from unique individual experience that are considered disabling because of their excessive frequency and/or intensity (Ross, 2007, 210-211). Compulsions describe an infinite number of behaviors that can be associated with emotional well-being from personal experience and later become problematic. Difficulty in understanding the wide range of personal experience obscures an understanding of compulsions as associated with emotional well-being. Consistently, it is difficult to imagine the types of “adverse childhood experiences” (ACE) whereby affirmation and emotional support are derived from self-contempt or self-injury.

Human experience with natural catastrophes and human cruelty (QB VII, 1974) documents mental distress as a direct function of individual experience. Although mental distress is typically learned from a history of distressful experiences; atypical, extremely distressful experiences can be *traumatic*. Traumatic experiences are so distressful that they undermine a fundamental understanding of the environment and how to achieve physical and emotional well-being. Astonishingly, the “mental disorders” of *post-traumatic stress disorder* and *adjustment disorder* blatantly pathologize emotional suffering from traumatic experiences while purporting a “genetic predisposition.” Nevertheless, it can be difficult to understand one’s own life experiences and infinitely more difficult to understand the personal history and life circumstances of others. Common reactions to distressful life circumstances (especially during childhood) frequently create habitual behavior patterns that promote continual problems with distressful experiences. This includes natural defensiveness from abusive treatment that can exasperate social problems and create cycles of distressful experiences. Moreover, emotional suffering can cause related health problems (including sleep deprivation) that exasperate emotional distress. The emotional suffering of the marginalized and disenfranchised is proportionate to the distressfulness of their

unfortunate lived experience (Wakefield, 1992; Horwitz, 2002, p. 158-9).

Psychiatry's "medical model" pathologizes symptoms of emotional suffering and coping styles it considers *disabling* into pathologies through reification: turning abstract, philosophical concepts into concrete, physical entities. The Disease Model purports biological reductionism supported by the fallacy of reification- the fallacy of abstraction, false concreteness, misplaced concreteness, and false certainty (Wesley, 2008, pp. 16-19; Ross, 2007, p. 110; Greenberg, 2013; Kirk, 2013). The fallacy of reification is the illogic (pseudoscience) of giving physical qualities to philosophical, abstract concepts- the fallacy of treating a hypothetical construct as a concrete entity. The APA reifies symptoms of emotional suffering and coping styles it considers disabling into DSM disorders without an explanation beyond the symptoms (Greenberg, 2013; Kirk, 2013; Insel, 2015). "The mind is what the brain does" is a popular adage that attempts to reify the actions of the brain into a physical entity separate from the brain. The brain and brain diseases are physical and addressed by neurology but psychiatry reifies the *mind* into medical pseudoscience. "Mental illness" reifies the philosophy of mind into a physical entity that thereafter can have health and illness. The Disease Model reifies symptoms of emotional suffering into made-up diseases that cause their own symptoms; DSM diagnoses are based on the illogic of circular reasoning.

Psychiatry reifies natural emotional suffering (and/or coping styles that psychiatry deems *disabling*) into pathologies based on: 1) pseudoscience, 2) misunderstanding emotions, (3) discounting the distressfulness of the experiences of the marginalized and disenfranchised, (4) erroneous assumptions about the mental process, 5) its status as an accredited medical science, 6) medical sounding labels for symptom categories, 7) theorized correlations between chemical imbalances and mental distress, 8) theorized correlations between brain volume and mental distress, and 9) hypothetical constructs from behavioral genetics (behavioral determinism).

First, psychiatry supports its disease narrative of natural emotional suffering and *disabling* coping styles with pseudoscience; it contradicts the most basic principle of every science that informs it. Psychiatry contradicts the most basic principle of: 1) general science, 2) natural science, 3) biology and 4) physiology (as addressed in Chapter One). Psychiatry falsely claims biological reductionism while: 1) failing to consider simple mental principles consistent with general science theory (that seeks parsimony) and modeling the brain after computers (that operate on binary science), 2) discounting human nature as described in evolutionary theory and the natural science theory that nature is based on simple principles, 3) addressing philosophy (an

abstract philosophy of “mind”) in contrast to fundamental biology theory, and 4) failing to consider tissue neurophysiology consistent with fundamental physiology theory (how physiology explains all other organs of the body). Psychiatry addresses philosophy (the philosophy of “mind”); it is not natural science, biology, nor medical science.

Second, psychiatry misunderstands emotions; in contrast to popular theory that seeks to understand emotions intellectually, they are physical feelings directly related to experience. Our culture erroneously considers emotions to be intellectual judgments about experiences (intellectually understood) rather than physical responses to experiences (physically understood). Humans discount feelings based on pride about our intelligence but we are sensing organisms as well as thinking organisms; humans *feel* emotions. 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 (painful). Distressful experiences cause emotional suffering that is directly related to the degree of distressfulness of the experiences; extremely distressful life circumstances naturally cause extremely painful emotional suffering over extended periods. Emotional pain and physical pain are sensed similarly by the brain based on associative thinking; they are both associations of physiological deficits. The painfulness of extreme emotional suffering is little understood; the painfulness of severe emotional distress can be constant, commanding and excruciating (similar to extended physical torture). Emotional pain is pain; emotional pain can be stronger than a police Taser and thereby nullify its intended effect. The physical pain of a real disease cannot be more painful or cause more suffering than the extreme emotional pain expressed in much of *schizophrenia spectrum disorder*. The only difference in the perception of physical and emotional pain is that emotional pain is without an easily identifiable source and subsides substantially slower. It is unfortunate for emotional sufferers that popular theory intellectualizes emotions because their painfulness is vastly unappreciated. It is also unfortunate that suicide is occasionally perceived as an attractive option for ending excruciating (emotional) pain when other options seem hopeless.

Third, psychiatry misunderstands and/or discounts the cruel injustice of individual experience at the bottom of “our social pecking order”; psychiatry ignores reality. Psychiatry and the World Health Organization deny our humanity when they advocate that it is unnatural for the marginalized and disenfranchised to suffer emotionally. Psychiatry advocates for an *upside-down* Brave New World: instead of coerced happy pills for everyone *to make them happy*, psychiatry advocates that everyone *is already naturally happy unless they are sick* and need a coerced

happy pill (forced *sedation*). Psychiatry implies a Pollyanna World of kindness and justice for all but this is not the reality of life in our community that is often cruel and unjust. Psychiatry advocates an imaginary Pollyanna World of constant cheerfulness while pathologizing the natural emotional suffering of the marginalized and disenfranchised (Lancet editors, 2016)). 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 marginalized and disenfranchised. Pathologizing natural emotional suffering (sadness) is a means of social control; it delegitimizes the social/political suffering of the marginalized and disenfranchised.

Fourth, the concept of a "mental disorder" is based on erroneous assumptions about our mental process- that our rational consciousness is produced by a complex, neo-rational mental principle (rather than associative thinking). Current theory seeks legitimacy by focusing on the irrationality of how emotional suffering (emotional pain) is typically presented as if pain is ever presented "rationally." Human rationality is a source of species' pride although substantial prosocial behavior is irrational and accepted as such. It is illogical that irrational thoughts and behaviors are a widely accepted aspect of exemplary neo-rationalism while it is one of the defining features of thoughts and behaviors considered "mental disorders." Psychiatry fails to acknowledge this founding principle because of the abundance of irrational thoughts and behaviors that are prosocial and would thereby disprove the theory. Nevertheless, psychiatry considers expressions of extreme emotional suffering (pain) to be irrationally pathological (unless the behaviors are deemed criminal whereby they mystifyingly generally remain normal behavior- albeit "bad" behavior).

Fifth, psychiatry uses its association with medical science to legitimize its Disease Model and its concept of *mental disorders*. Psychiatry dominates the mental health industry based on its accreditation as a medical science- the Holy Grail of cultural knowledge about the body. It is unfortunate that most "mental health" professionals defer their most basic theory to psychiatry based on its purported *hard science* (biology). But psychiatry is pseudo biology since it does not address the physical world of natural science; accreditation from medical schools is a powerful force creating credibility for psychiatry's pseudoscience.

Sixth, psychiatry also reifies medical sounding labels for DSM diagnostic categories. Popular theory often describes the symptoms of theorized disorders with Greek or Latin terms and thereafter uses the medical sounding terms to imply insight (Horwitz, 2002). For example, psychiatrists describe bedwetting as "enuresis" (a Greek term for urinating) and thereafter imply insight when describing bedwetting as caused by *enuresis* (urinating). Psychiatry uses medical

sounding terms to promote its false legitimacy.

Seventh, psychiatry still advocates the “chemical imbalance theory” of causation for “mental disorders” after this support has been widely discredited by eminent neuroscientists. Most leading neuroscientists now reject the correlation between mental distress and chemical imbalances (Ross, 1995; Hyman, 1996; Valenstein, 1998; Hales, 2002; Whitaker, 2002; Lacasse, 2005; Double, 2006; Moncrieff, 2008; Kirsch, 2008; Turner, 2008; Bentall, 2009; Deacon, 2009; Kirsch, 2010; Carlat, 2010; Watters, 2010, pp. 234-240; Whitaker, 2010; Pies, 2011; Leo, 2012; Kirk, 2013; Stamatakis, 2013; Turner, 2013; Gotzsche, 2014; Moncrieff, 2014; Healy, 2015; Insel, 2015; Lynch, 2015; Sidley, 2015; Whitaker, 2015). 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 (Greenburg, 2010). Moreover, a correlation between serotonin or dopamine and a specific “mental disorder” is illogical because these neurochemicals functions too generally to produce specific behaviors (Joseph & Ratner, 2010). Furthermore, it is unscientific to support the Disease Model based on correlations when it is accepted science that correlations do not prove causation (Myers, 1992, pp. 11-12; Gould, 1996, pp. 269-273; Nairne, 2003, p. 72; Wade, 2006, p.49; Passer, 2009). 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 (Mosher, 1993; Mosher, 1998; Healy, 2000; Angell, 2004; Sharfstein, 2005; Ross, 2008, pp. 142-144; Watters, 2010, pp. 223-242 & pp. 187-18; Gotzsche, 2013; Greenberg, 2013; Kirk, 2013; Sidley, 2015; Whitaker, 2015). It is unethical for psychiatry to permit its legitimacy to be defended by the *chemical imbalance theory* after the theory has been generally discredited by eminent psychiatrists.

Eighth, psychiatry is slowly transitioning from the discredited *chemical imbalance theory* to the erroneous “brain volume reduction theory”; it describes a pathological correlation between reduced brain volume and “mental disorders.” The generally reduced brain volume of people diagnosed with “serious, chronic ‘mental disorders’” is increasingly hypothesized to exemplify pathology for mental distress. Here again, correlation does not prove causation. More importantly, atrophy better explains this correlation. Extreme depression and heavy sedation reduce thinking (the use of nervous tissue in the brain) and thereby causes atrophy (consistent with any underutilized tissue of the body). Depression expresses slowed brain activity during periods of low motivation from hopelessness; long-term depression reduces brain activity to where nervous tissue atrophies. Similar to depression, heavy neuroleptic drug therapies slow brain activity and cause nervous tissue atrophy; consistently, increasing psychiatric drug

prescriptions is promoting atrophy at earlier ages for emotional sufferers. Popular psychiatry theories about brain volume reduction (and about chemical imbalances) support cultural expectations but are not supported by real science.

Lastly, psychiatry reifies “mental disorders” based on the complex and obscure hypothetical constructs of *behavioral genetics* (behavioral neuroscience). The recondite, obscure investigations of behavioral genetics (behavioral determinism) support cultural expectations but provide no structural and functional neuroscience support for the Disease Model. Cultural expectations and the pseudoscientific embrace of complexity drive behavioral genetics, but it cannot provide any structural and functional empirical neuroscience support for psychiatry. Behavioral genetics and psychiatry expect the emergence of scientific support for the Disease Model (“fake it till’ we make it”) but psychiatry is proposing a false narrative that is scientifically unsupportable.

Psychiatry pathologizes emotional suffering; this delegitimizes emotional suffering from the (cruel) social and economic injustices of life at the bottom of our “social pecking order.”

The erroneous, reified Disease Model is described by the *vulnerability-stress model* (the *diathesis-stress model*) of “mental disorders.” The *vulnerability-stress model* describes the popular psychology paradigm by contending that “mental disorders” are produced by stressors (distressful experiences) in the environment affecting a nativist, neurophysiological predisposition to have psychological problems. The American Psychiatric Association (APA) explains psychology’s vulnerability-stress model in the *Diagnostic and Statistical Manual of Mental Disorders*- the DSM.

The first DSM was published in 1952 to wrestle control of psychiatric diagnoses from the military after WWII; the military established “mental health” standards to determine fitness for duty. The DSM-I was based on now discredited Freudian theory; its pseudoscientific foundation was immediately challenged by *antipsychiatry.* Thomas Szasz initiated the movement with the publication of his landmark book, *The Myth of Mental Illness* (Szasz, 1960). Szasz identified the “mind” and “mental illness” as abstract concepts that are not physical and therefore cannot logically be biologically reductionist. The brain and brain diseases are physical (and biologically reductionist) but the mind and *mental illnesses* are philosophy (abstract concepts) that cannot be the subject of scientific investigation. Szasz argued that psychiatrists were pathologizing “problems with living” as a means of social control over political dissent.

In 1968, the APA published the DSM-II intent on increasing its validity and reliability, but was immediately criticized for failing to do either. R.D. Laing became popular by diverging from

Szasz's libertarian perspective with an existential perspective of mental distress in terms of existential struggles against a persecutory social order (Laing, 1969). Simultaneously, the antipsychiatry movement was gaining momentum and joined by strong advocacy from the gay rights movement. Under mounting pressure a few years later, homosexuality was removed from the DSM by the same means that it was originally placed there- based on a vote by APA trustees. This satisfied criticism from the gay rights community but did little to improve the overall validity of the DSM. In 1971, the International Society for Ethical Psychiatry and Psychology was established by academics and professionals to further challenge the Disease Model.

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- in the way that it conceptualized "mental disorders." With the DSM-III, psychiatry doubled-down on the disease card. Robert Spitzer headed the task force that shifted the theoretical foundation of the psychiatry (and its DSM) from erroneous Freudian theory to biological pseudoscience. By committee vote, again, the DSM-III suddenly changed most diagnoses from social problems (neuroses) to biological problems- medical problems (psychoses). This radical change was unscientific without new scientific support but nevertheless improved psychiatry's credibility as a medical science. Psychiatry was joined by Big Pharma in celebrating the expanded disease narrative; it opened a whole new vista of profits. But voting that a social problem is instead a medical problem does not make it so. The expanded Disease Model was met with a barrage of criticism for pathologizing natural problems with living and for a manual with terrible reliability. Spitzer later criticized some of his own work for pathologizing natural behaviors.

In 1994, the APA published the DSM-IV to deflect ongoing criticism; Allen Frances headed the task force that added a "clinical significance" criterion in order to rebuff critics. The APA proclaimed that only clinicians were insightful enough to understand and properly use the manual. The APA thereby rejected all criticism by non-clinician a priori; criticism without credentials was officially branded illegitimate.

In 2000, the APA published a "text revision" to the DSM-IV known as the DSM-IV-TR to deflect 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 complexity with a five-part "axial" structure- adding different perspectives of mental distress. But the embrace of more complexity only increased validity and reliability problems; it was removed in the following edition. The APA considered the DSM-IV-TR to be a short-gap solution to mounting criticism that included stinging criticism from within- from a group of British psychiatrists advocating Critical Psychiatry. Immediately after publishing the DSM-IV-TR, the APA established a task force, staffed it with some of the most

eminent psychiatrists in the field, and gave it a mandate: find some biological criteria (support) for DSM diagnoses. But after a desperate effort for a decade, the task force was unable to find a single biological criterion for a single DSM diagnosis.

Without mentioning the failure of the task force, in 2013 the APA published the latest edition of the DSM (the DSM-5). The new DSM attempts to buttress its validity and reliability by redefining numerous categories including what they label *schizophrenia spectrum disorder* and *autism spectrum disorder*. Again, regularly redefining pathologies for "political correctness" (without additional scientific information) is blatantly unscientific. Nevertheless, the newly expanded definition of *pathological grief* is so illogical that it alone should render the new DSM invalid. Limiting "normal" grief for the loss of a child or spouse to two weeks is patently absurd. This ludicrous labeling of normal human suffering is an affront to common sense; it can only be understood in terms of caving to the influence of Big Pharma for expanded markets.

The DSM lacks validity and reliability as well as numerous other common criticisms of the failure of the DSM to be a legitimate medical manual. Common criticisms of the DSM include: 1) classifying symptoms of mental distress without proposing causation or treatment (American Psychiatric Association, 2000, p. xxxv); 2) pathologizing symptoms of emotional suffering and coping styles it considers *disabling* while discounting life circumstances; 3) discounting the more critical issue of the intensity of distress while focusing on behavior categories: (Myers, 1992, p. 450; Bentall, 2004, p. 52; Joseph, 2006, p. 262; Kirk, 2013, p.172); 4) describing symptoms of emotional suffering with ambiguous boundaries that allow wide flexibility (American Psychiatric Association, 2000, xxxi). 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. Consistently, many groups of symptoms end with catch-all categories described as "other," "unknown," "not otherwise specified" or as "other conditions that may be a focus of clinical attention"; 5) ignoring how common symptoms like sleeplessness describe many categories; 6) ignoring how psychiatric labels are stigmatizing; 7) ignoring how psychiatric labels become self-fulfilling prophecies; 8) ignoring its substantial Euro-American cultural focus and the politics of categories that change with cultural attitudes; and 9) ignoring how massive pharmaceutical industry money influences diagnoses (it is naïve to discount this significant influence). The first three criticisms are critical failings that should each render the DSM more harmful than valuable if it had validity and reliability. The aforementioned criticisms of the DSM are important especially the first three but they pale in comparison to its lack of validity in describing *mental disorders* (Boyle, 2002; Insel, 2005; Insel, 2009; Insel, 2013; Miller, 2010; Fuchs, 2012; Davies, 2013; Deacon, 2013; Graham, 2013; Kirk, 2013; Sidley, 2015). There are numerous other articulate

critics of the DSM (Scheff, 1966; Torrey, 1974; Cohen, 1990; Bentall, 1990; Breggin, 1991; Kirk, 1992; Modrow, 1992; Kirk, 1994; Chua, 1995; Ross, 1995; Caplan, 1996; Kutchins, 1997; McGrath, 1999; Sieben, 1999; Colbert, 2001; Boyle, 2002; Bental, 2004; Joseph, 2004; Read 2004; Sadler, 2004; Jackson, 2005; Bracken, 2006; Double, 2006; Ross 2007; Cohen, 2008; Sinaikin, 2010, 42-86; Watters, 2010; Frances, 2012; Bracken, 2012; Ablow, 2013; Frances, 2013; Greenberg, 2013; Kirk, 2013; Taylor, 2013, Kinderman, 2014; Sidley, 2015; Thomas, 2015; Whitaker, 2015).

Psychiatry obscures its scientific illegitimacy through obfuscating; it is so skilled in the anti-science of deception that it can pass off an incoherent definition of a "mental disorder." Consider the DSM-5 definition of a "mental disorder": "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; it clearly states that a "mental disorder" is 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- not undesirable patterns of symptoms that characterize a disease; 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. However, it is not literal nonsense; "mental disorders" actually are syndromes: pathological symptoms of nothing (or symptoms illogically considered pathological). The APA defines a "mental disorder" as a *syndrome* (symptoms of a disease) and attempts to reify the symptoms into a real disease; this is *socially constructed science*. A social judgment about symptoms cannot define a real disease.

Pathologizing natural human suffering (and coping methods considered *disabling*) makes psychiatry a strong "nocebo"; it is harmful (counterproductive) to treat a natural, social welfare problem as a medical problem- a biological dysfunction. Pathologizing natural emotional suffering also obscures real solutions to distressful life circumstances that cause emotional suffering. It is unfortunate that the Disease Model dominates "mental health" care based on its false claim of biological reductionism because it generally worsens outcomes by: 1) "gaslighting," 2) stigmatizing, 3) falsely labeling drugs as medicines, and 4) promoting coercion. First, Disease

Model worsens outcomes by *gaslighting* emotional sufferers; it convinces the marginalized and disenfranchised that made-up diseases cause emotional suffering rather than distressful life circumstances. It is difficult to imagine worse mental abuse than convincing someone that their natural emotional suffering is instead a made-up disease. Moreover, it is difficult to improve life circumstances under the best of conditions but becomes nearly impossible when falsely believing that the problem is "medical." Psychiatry doubles-down on gaslighting emotional sufferers when advocating that the refusal to accept a made-up diagnosis is an additional mental problem-"anosognosia." 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, employment, child custody, insurance premiums, and control of medical and legal matters. Third, the Disease Model worsens outcomes by promoting drug abuse through mislabeling their drugs as medicines. It is unconscionable that psychiatrists continue to advocate the chemical-imbalance theory as causation for mental distress long after eminent neuroscientists have abandoned the theory. Psychotropic drugs may be valuable in relieving symptoms of distress to better address causation (especially with sleep problems), but long-term psychotropic drug use is generally counterproductive. Long-term drug use causes distressful side effects, physical fatigue and a decrease in mental acuity (especially in heavier doses). Physical side effects, physical fatigue and a decreased mental acuity are obstacles to solving real problems with living that cause emotional suffering. 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. Lastly, the Disease Model worsens outcomes by promoting coercion. Incarceration in a mental institution, coerced drugging, and coerced ECT "treatments" are extremely distressful experiences that cause substantial increased mental distress for the marginalized and disenfranchised. Coercive "mental health" practices are harmful violations of the UN Universal Declaration of Human Rights (1948), the UN Convention on the Rights of Persons with Disabilities treaty (2006), and the UN Working Group on Arbitrary Detention (2016). Coercive "mental health" practices are terrifying and rightfully the subject of horror films; they are the opposite of therapeutic. Coercive "treatments" cause substantial harm to the community.

It is unfortunate for the emotional well-being of the community (community "mental health") that the harmful "medical model" of mental distress is supported by substantial vested interests. Besides the difficulty of understanding emotions as physical and considering a classical paradigm shift, the current false psychology/psychiatry paradigm is supported by the

vested interests of: 1) psychiatrists, 2) the pharmaceutical industry, 3) researchers employed by the pharmaceutical industry, 4) parents defensive about parental shortcomings, 5) some "diagnosed" people, and 6) community leaders. First, the vested interests of psychiatry as a medical science promotes the Disease Model; medical scientists seek medical solutions to problems. It is unfortunate that psychiatrists invest so heavily to relieve human suffering in the false "medical model" narrative. Psychiatrists invest a medical school education and medical school debt in the Disease Model; thereafter, they become heavily vested in its substantial income. Second, the vested interests of the pharmaceutical industry vigorously support the Disease Model; its enormous financial interests exude a powerful albeit often subtle influence (Mosher, 1993; Mosher, 1998; Healy, 2000; Angell, 2004; Sharfstein, 2005; Ross, 2008, pp. 142-144; Virapen, 2010; Watters, 2010, pp. 223-242 & pp. 187-18; Gotzsche, 2013; Greenberg, 2013; Kirk, 2013; Whitaker, 2015; Taylor, 2016). Besides advocating that natural emotional suffering and "disabling" coping methods are medical problems solvable with their medications, the pharmaceutical industry also fosters an unattainable expectation of constant cheerfulness to promote sales. The pharmaceutical industry pushes the concept that happiness is natural and sadness is unnatural (regardless of life circumstances); this imaginary Pollyanna World contradicts reality (our humanity). Third, the vested interests of academics and psychiatrists generously compensated by the pharmaceutical industry to conduct research and market pharmaceuticals similarly support the Disease Model. It is naive to believe that anyone is impartial towards someone generously giving them money. The lesson of scientists advocating the health benefits of smoking cigarettes should remain a constant reminder of the power of money to skew science. The integrity of "scientific journals" has been corrupted by the vast financial resources of Big Pharma; the current lack of scientific transparency in scientific journals is astonishing. It is hard to believe that "scientific" journals allow Big Pharma to write research articles that hide unsupportive trials and are credited to academics and professionals to hide bias. Only strong vested interests can permit such corruption of "scientific" journals (Turner, 2013; Every-Palmer, 2014). Fourth, the vested interests of parents who are defensive about parental shortcomings or abusive behaviors support the Disease Model to deflect guilt or criticism. 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. 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 or economic support for their antidotal advocacy of the disease narrative of mental distress. Lastly, 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 defend social and economic injustice by advocating that the natural emotional suffering of the marginalized and disenfranchised is instead a made-up disease.

The validity of the DSM-5 in describing *mental disorders* is challenged by the British Psychological Association, the Critical Psychiatry Network, Thomas Insel (the eminent director of the National Institute of Mental Health), psychiatrists at the Mad in America website, and a multitude of other eminent psychiatrists (British Psychological Association, 2012; Critical Psychiatry Network, 2018; Insel, 2015; Mad in America website, 2018a). The publication of the new DSM initiated several books that articulately critique its scientific failings (Frances, 2013; Greenberg, 2013; Kirk, 2013; Taylor, 2013; Sidley, 2015). "Mental disorders" describe natural emotional suffering from distressful experiences and/or coping styles deemed *disabling* (nonconforming, non-productive, and/or disruptive); they are social constructs that delegitimize the emotional suffering of the marginalized and disenfranchised. Psychiatry has shifted with the culture towards greater political correctness but remains medical pseudoscience. The DSM may be a publication of imposing size and complexity but more detailed descriptions of symptoms of mental distress do not equate to a better understanding. The DSM categorizes patterns of symptoms of sadness and tags them as pathologies without scientific support- biological validity. Psychiatry causes substantial harm to the community by pathologizing natural emotional suffering.

Natural Psychology is a parsimonious new paradigm that explains "mental disorders" with accepted science theory and elemental empirical neuroscience; Appendix E explains popular theories about *mental disorders* based on Natural Psychology. Natural Psychology is a comprehensive theory of biological and physiological psychology based on elemental empirical neuroscience (observable and verifiable). Mental distress expresses the painful anxiety of distressful experiences; hopelessness often masks anxiety with depression. Extreme anxiety causes emotional pain that is similar to extreme, unrelenting physical pain. Coping behaviors often seek (even minimal) short-term relief at the expense of long-term solutions; thus behaviors associated with well-being from unique individual experience are often sought compulsively. Striking color images produced by the advanced technology of functional magnetic resonance imagery (fMRI) are unnecessary for understanding the neuroscience that explains mental distress. Understanding a problem is critically important for a solution; understanding mental distress as natural emotional suffering is vitally important for improving the human social condition.

VII
Therapy

The solution to any problem is dependent upon understanding the problem; *therapy* will drastically improve when “mental disorders” are understood as natural, painful emotional suffering or coping styles considered *disabling* (non-conforming, non-productive and/or disruptive). Mental distress expresses emotional suffering from distressful experiences (or distressful life circumstances); consistently, emotional suffering is reduced by reducing distressful experiences and/or increasing experiences of emotional well-being. Distressful experiences naturally cause painful anxiety and depressing experiences naturally cause painful depression; made-up diseases do not cause anxiety or depression. Psychiatry makes the illogical assumption that happiness is natural and sadness is unnatural regardless of life circumstances- regardless of personal history. Unfortunately, people often counter mental distress with problematic coping methods; coping styles are frequently more conspicuous than the emotional suffering that promotes them. Our culture erroneously considers the distressfulness of life circumstances to be substantially common; this supports the privileges, greed and inflated self-image of community leaders. Unfortunately, considering the distressfulness of life circumstances to be substantially common denies the painful reality of the marginalized and disenfranchised. Our culture also considers emotions to be intellectually understood instead of physically understood; this hinders an understanding of natural emotional suffering- emotional pain. Understanding “mental disorders” as natural, painful emotional suffering (sadness) and/or coping styles psychiatry deems *disabling* is the foundation of a radical improvement in “therapy.”

In contrast to erroneous theories about brain diseases, it is affirming and thereby therapeutic to understand mental distress as a natural, painful expression of distressful experiences (distressful life circumstances). Consistently, emotional well-being is promoted by positive experiences of affirmation and emotional support, and avoiding distressful experiences (especially critical people and hostile environments). Physical health is a significant positive experience and physical health deficits conversely cause emotional suffering; physiological health promotes emotional well-being. Injustice causes most emotional suffering and resulting problematic coping methods; promoting emotional well-being often centers on political activism to right injustice. *Gaslighting* emotional sufferers into believing in the myth of “mental illness” is a strong “nocebo” (promotes substantial emotional suffering).

Besides the affirmation that mental distress is natural rather than pathological, a cultural

understanding of the painfulness of mental distress should also be affirming for emotional sufferers. Emotional pain is perceived by the brain similar to physical pain except it typically lasts longer and the source is harder to identify. Emotional pain is pain and extreme emotional pain is extreme pain; a real disease is not more painful.

It is usually difficult work to counter distressful experiences and life circumstances; agency and empowerment are important building blocks. Assistance with improving emotional well-being and addressing problematic coping styles is often 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; counselors are especially educated about public assistance resources. Empathy and transparent social support are critical for a counselor to create a therapeutic environment for a client. Counselors should offer empathy for social and economic injustices, and promote justice when possible. A good counselor replicates a good friend; they should offer "tea and sympathy." Poorly matched counselors cannot provide acceptable care; "peer support specialists" may assist with improving counseling services.

The "mental health" (emotional well-being) of the community will improve with more social and economic justice. For individuals, understanding mental distress will provide a framework for evaluating the relative value of hundreds of different psychotherapies. Popular therapies should be reevaluated according to their ability to promote a therapeutic increase in emotional well-being. Since there are several different categories of therapies that reduce mental distress, *therapy programs* should include elements of many different types. There are several different kinds of popular therapies that promote relief from emotional suffering and a couple that do not: 1) physical & health therapy, 2) counter-trauma therapy, 3) relaxation therapy, 4) relationship therapy, 5) positive thinking therapy, 6), spiritual and existential therapy 7) experiential 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 (satisfying physiological needs and avoiding physical illness) promotes a related improvement in emotional well-being. Physical health and fitness foster physical energy and related associations of well-being; conversely, physical sickness and fatigue reduce brain energy and promote 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, inactivity and violent environments promote emotional suffering. Improved physical health promotes improved emotional well-being.

Second, *counter-trauma therapy* advocates countering, neutralizing or confronting traumatically distressful experiences to promote emotional well-being (Unified Alternative Therapies, 2018). Understanding mental distress as natural emotional suffering (from distressful experiences) promotes therapies based on addressing the cause of the distress. Countering distressful experiences often centers on confronting the cause of the distress, preventing others from experiencing similar distress, or comforting those who have experienced similar distress. 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 might consider advocating for parenting skills programs, campaigning for stronger laws against child abuse, or volunteering to be a Big Brother or Big Sister. Neutralizing guilt should center on helping people hurt by the type of transgression; guilt from misdeeds is reduced by actions that make a person deserving of forgiveness. Community service may be valuable for generally countering injustice.

Third, *relaxation therapy* (broadly construed) promotes 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. Consistently, 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 therapeutic. Sleep is therapeutic since physical relaxation promotes increased neurophysiological energy that promotes increased emotional well-being that promotes increased comfort in addressing personal problems. Dreams are associative thinking with looser connections; they can be interpreted as similes and metaphors based on associative thinking. Relaxation therapies are naturally effective in reducing emotional distress.

Fourth, *relationship therapy* promotes emotional well-being through the natural affirmation of fellowship- social relationships; humans share a therapeutic, affirming natural bond based on our common humanity. Collaborating with people who are confronting similar types of distressful

experiences generally promotes affirmation and emotional well-being. Social relationships (through peer groups, community service and volunteerism, school and work, recreational and political activities, and religious organizations) promote positive thinking and improved emotional well-being. Consistent with the natural affirmation of fellowship, animal companionship can also promote natural affirmation. The affirmation of social support from friendship (social and animal relationships) is generally therapeutic but can take time to develop (Horwitz, 2002).

Fifth, *positive thinking therapies* like Cognitive Behavioral Therapy promote positive thinking that is valuable in promoting emotional well-being. Cognitive Behavioral Therapy (CBT) is currently the most popular therapy as the leading advocate of positive thinking; it promotes emotional well-being with mindfulness towards a personal affirmation and gratitude for one's blessings. Although most distressed people 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 (Burns, 2008; Beck, 2011; Leahy, 2011; Kuyken, 2015). 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 to increase emotional well-being. Consistent with positive thinking, there is often therapeutic value in the acceptance of events beyond our power to change and even in forgiveness (Toussaint, 2014). 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 should provide motivation for resolving issues when properly channeled. Affirming music and other entertainment, pleasant aromas and a comforting personal space promote positive thinking with associations of emotional well-being; additional lighting may also be desirable during long, dark winters.

Family therapy is valuable "positive thinking" therapy for conflict resolution within families similar to *couples therapy* improving 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 multitudes of people similarly experiencing extreme emotional suffering. However, group therapy for criminal behaviors may be counterproductive; society wants some behaviors to be associated with social rejection. 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 are additional tools for promoting self-affirmation and reducing self-defeating thinking and behavior patterns. Positive thinking is therapeutic for promoting emotional well-being while negative thinking and accepting victimization generally perpetuate mental distress.

Sixth, *spiritual and existential therapies* improve emotional well-being by addressing comforting meaning and purpose to life. Humanity has natural purpose that promotes species survival and therapeutic meaning to life; our natural motivation for species survival promotes a spiritual stewardship of Mother Earth. Unfortunately, human nature has been historically maligned for self-promotion and greed; this obscures the cooperation and compromise that have promoted the survival of the human species. It is irrational to believe that despicable behaviors (consistent with "social 'Darwinism'") are human nature while considering admirable behaviors to be philosophical or theological. All behavior is natural (a function of human nature) and increasingly altruistic over time; a spiritual appreciation for human nature is therapeutic. Many people may also find therapeutic value in an existential purpose to life with *existential therapy*. Consistently, a theological purpose to life beyond our natural purpose (and the scope of natural science) is more common than seeking an existential purpose. Natural science is our best tool for understanding ourselves and our environment but is limited in understanding meaning beyond the physical world. Understanding one's spiritual purpose promotes emotional well-being regardless of whether the spiritual purpose is natural, philosophical or theological.

Seventh, *experiential therapy* is valuable in creating behavior habits that are most likely to eventually create emotional well-being. Habits that promote well-being include improving social skills, fostering personal interests and hobbies, social recreation, creative arts including dance, improving physical health, and time spent emerged in a comforting natural environment. A habit that promotes well-being often plays to personal strengths or strengthens personal weaknesses. Charitable work and behaviors that increase personal efficacy (including peer education) may be valuable if mental distress makes it temporarily repugnant to foster an enjoyable experience.

Eighth, *behavior therapy* will substantially increase in value with an appreciation of associative thinking and behavior conditioning theory. Creating habits that neutralize distressful

experiences and habits that promote emotional well-being through behavior therapy is therapeutic. Behavior therapies of *exposure therapy* and *systematic desensitization therapy* reduce phobias (specific fears) by flooding new associations of well-being (familiarity and harmlessness) to counter feared consequences. Thus the exposure therapy of confrontation and imagination (including virtual realities) associates comforting experiences with a phobia; it reduces the anxiety of phobias by adding associations of well-being. Systematic desensitization therapy is a similar process of behavior conditioning through successive steps. Besides conditioning behavior to reduce phobias, behavior therapy also reduces compulsive behaviors with *aversion therapy*; it associates undesirable experiences with compulsive behaviors to reduce their desirability. Unfortunately, behavior conditioning is not a magic pill; it traditionally lacked the intensity and longevity to counter compulsions that are based on strong, established associations with well-being. Nevertheless, behavioral conditioning will increase in value as a therapeutic tool when it is better understood how humans can condition their own therapeutic improvement in emotional well-being.

Ninth, *occupational therapy* is valuable in managing the personal business of life; this reduces personal problems and thereby promotes emotional well-being. Naturally painful emotional suffering often distracts attention from taking care of the personal business that promotes physical and emotional well-being. Organizing and expediting personal tasks, and creating a more comforting, productive routine to daily life is generally therapeutic; a 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 some feelings of empowerment when things seem otherwise; the Substance Abuse and Mental Health Services Administration should assist upon request.

Tenth, *psychoanalytic therapy* is valuable in identifying traumatic experiences unavailable for recall with tools based on associative thinking (regardless of the false, traditional underlying Freudian narrative). 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 causation of mental distress. Similarly, dream analysis has therapeutic value when exposing hidden fears and the latent content of nightmares through associated dream imagery of similes and metaphors. Psychoanalytic therapy can be valuable in identifying the cause of emotional suffering but is typically less valuable in resolving the issues it exposes. Actions that

neutralize negative experiences are therapeutic; in contrast, self-absorption with personal problems without taking action to counter them is rarely therapeutic (Littrell, 2013).

Eleventh, *Open Dialogue therapy* is a valuable model especially when emotional suffering first becomes acute; it is most consistent with addressing mental distress as a social welfare problem. Open Dialogue therapy provides respectful, empathetic emotional support; it promotes transparency and honesty while addressing personal problems and options for solutions (Mackler, 2010; Lundblad-Edling, 2014). 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. Besides seeking to engage clients, opinions are also solicited from family and friends; therapists understand that they are only visitors in their clients' world. A therapeutic strategy formulated and directed by sufferers to resolve distressful experiences is encouraged; this is intended to foster critical agency and empowerment. Drug therapy is discouraged, although sleep aids for mania are often prescribed for an initial five-day period. Open Dialogue therapy is extremely successful compared to most other therapies (Seikkula, 2006).

Twelfth, *pharmaceutical therapy* (drug therapy) is currently the most popular form of therapy; it can provide some immediate relief of symptoms of emotional suffering but does not address causation. Drug therapy provides minimal short-term relief by masking emotions of distress but does not address the problems that promote the distress. Psychiatry is unethical for permitting the "chemical imbalance theory" to defend its legitimacy after most leading psychiatrists have rejected it. A chemical imbalance would be the logical causation for a "mental disorders*"* if it was true*,* but it has been widely rejected by the most eminent scientists in the field. Psychiatry is unethical for promoting the misconception that psychiatric drugs are medicines that treat pathology. This is a criticism of 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- promoting a more objective, measured evaluation of personal life circumstances and paths forward. Emotional crises are extremely painful and can cause disorienting sleep deprivation; this often distracts from a focus on the task of solving real problems in life. However, the value of drug therapies is only short-term; it only addresses symptoms of emotional suffering but not causation. Drugging real problems may provide temporary relief of symptoms but becomes an obstacle to solving the problems over time (especially in higher doses). Long-term drug therapies promote fatigue, reduced mental acuity, and distressful side-effects that hinder the solution of real problems. Unfortunately, psychiatric drugs are addictive; short-term relief easily becomes long-term drug

abuse whereby assistance with withdrawal may be invaluable (Hall, 2007; Breggin, 2012; Mad in America website, 2018b). Mislabeling drugs as medicines causes harmful drug abuse; Allen Frances who chaired the DSM-IV now lectures on the harm of long-term drug therapy.

Thirteenth, *electro-convulsive therapy* (ECT) remains popular for reducing symptoms of mental distress but causes brain trauma while failing to address underlying causes of natural emotional suffering. The surge of electricity through the brain ignites a brain seizure (a myriad of electrical neuron firings) that temporarily reduces symptoms of emotional distress while causing neural damage and memory loss. The electrical surge from ECT is especially damaging to the glial cells that nourish and support nerve cells; damaging the flow of nourishment to nerve cells is counterproductive. Temporary relief from emotional suffering produced by brain seizures is problematic.

Lastly, *court ordered therapy* (or any *coerced* therapy) is generally counterproductive in solving emotional suffering. Since mental distress is natural emotional suffering caused by distressful experiences (distressful life circumstances), coerced "therapies" generally worsen outcomes. It may be difficult to witness someone in an emotional crisis but understanding mental distress as an expression of natural emotional suffering rather than pathology changes everything. Since mental distress is natural emotional suffering, there is no easy answer to self-harm or suicidal ideation beyond understanding the pain that is expressed, offering empathy and emotional support, and offering assistance if possible and desired. "Coerced treatments" are additional distress to emotional sufferers; it is a calamity that emotional suffering can be "treated" with terrifying coercion. Agency and empowerment are critical for promoting emotional well-being; coerced "treatments" are horrifying human rights violations (UN Report, 1948; UN Report, 2006; UN Report, 2017). Coerced "treatments" cause more emotional suffering than the predominance of any original causation. "Coercive therapy" is an oxymoron; it is rightfully the subject of horror films.

Agency and empowerment are vital for solving the real social problems that cause distressful experiences; family, friends and/or counselors can be therapeutic when providing empathetic support that promotes agency, empowerment and self-advocacy. Supportive assistance can promote emotional well-being when providing empathy for injustice, access to desired resources, insight into the causation of suffering, and assistance with strategies for promoting social and/or economic justice. Assistance with establishing behavioral goals and strategies to achieve the goals is especially valuable during depression when solutions appear distant or unattainable. A positive relationship between client and therapist is critical for

promoting therapeutic well-being; this is generally considered more important than the therapist's technique (Wampold, 2001; Goldsmith, 2015). Unfortunately, a positive relationship between a therapist and a client can be difficult within the context of the current psychology/psychiatry paradigm. It is difficult for a therapist to empathize with a client's plight while erroneously believing that the problem is medical rather than natural. Conversely, emotional sufferers experiencing misfortune often have difficulty accepting advice from counselors who appear to be experiencing good fortune. A good match between counselor and client may be difficult; "peer specialists" may assist emotional sufferers when they lack the self-confidence for making a change. Consistent with Natural Psychology, Unified Alternative Therapies is a free, comprehensive therapy program that unifies the different kinds of therapies into a single program (Unified Alternative Therapies, 2018).

Understanding mental distress as the natural biology of distressful experiences will promote a significant improvement in the "mental health" (emotional well-being) of the community. Popular concepts of mental distress harm the marginalized and disenfranchised by pathologizing their natural emotional suffering. Popular theory fails to understand emotions; popular theory intellectualizes emotions rather than understanding emotions as physical sensations directly related to emotional well-being. Consistently, popular theory fails to understand extreme sadness as painful similar to extreme physical pain. It is counterproductive to erroneously advocate that natural emotional suffering is caused by made-up diseases, and treat the suffering with drugs and coercion. The emotional well-being of the community improves with more social and economic justice- with more a more supportive, respectful, charitable social environment of fellowship that reflects our common humanity. These cultural factors account for the wide difference of "mental health" between cultures (Jablensky, 2000; Read, 2004, p. 58; Sartorius, 2008). For individuals as well as for the community, emotional suffering is predominately caused by social and economic injustice. People 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. Humans are naturally resourceful and adaptive; there is always hope for improved emotional well-being because "the only constant in life is change."

VIII
Conclusion

Natural Psychology explains human psychology with accepted science theory and elemental empirical neuroscience; it is elegant, parsimonious science. The mental process seeks the strongest associative thought and behavior seeks well-being as a function of unique personal experience. The "medical model" of mental distress (the Disease Model) is wrong; mental distress expresses natural, painful emotional suffering from distressful experiences (typically of the marginalized and disenfranchised). Consistently, "mental disorders" describe coping styles psychiatry deems disabling (non-conforming, non-productive, and/or disruptive) as well as natural emotional suffering. Natural Psychology explains human psychology with the binary science of motivated-thinking consistent with scientists modeling the brain after binary computers: nervous tissue structured for motivation directs nervous tissue structured for thinking. Thinking theory was the original debate in psychology because it is the most important issue; Natural Psychology revives the storied intellectual advocacy of associative thinking. Associative thinking was difficult to understand without understanding the motivation that directs it; Natural Psychology now explains the motivation for associative thinking (in an interactive loop). Integrating the two original thinking theories of neo-rationalism and associative thinking explains human psychology.

Behavior seeks emotional well-being through associative thinking from individual experience; emotions express success or failure to achieve this goal. Experiences of emotional well-being are learned associations of physiological energy based on the predominance of infant experiences; behavior thereby seeks emotional well-being similar to seeking physiological health during infancy. Humans are sensing organisms as well as thinking organisms; emotions are physical sensations related to experiences of emotional well-being and experiences of emotional suffering. Consistently, there are two types of emotions: happiness expresses experiences of emotional well-being and sadness expresses experiences of emotional suffering (mental distress). Emotional pain and physical pain are sensed similarly; a disease cannot produce more pain than emotional suffering. Distressful experiences naturally cause painful anxiety and depressing experiences naturally cause painful depression; made-up diseases do not cause anxiety or depression. Mental distress expresses natural, painful emotional suffering from distressful personal experiences (distressful life circumstances); "mental disorders" include coping styles psychiatry deems *disabling* (non-conforming, non-productive and/or disruptive).

"Mental disorders" are social constructs based on scientific failings at the foundation of popular theory. The concept of "mental disorders" is supported by contradictions of the most

basic principle of every science that informs psychiatry: 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 general science theory, 2) fails to address the physical (material) world as well as consider evolutionary theory and simple principles of human nature in contrast to natural science theory, 3) addresses philosophy (the philosophy of *mind*) in contrast to biology theory, and 4) fails to consider tissue neurophysiology in contrast to physiology theory. In contrast, Natural Psychology is consistent with general science theory that demands parsimony-fewer assumptions; it is a radically different perspective of widely accepted neuroscience. A multitude of annual doctoral theses can challenge details of any psychology theory (McIntyre, 2006, p. 24) but none can falsify this new paradigm. Second, Natural Psychology is consistent with natural science theory; it addresses the physical world of the brain and nervous system. Moreover, Natural Psychology explains evolutionary theory; seeking well-being based on lived experience promotes species survival in a manner completely adaptable to different and changing environments. Natural Psychology is also consistent with the natural science advocacy of simple principles of nature; it explains psychology with the simple binary principle of motivated-thinking (consistent with modeling the brain after binary computers). Third, Natural Psychology is consistent with biology theory that contends that an organism is understandable through its physical mechanisms; a philosophy of "mind" is extraneous to biology. Fourth, Natural Psychology is consistent with physiology theory that explains all other organs of the body with tissue physiology. The nervous tissue of the cerebral cortex is thinking anatomy; the general flow of neural communication through this nervous tissue explains the tissue neurophysiology of associative thinking. The nervous tissue of the limbic system is motivation anatomy; the stagnated flow of neural communication in this nervous tissue explains the motivation for behavior to seek well-being. The limbic system also motivates behavior with the endocrine system. Although this new psychology paradigm may be difficult to understand from the perspective of the established paradigm, it is based on parsimonious neuroscience that is observable, verifiable and falsifiable.

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 behavior and the mental process in terms of the anatomy of the cerebral cortex and the limbic system. The cerebral cortex is the structure of thinking nervous tissue and the limbic system is the structure of motivating nervous tissue. Second, this thesis is *functional psychology*; it explains behavior and the mental process

in terms of motivation neurophysiology directing thinking neurophysiology. Third, this thesis is *psychoanalytical psychology* as far as advocating that traumatic experiences cause mental distress, that traumatic experiences are often unavailable for recall, and that associative thinking can assist recall. Fourth, this thesis is *behavioral psychology*; it explains all behavior as conditioned and promotes therapy based on conditioning experiences that neutralize emotional suffering and promote emotional well-being. Lastly, this thesis is *humanistic psychology* in explaining our common humanity (our common neurophysiology) and how it should increasingly foster altruism. Natural Psychology is a unified theory of structural psychology, functional psychology, psychoanalytic psychology, behavioral psychology and humanistic psychology.

Natural Psychology is a parsimonious new paradigm of human psychology based on the binary neuroscience of motivated thinking. Natural Psychology explains “mental disorders” as natural, painful emotional suffering and/or coping styles that psychiatry deems *disabling*. “Mental health” (emotional well-being) improves by increasing affirming experiences that promote emotional well-being; these are typically experiences of increased social or economic justice. Consistently, community mental health improves with more social and economic justice. Since power corrupts, there is a never-ending human struggle for democratic freedom and political transparency to challenge elitism and class privilege. Unfortunately, there is a similar never-ending human struggle to steward Mother Earth. Natural Psychology may initially seem base and dehumanizing but there is natural grandeur in our simple, glorious mental process. Societies will not abandon the concepts of free will and individual responsibility; instead they will integrate these concepts into the truth about our natural psychology. Self-knowledge will inspire an exciting new era of intellectual and moral enlightenment (McIntyre, 2006, p. 38). The prospects for improving the human social condition are dramatic as a better understanding of our glorious individuality and common humanity promote personal creativity and increased altruism.

Appendix A
Neo-Dualism and Human Psychology

Natural Psychology explains human psychology with true science; it challenges the philosophical neo-dualism of the popular psychology/psychiatry paradigm. Cultural expectations often direct science; the social construction of philosophy (the philosophy of "mind") as medical science epitomizes this problem. An abstract mind is a widely accepted social construct but it is philosophy- not science; a philosophical concept cannot be supported by science regardless of "sciency" methodology. The current paradigm postulates with the *biopsychosocial theory* of psychology whereby psychological factors of a philosophical "mind" mediate between brain biology and environmental experience. Classical dualism advocated that a soul was distinct from the physical brain; this previous theological dualism is now replaced with a philosophical dualism of a "mind" that directs behavior. However, unlike classical dualism, cultural expectations for a philosophy of *mind* have corrupted science: medical schools accredit psychiatry's philosophical pseudoscience as a medical (biological) science.

Although classical dualism is theology and neo-dualism is philosophy, both attempt to elevate humans from a vilified concept of human nature. All behavior is natural- human nature; postulating that human psychology is separate from human nature is unscientific. It is unscientific to vilify human nature by only ascribing behaviors community leaders deem undesirable to it. Considering negative behaviors to have natural origins while considering positive behaviors to have philosophical or theological origins is an obvious negative bias against human nature. Current natural science theory vilifies nature with a perspective of nature as "red in tooth and claw" (Tennyson, 1849). The vilification of nature is expressed on the cover of *The Origin of Species* published by Bantam Books in 1999; it resembles a painting of hell by Hieronymus Bosch. Consistent with the vilification of human nature, *evolutionary psychology* redefines altruism as non-altruistic; it describes altruism as merely promoting the selfish self-interest of procreation or "reciprocal positive returns" (Wright, 1994, pp. 189-209; Passer, 2009, p. 656). The vilification of human nature is consistent with a history of evolutionary theory being co-opted to support unconscionable theories of social exploitation. Pseudo natural science theory has been used to support erroneous and contemptible theories of social Darwinism, eugenics, forced sterilization and the social control of behavior (McIntyre, 2006, p. 29). 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 (Barkow, 1992; Wright, 1994, pp.

313-315; Dennett, 1996; Pinker, 1997; Wimsatt 1997; Wilson, 1998; Machamer, 2002; Buss, 2007; Kelly, 2007).

In contrast to the current vilification of human nature, Charles Darwin describes all behavior as human nature in *The Descent of Man* (Darwin, 1871). Darwin addresses the value of altruism and cooperation for many species; Homo sapiens top that list. The popular vilification of nature contrasts Darwin's love of nature; Darwin was a self-described naturalist who embraced nature (Darwin, 1859; Darwin, 1871). Although Darwin states that the fittest will survive and pass along their genes, he did not describe the fittest as the meanest and most aggressive. Consistent with Darwin, Stephen Gould describes all human behavior as natural in *The Mismeasure of Man* (Gould, 1996, p. 39). This thesis understands that human nature produces behaviors that are reprehensible but these behaviors do not define human nature or the capacity of humans for altruism. All admirable behavior is human nature; human nature is glorious in totality regardless of blemishes.

Evolutionary psychology, sociobiology and human behavioral ecology falsely purport a natural science perspective of psychology while attempting to integrate biology and evolutionary science into a philosophy of *mind*. *Evolutionary psychology* leads this abomination of natural science theory with its increasingly complex and abstract social construct (Cosmides, 1999). Evolutionary psychology identifies behaviors it considers consistent with "Tarzan and Jane" without referencing accepted empirical neurobiology or the natural science advocacy of simple principles of nature. Evolutionary psychology supports the cultural vilification of human nature by identifying behaviors it considers primitive and simply tagging them as human nature in contrast to more civilized behaviors (Barkow, 1992; Wright, 1994; Pinker, 1997; Buss, 2007). Moreover, evolutionary psychology assumes without evidence that the motivation to seek species survival also implies a motivation to seek individual survival, cell survival, and even gene survival (Dawkins, 1976). *Evolutionary psychology*, *sociobiology* and *human behavioral ecology* make unfathomable assumptions in their efforts to integrate biological and evolutionary theory into a philosophy of mind; this makes their theories non-falsifiable pseudoscience (Gould, 1997).

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. It ignores the fundamental principle of computers operating through binary science and instead focuses on details of computer functions. There are numerous other fallacies in how AI currently models the brain after computers. First, the brain is malleable, growing and changing; computers are fixed systems. Second, brains learn (by growing neural connections) while computers are externally programmed. 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 cerebral cortex and the limbic system of the forebrain. There are numerous problems with how scientists currently model the brain after computers but the biggest problem is ignoring its fundamental principle of binary science.

Natural Psychology challenges the popular vilification of human nature with an elegant theory of real natural science. Psychiatry addresses philosophy (the philosophy of *mind*); this neo-dualism is pseudo natural science by definition. In contrast, Natural Psychology explains all behavior and mental processes as human nature with empirical neuroscience; human psychology is human nature. Although there is much repugnant behavior, our common humanity (human nature) naturally promotes increasing altruism (Sober, 1998); understanding our natural psychology will hasten the process.

Appendix B
The Neuroscience of Thinking

Consistent with the scientific understanding of all other organs of the body besides the brain, thinking is explained by tissue physiology- by the structure and function of nervous tissue. The nervous tissue of the cerebral cortex (the exterior of the forebrain) is structured for thinking- thinking anatomy; the general flow of neural communication through the cerebral cortex is thinking physiology. Connectionist neural networks connect (associate) sensory information from touch, sight and sound in the central, *association area* (a technical term) of the posterior cerebral cortex. Thereafter, neural information is channeled forward 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; it can also affect behavior by channeling neural information back through the peripheral nervous system. Substantially common genetics create substantially common patterns of neural communication through the cerebral cortex so humans think similarly enough to enable communication. The neurophysiology of the cerebral cortex explains associative thinking and how it produces behavior; this neuroscience is empirical- observable and verifiable.

The common flow of neural communication through the cerebral cortex is empirical neuroscience that can be described in more detail. Primary sensory information about touch, sight and hearing is channeled into different areas of the peripheral posterior cerebral cortex; primary sensory information creates an understanding of the environment. Secondary sensory information is supportive of primary sensory information; it channels clues about the desirability or undesirability of tastes and smells into the limbic system to affect motivation. Primary sensory information flows to different areas of 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 (through directional *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 interconnects (*associates*) primary sensory information. Thereafter, common neural pathways direct neural 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 gray matter (less-directional neuron cells) that creates complex interconnections based on learning from lived experience. Consistently, accepted neuroscience describes complex patterns of neural interconnections in the *association area* of the frontal lobe producing complex thinking including cognition, rationality and consciousness. Besides producing thinking, 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 down through the spinal cord to the peripheral nervous system to stimulate muscles for behavior. The empirical neuroscience of the common flow of neural communication through the cerebral cortex explains (associative) thinking and behavior.

Areas of white matter and areas of gray matter are substantially common in the cerebral cortex based on substantially common genetics. White matter has longer myelinated axons that direct neural communication; gray matter has shorter unmyelinated axons that are significantly less directional. The directional nature of white matter creates substantially common thinking patterns for humans; consistently, essentially common fissures and ventricles also promote common thinking patterns. In contrast to white matter, connectionist networks of gray matter common to *association areas* of the cerebral cortex create significantly unique thinking based on learning. Learning (growing dendrite to connect neurons) from personal experience creates unique neural interconnections of gray matter in association areas of the cerebral cortex. Unique human psychology is created by unique physical connections of gray matter in the cerebral cortex based on unique learning from unique individual experience.

The general flow of neural communication through the cerebral cortex explains current mysteries surrounding trauma (damage) 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 flow of auditory information. Wernicke’s area lies directly in path of the common flow of auditory information from the auditory cortex to the central, *association area* of the posterior 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 the general flow of neural communication to the muscles of the mouth. Broca’s area lies directly in the path of neural information from the association area of the frontal lobe to the area of the motor cortex that affects the muscles of the mouth. Since the brain is a living organ that develops (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.

Since neuroscientists have a general, accepted understanding of cellular neurophysiology, they have all the information they need to understand the tissue neurophysiology that explains thinking- associative thinking. Molecular neurophysiology is too complex to inform thinking. Neuron cell communication at their synapses explains cellular thinking; networks of neuron cells communicating throughout the nervous tissue of the cerebral cortex explain tissue thinking- thinking neurophysiology. The structure and function (anatomy and physiology) of the nervous tissue of the cerebral cortex explains associative thinking. Complex associations create complex thoughts; behavior is affected when neural networks of associations direct flow into the peripheral nervous system. This basic empirical neuroscience is lost to established theory that socially constructs a complex neo-rational mental principle. The advanced technology of brain scans is often used to philosophize about a complex, abstract mental process (Amen, 1999) 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 and verifiable.

Appendix C
The Neuroscience of Motivation

Consistent with the scientific understanding of all other organs of the body besides the brain, the motivation to seek well-being is explained by tissue physiology- by nervous tissue. Thinking neurophysiology is naturally motivated to seek the greatest electrical brain energy of life (neurophysiological energy) from the strongest associative thought from the previous thought or from sensory stimuli. Since experiences associated with physiological energy (physical well-being) during formative years are generally experiences of emotional well-being, behavior is naturally motivated to seek emotional well-being. Conversely, since experiences associated with physiological energy deficits during formative years are generally experiences of emotional suffering, behavior is naturally motivated to avoid emotional suffering. This thesis explains the widely accepted neuroscience theory about the role of the limbic system in human motivation. In contrast to the thinking nervous tissue of the cerebral cortex, the path of the flow of neural communication dead-ends into the limbic system. In the limbic system, the avenue of neural networks ends with the hippocampus and amygdala as well as the endocrine system. The dead-end structure of the nervous tissue of the limbic system is the anatomy of motivation and its function is the neurophysiology of motivation. Elementary neurophysiology explains how the limbic system motivates the mental process to seek the strongest associative thought and motivates behavior to seek well-being.

The dead-end structure of the limbic system promotes neurophysiological energy (life) with two different nervous tissue structures; the first directs the endocrine system (with the hypothalamus), and the second senses the neurophysiological energy of the forebrain (with the hippocampus and amygdala). First, the limbic system fosters neurophysiological energy by managing the endocrine system that motivates behavior as well as regulating physical development with hormones. The hypothalamus of the limbic system rewards experiences associated with well-being by directing the pituitary gland to produce desirable hormones like endorphins. Conversely, the endocrine system punishes distressful experiences associated with a lack of well-being by directing the adrenal glands to produce uncomfortable stress hormones like epinephrine. Stress hormones motivate behavior into action to promote survival but are distressful to experience.

Besides directing the endocrine system, the limbic system fosters neurophysiological energy with the function of the dead-end structures of the hippocampus and amygdala. The

dead-end structures of the hippocampus and amygdala (shaped like ram's horns) make them especially sensitive to their level of neurophysiological energy by stagnating the flow of neural communication. The inhibited flow of neural communication in the limbic system makes action potentials more difficult and thus these neurons cells are more sensitive to their physical state. The level of neurophysiological energy of the hippocampus and amygdala is a barometer sensitive to the overall level of neurophysiological energy of the forebrain and thereby the whole organism. Damaging the hippocampus hinders its ability to sense neurophysiological energy and thereby reduces the motivation for behavior and the sensation of emotions. The amygdala is a more slender structure with an expanded end; damage to this structure is more problematic. Damage to the amygdala nearly eliminates the sensitivity to neurophysiological energy and thereby nearly eliminates the motivation for behavior. Since people remember experiences that have importance in their lives and forget mundane experiences, damage to the hippocampus and amygdala destroys the motivation necessary to create new memories. The hippocampus and the amygdala provide the motivation to create memories; current theory pushes complexity to absurdity when theorizing about memories stored in these cells. The limbic system promotes neurophysiological energy by sensing the level of neurophysiological energy in the brain and seeking higher energy levels. The limbic system senses neurophysiological energy as desirable and senses neurophysiological energy deficits as aversive, and thereby seeks the energy of life. The neurophysiological motivation of the limbic system to seek energy explains the motivation for the mental process to seek the energy of the strongest associative thought and for behavior to seek well-being.

Physiology theory implores neuroscientists to explain the brain with tissue neurophysiology and to further explain tissue neurophysiology with cellular neurophysiology (as explained in Chapter One). The neurophysiological motivation of the nervous tissue of the limbic system to seek the energy of life is explained by the cumulative effect of the neuron cell motivation to seek energy (and avoid an energy deficit). Neuron cells have a unique ability to sense their own physical condition; cumulatively, they create a sensing tissue. Neuron cells seek the electrical brain energy of life and avoid a lack of neurophysiological energy; neuron cells sense a lack of homeostasis as aversive. The biological motivation of neuron cells to seek homeostasis (a resting potential) is accepted science; however, this biological motivation is incomplete. If neurons only sought homeostasis, humans would seek sleep and comas rather than life and reproducing the species. Besides seeking homeostasis, neuron cells seek the electrical energy of life- an action potential. The neuron cell is a sensing cell that senses the electrical brain energy of the spark of life as attractive and energy deficits of a lack of

homeostasis as aversive. Consistently, neuron cells sense hormones associated with wellbeing (like endorphins) as attractive and stress hormones associated with distress (like epinephrine) as aversive. The cumulative effect of the neuron cell motivation to seek energy explains the nervous tissue motivation to seek energy; nervous tissue motivation explains the motivation for thinking and behavior.

The motivation for the mental process to seek the strongest associative thought and for behavior to seek well-being is explained by the tissue neurophysiology of the limbic system. The tissue neurophysiology of motivation to seek neurophysiological energy is further explained by accepted cellular neurophysiology. Molecular neurophysiology may eventually explain cellular neurophysiology but is extraneous to explaining the tissue neurophysiology of human motivation.

Appendix D
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, Natural Psychology 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; consistent with all thinking, the mental process seeks the strongest associative thought. Moreover, this appendix explains personality, language and social psychology; consistent with all behavior, behavior seeks well-being through associative thinking as a function of personal experience. Natural Psychology explains complex and abstract psychology theories with a parsimonious new paradigm.

Popular theories about learning, cognition and memory are understandable in terms of associative thinking for the future, 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; conditioned learning starts in the womb with a baby's "temperament" reflecting fetal experiences. Learning is produced by the physical interconnection of neurons in association areas of the cerebral cortex as a function of experience; associative learning is a process of forging new neural connections. Neuroscientists prove that learning is a function of growing dendrite to connect neurons with empirical observations of environmentally deprived brains having significantly fewer dendrite connections. Popular learning theories of *observational learning* and *modeling* affirm learning based on associative thinking. Popular descriptions of an *orienting response*, *habituation* and *sensitization* attempt to adapt associative learning to a complex neo-rational mental principle. To the extent that the popular concept of reinforcement is consistent with promoting personal well-being, current learning theory correctly describes behavior *reinforcers*. However, current theory fails to understand reinforcers when they do not promote well-being; thus *external reinforcers* are rarely successful when they are perceived as manipulative. Current learning theory is basically correct in describing *connectionist neural networks* in a *parallel distributed processing* model but it erroneously attempts to adapt PDP to a complex neo-rational mental principle (as explained in

Chapter Five).

Popular cognition theory attempts to explain cultural expectations for a complex neo-rational mental principle but it lacks structural and functional neuroscience support. This thesis explains popular cognition theories about *reasoning, problem-solving* and *decision-making* with a more fundamental theory of associative thinking. Reasoning, problem-solving and decision-making describe the glorious process of associating all relevant neural information to purposely attain the best, most inclusive answer. In contrast, popular cognitive theory advocates a complex, ambiguous *neo-rational* mental process that *interprets* environmental stimuli after *encoding*, *storing*, and *decoding* information. The popular cognitive theory of parallel distributive processing seeks to adapt the empirical neuroscience of connectionist networks to an erroneous philosophy of complex neo-rationalism. Popular descriptions of biologically based mechanisms are only hypothetical constructs; they do not identify a structural and functional process- empirical neuroscience. Jean Piaget advocated classic cognitive theory but it merely described common age-related experiences that fostered well-being for Euro-American culture during his era (Piaget, 1954). The multitude of competing newer cognition theories should discount their respective value. Popular cognitive theory presumes that the mental process operates on a complex, ambiguous principle of neo-rationalism; in contrast, associative thinking explains cognition with elemental empirical neuroscience.

Popular memory theory generally accepts associative thinking while wrongly attempting to adapt it to cultural expectations for a complex neo-rational mental process (consistent with learning theory). Natural Psychology describes recall consistent with all thinking; recall is the strongest associative thought about a past thought or experience. Thoughts associated with distress or well-being have stronger neural network connections and are thus easier to recall; conversely, thoughts about mundane experiences have weaker connections and are difficult to recall. Hence, it is difficult to establish memories when sick or tired and difficult to recall thoughts while distracted by stronger thoughts. Extremely traumatic experiences are often unavailable for recall when the strongest associative thought is fear and panic rather than orienting details that promote recall. Amnesia describes traumatic experiences that are unavailable for recall because their painfulness is a stronger association than more orienting experiences. Consistent with learning through associative thinking, our understanding of the world takes time to develop and is too abstract for recall during the first couple years of life. The *parallel distributed processing* model correctly identifies the empirical neuroscience of memory but erroneously seeks to adapt the theory to a complex neo-rational principle. Popular *context-dependent memory theory (state dependent theory, mood–congruent theory, encoding specificity principle theory*) correctly

describes associative recall; retrieval cues rely on associative thinking. Recall is enhanced by various methods that rely on associative thinking. The most popular method of promoting recall is *mnemonics*; mnemonics establishes a chain of strong intermediate associations that promote recall. The mnemonics method of *loci* has been popular since the ancient Greeks developed this method of promoting recall by associating intermediate associations with a physical location. Associative thinking is apparent when music that was the background of an emotional experience prompts recall of the experience when the music is heard after an intervening period. Marcel Proust became famous for his description of memory based on associative thinking; he describes the rush of memories produced by sights and sounds associated with childhood experiences (Proust, 1927). Current memory theories of *sensory memory, short-term* and *long-term memory, declarative memory* and *procedural memory* seek to integrate associative thinking into a neo-rational mental process. Consistently, memory theories about encoding, storage and retrieval are socially constructed in support of a neo-rational mental principle. 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 about future thoughts (learning), present thoughts (cognition) or previous thoughts (memory). While scientists accept learning and memory based on associative thinking, they should consider associative thinking for all thinking.

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

Popular theories about states of consciousness attempt to explain cultural expectations about a complex neo-rational mental principle (without neuroscience support); in contrast, Natural Psychology explains 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. Consciousness describes sufficient information from the senses to create self-awareness and orientation to the environment. Elevated consciousness from the sympathetic nervous system has evolved to foster survival; stress hormones increase sensory stimuli and neurophysiological energy. Conversely, decreased consciousness is produced by fatigue and physical sickness that reduce sensory stimuli and neurophysiological energy. Semi-consciousness describes reduced information entering the brain during deep relaxation and sleep. Associative thinking during sleep is abstract because it lacks sensory information sufficient for orienting to the environment;

associative thinking becomes too abstract for recall during deeper sleep. The “stages” of sleep arbitrarily categorize degrees of reduced sensory information to the brain. Consistently, meditation, yoga, acupuncture and hypnosis are not different states of consciousness; they are normal consciousness that approaches semi-consciousness. 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 physical trauma. Consistently, anesthesia causes unconsciousness by restricting the flow of sensory stimuli to the forebrain. The unconscious mental state of a coma is physical and real; this contrasts Feud’s philosophy of repressed memories as *subconscious* or *unconscious*. Mind-altering drugs also affect brain operation but describing their affects as different “states of consciousness” is philosophy rather than science. In contrast to popular psychology theory; consciousness, semi-consciousness, and unconsciousness are explained by associative thinking.

Popular perception theories attempt to explain cultural expectations about a complex neo-rational mental principle but they lack structural and functional neuroscience support. Current perception theory describes sensory stimuli being *encoded*, *organized* and later *interpreted* in a process that supports cultural expectations for a complex neo-rational mental principle. *Parallel distributive processing* in perception theory describes the empirical neuroscience of connectionist neural networks but erroneously attempts to adapt this neuroscience to a neo-rational mental principle. *Visual perception, principles of organization, principles of components, depth perception, motion perception* and *perceptual constancies* are cultural descriptions of associative thinking. Perceptual illusions are confusing based on a neo-rational mental principle but are readily explained by the manipulation of typical associations. The perception of physical pain is a learned association with physiological energy deficits; hence there is a wide variation of pain reported among people with similar injuries. Consistently, some members of non-western cultures do not experience pain from rituals that would cause excruciating pain to westerners (Melzak, 1973). The perception of pain based on associative thinking from experience also accounts for pain epidemics (Gawande, 1998). Sensory information from one sense can be associated with another sense; *synesthesia* is readily explained with associative thinking while inexplicable with popular theory. The multitude of competing popular perception theories should discount their individual value; in contrast, perception is explained by associative thinking.

Popular intelligence theories similarly support cultural expectations for a complex neo-rational mental principle but they lack structural and functional neuroscience support. Current intelligence theories seek to describe levels of mental acuity that typically remain relatively consistent over a lifetime based on the importance of formative learning (the cumulative nature of

learning). Mental acuity is generally a function of motivation, focus, and the quality of environmental stimuli; more motivation, an unconflicted focus and more environmental stimuli produce better mental functioning. Consistently, little environmental stimuli during formative years produce mental retardation as documented in studies of early American orphanages (Spitz, 1945) 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 disputes a genetic basis for intelligence (Wade, 2006, p. 94). Consistently, Stephen Gould challenges the concept of innate intelligence based on reification (Gould, 1996). The multitude of competing popular intelligence theories should discount their individual value; in contrast, associative thinking explains intelligence with elemental empirical neurophysiology.

Popular theories about mental states of consciousness, perception and intelligence support cultural expectations for a complex neo-rational mental principle but lack structural and functional neuroscience support. In contrast, associative thinking explains all thinking as a function of associative thinking.

Besides explaining popular 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 individual experience.

Popular personality theories attempt to explain cultural expectations for a complex, nativist neo-rational mental principle but they lack structural and functional neuroscience support. In contrast, personality is explained by habitual behavior patterns fostered by associative thinking that seeks well-being based on individual experience. Since learning is cumulative, habitual behavior patterns learned early in life are often slow to change significantly over a lifetime. A humanistic approach to personality was advocated by Carl Rogers; he describes the behavior motivation of seeking well-being in terms of seeking self-actualization. Seeking self-actualization is a common motivation in western cultures but ignores the common motivation of eastern cultures to seek communalism. Abraham Maslow also proposed a classical 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 (Maslow, 1943). Consistently, Erik Erikson proposed a classical personality theory by describing common age-related social experiences that typically fostered well-being for Euro-American culture during his era (Erikson, 1959). Freud, Rogers, Maslow and Erikson all describe personality theory based on seeking self-actualization common to western cultures while excluding the communalism that promotes well-

being in eastern cultures. More recently, several new personality theories including the *cognitive-effective personality system*, the *five factor model* and the *16-PF model* are attempting to better explain personality but are without empirical neuroscience support. These competing personality theories should discount their individual value; in contrast, personality is explained by habitual behavior patterns that seek well-being based on associative thinking from individual experience.

Popular language theories attempt to make language consistent with cultural expectations for a complex neo-rational mental principle but lack structural and functional neuroscience support. In contrast, language is explained by behavior seeking well-being based on associative thinking similarly to all other behaviors. People learn language to communicate because communicating with others typically promotes well-being; people have difficulty learning language or using language when it does not promote well-being (when people do not believe that they can be understood). Just because no one teaches toddlers grammar does not mean that there is a *language acquisition devise*- an abstract mental mechanism 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 (Whorf, 1956). Noam Chomsky's rejection of language as a function of behavior conditioning is based on misunderstanding the motivation for behavior conditioning. Chomsky and behaviorists are wrong to believe that the motivation for behavior conditioning is based on a universal, standardized concept of well-being. Consistent with all behavior, language usage is based on seeking well-being as a function of unique personal experience. The multitude of popular, competing language theories should discount their individual value; in contrast, seeking well-being as a function of experience explains language.

Popular social psychology theories attempt to make social behavior consistent with cultural expectations for a complex neo-rational mental principle but they 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. Humans typically achieve well-being through social support and experiences that affirm a self-image; hence people are habitual and generally like familiarity (Nairne, 2003, pp. 478-479). The emotional well-being of social affirmation is usually achieved through conformity to social norms that fosters reciprocal social support. Although ethnocentricity generally fosters the well-being of social support, it can unfortunately also foster prejudice as a function of (antisocial) lived experience. Sadly, physical dominance over others can similarly be a conditioned association of well-being that reduces negative emotions of powerlessness. Since social psychology is a function of experience, some cultures produce significantly more altruism

than others (Wade, 2006, pp. 480). As cultures develop and better understand our common humanity, human experience increasingly fosters empathetic and altruistic behaviors. Since fairness typically promotes well-being, people generally dislike hypocrisy and feel *cognitive dissonance* when their own behaviors do not match their ideals. Sociocultural psychology describes the wide variety of cultural norms for behavior that promote well-being based on associative thinking as a function of experience- cultural experience. The multitude of competing social psychology theories 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, all behavior is explained as seeking well-being through associative thinking based on unique individual experience.

Natural Psychology explains behavior and the mental process; the mental process seeks the strongest associative thought and behavior seeks well-being as a function of singular personal experience. Natural Psychology is a unified, comprehensive explanation of human psychology including learning, cognition, memory, mental states of consciousness, perception; intelligence, personality, language, and social psychology. Natural Psychology is elegant, parsimonious science.

Appendix E
Explaining “Mental Disorders”

“Mental disorders.” pathologize natural, painful emotional suffering and coping styles psychiatry deems *disabling* (non-conforming, non-productive and/or disruptive). The mental process seeks the strongest associative thought and behavior seeks well-being based on unique personal experience; mental distress expresses a lack of emotional well-being from distressful experiences (distressful life circumstances). Mental distress is the natural biology of distressful experiences (distressful life circumstances) rather than a brain malfunction or “mental disorder.” Humans are sensing organisms as well as thinking organisms; emotional pain and physical pain are sensed similarly by the brain. Current connotations do not adequately describe the painfulness of emotional suffering expressed in *anxiety*; a real disease cannot be more painful. The painful anxiety of mental distress is often obscured by depression that slows the mental process when success seems remote or hopeless. Consistent with distressful experiences naturally causing painful anxiety, depressing experiences naturally cause painful depression; made-up diseases do not cause anxiety or depression. Besides pathologizing natural emotional suffering (expressed in anxiety and depression), “mental disorders” also pathologize most coping methods that address emotional suffering. Psychiatry pathologizes counterproductive coping strategies for emotional suffering- coping styles that seek short-term relief of emotional suffering at the expense of long-term gain. The marginalized and disenfranchised often seek (minimal) relief from painful anxiety and depression through coping behaviors psychiatry deems *disabling* (non-conforming, non-productive and/or disruptive). Broadly construed, compulsions are behaviors *associated* with well-being from unique individual experience that are sought so frequently or intensely that they are counterproductive- cause more emotional suffering. A “mental disorder” describes the presentation of mental distress (anxiety or depression) or coping styles considered *disabling or counterproductive* (predominately compulsions broadly construed).

In contrast to the current complex and ambiguous psychology/psychiatry paradigm, Natural Psychology is a unified, comprehensive explanation of common DSM “mental disorders” commonly addressed in most psychological texts. DSM diagnoses focus on details that differentiate expressions of emotional suffering and coping methods it deems disabling while failing to consider common threads. This chapter provides a unified explanation of what popular theory describes as anxiety disorders (general anxiety disorder, phobic disorder, panic disorder, and obsessive-compulsive disorder), eating disorders, substance abuse disorders, mood

disorders (major depressive disorder, dysthymic 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 disorders (paranoid schizophrenia disorder, disorganized schizophrenia disorder, catatonic schizophrenia disorder, and unspecified schizophrenia disorder).

The anxiety "disorders" of *general anxiety disorder, phobic disorder, panic disorder* and *obsessive-compulsive disorder* focus on presented symptoms of anxiety; anxiety is the sensation of emotional suffering. Anxiety describes the emotion of distress; in contrast to popular theory that intellectualizes emotions, 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 a "disorder" described as a disproportionate response to a stressful event; the term *event* erroneously implies a common experience. Established theories lack an understanding of the wide range of life circumstances that make some extreme reactions to distressful experiences proportionate. Natural Psychology explains all anxiety as natural and proportionate to unique personal experience or life circumstance. Unfortunately, it can be difficult to understand one's own experiences within the context of the popular paradigm and infinitely more difficult to understand the experiences of others. Emotions are feelings of emotional well-being or of distress based on unique personal experience; emotional suffering and related anxiety are directly related to the distressfulness of the experiences.

Broadly construed, *general anxiety disorder* pathologizes general presented symptoms of anxiety- the *feeling* of sadness. Humans are sensing organisms as well as thinking organisms; anxiety describes the feeling of aversion associated with distressful experiences. The painfulness of anxiety evolved as strong motivation for behavior to avoid sadness and related distressful experiences that generally harm species survival.

Broadly construed, *phobic disorder* describes presented anxiety caused by specifically distressful experiences; this contrasts general anxiety disorder that describes anxiety caused by generally distressful experiences. *Phobic disorder* pathologizes specific fears; they are typically learned by traumatic experiences during childhood that are unavailable for recall. Phobias are as numerous as the number of unique personal experiences that can be associated with extreme emotional suffering (Culbertson, 2010). Unusual lived experience can produce a traumatic fear of flowers (anthophobia), books (bibliophobia), snow (chionophobia) and pleasure (hedonophobia).

Social anxiety disorder and *agoraphobia* are two of the most common types of behaviors pathologized as *phobic disorders. Social anxiety disorder* describes anxiety about being vulnerable to personal attacks in public. Consistently, *agoraphobia* describes anxiety about being vulnerable to personal attacks in public when leaving the comfort of home (a familiar, more controlled environment). It is unfortunate that the Greek and Latin terms typically used to label phobias bolster the legitimacy of their pathologies.

Broadly construed, *panic disorder* pathologizes a sudden onset of painful anxiety caused by intense phobic fear from "triggers"- experiences strongly associated with distressful experiences. *Panic attacks* are frightening and thereby debilitating because the popular paradigm considers the pain p*athologically irrational*; in contrast, associative thinking easily explains this natural, sudden onset of anxiety.

Broadly construed, *obsessive-compulsive disorder* pathologizes obsessions and compulsions; obsessions describe problematic thoughts strongly associated with either emotional well-being or emotional distress and compulsions describe problematic behaviors strongly associated with well-being. Obsessive thoughts describe thoughts that are problematic when their repetitiveness and persistence become counterproductive; obsessive thoughts are about emotional suffering or imagined solutions to the pain. The subjects of obsessive thoughts are as numerous as either the number of traumatic experiences that can cause emotional suffering or the number of imagined solutions to painful emotional suffering. While obsessive thoughts can be fixated on either emotional suffering or relief from the suffering, compulsions seek relief with behaviors that are strongly associated with emotional well-being. Compulsive behaviors are *counterproductive or disabling* behaviors *associated* with well-being from unique personal experience. Ritual behaviors are common compulsions; control of personal space, orderliness and predictability can promote increased emotional well-being for those who feel impotent. Compulsive behaviors are as numerous as the number of problematic behaviors that can be strongly associated with emotional well-being (especially during childhood). Compulsive cleaning and hand washing, compulsive hoarding, compulsive checking of door locks and important papers, compulsive sex (*sexual addiction*), compulsive tics and verbal outbursts (*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. Compulsive behaviors are increasingly attractive in direct proportion to the strength of their association with

emotional well-being and to the intensity of anxiety that they seek to relieve. Conversely, compulsive behaviors are avoided in direct proportion to the likelihood of negative consequences and the perceived distressfulness of the consequences. Since social criticism causes distress, people generally conceal (or deny their severity) their compulsive behaviors. Current theory pathologizes compulsions in terms of a malfunctioning "impulse control mechanism"; this is a social construct without neuroscience support. Compulsions are perplexing within the context of the current paradigm that is based on a neo-rational mental principle; in contrast, associative thinking explains the wide range of compulsive behaviors.

Popular psychology theory narrowly defines compulsive behaviors; broadening the definition promotes a unified explanation of a wide range of aberrant behaviors including *eating disorders* and *substance abuse disorders*. Broadly construed, *eating disorders* are understandable as compulsive behaviors- counterproductive or disabling behaviors strongly associated with well-being from unique personal experience. Compulsive eating (*eating disorder*), compulsive dieting (*anorexia nervosa*), and compulsive eating while compulsively dieting (*bulimia nervosa*) are problematic behaviors strongly associated with well-being from lived experience. 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 problematic eating compulsions promote additional, painful distress that can promote a downward cycle of abuse.

Consistent with *eating disorders*, *substance abuse disorders* are explained as compulsive behaviors- problematic behaviors strongly associated with well-being from unique personal experience. Abused substances generally have a desirable effect on the brain; their use becomes *compulsive substance abuse* when the behavior becomes obviously counterproductive. Substance abuse is fostered by the ability of drugs to promote sensations of emotional well-being as well as by positive social experiences associated with the drug use. Caffeine and nicotine are widely accepted stimulant drugs for adults; youthful consumption typically has additional positive associations of "coming of age." Stimulant drugs temporarily increase physical energy and thus increase related emotional well-being; hence, stimulates like ADHD drugs and tobacco often have a calming effect. Alcohol is a socially-accepted depressant drug that slows physical exertion for increased brain energy and a minimal related sense of emotional well-being. Alcohol intoxication generally fosters a more confident disposition; the self-confidence of intoxication can promote an "angry drunk" for people who feel intimidated by the social interactions when sober. Opiate drugs produce an extremely desirable effect on the brain; it is unfortunate that opiate drug abuse has increased dramatically since doctors made opiate prescriptions commonplace. It is also

unfortunate that drug use becomes a cycle of abuse when fatigue and sickness from excessive use promote seeking short-term relief from more toxins. Compulsive substance abuse causes substantial physical sickness that is typically concealed or discounted by abusers to protect the compulsion and for general protection from social criticism. This unified explanation of *compulsive substance abuse* contrasts current theory that separately categorizes and pathologizes eleven different types of abused substances. Popular theory describes addictive behaviors as "highjacking" the *reward-reinforcement pathway*; this is a social construct without reference to empirical neuroscience. *Substance abuse disorders* are perplexing to the current paradigm that is based on a neo-rational mental principle; in contrast, seeking well-being through associative thinking explains the wide range of compulsive behaviors.

While *anxiety disorders* focus on the distress of emotional suffering, *mood disorders* focus on the moods that anxiety produces. Distressful experiences produce painful anxiety that evolved to motivate behavior to seek emotional well-being; anxiety is naturally suppressed with depression when relief seems distant of hopeless. Depression seeks relief from anxiety by slowing the mental process (thinking). Depression is a natural process for reducing painful emotional suffering by slowing (suppressing) the speed of thinking when thinking is painful and solutions appear distant or unachievable. Depressing experiences naturally cause depression (Abramson, 1978; Horwitz, 2007). 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 depression expresses a lack of motivation for behavior; popular theory pathologizes this as *chronic fatigue syndrome*. Popular theory including *Aaron Beck's cognitive theory* erroneously describes depression as disproportional to a person's life experiences because current theory has little understanding of the lived experiences of others. *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.

The *mood disorders* of *hyperactivity* and *mania* describe the desperate, hyper motivation to seek solutions to painful anxiety. Anxiety naturally promotes *hyperactivity* in children that is typically distressful for parents and teachers (and occasionally for themselves); popular theory pathologizes this behavior as *attention deficit disorder and hyperactivity disorder*. Unfortunately, the current epidemic of ADHD pathologizes natural emotional distress in a culture that is becoming increasingly distressful for children. The hyperactivity of *mania* is typically a more frantic, desperate effort to solve a painfully depressing dilemma. The desperation of mania to

solve extreme emotional pain explains behaviors that are often dangerous and considered poorly conceived. Mania is explained by the painfulness of extreme depression and the excitement (albeit temporary and "irrational") for a potential solution. Broadly construed, *bipolar disorder* and *cyclothymic disorder* describe different degrees of common, pathologized behavior patterns that alternate between the "moods" of hopeless depression and the desperate hopefulness of *mania*. *Bipolar disorder* and *cyclothymic disorder* are different degrees of the same cycle of depression and desperate hopefulness.

Natural Psychology explains all types "mental disorders" beyond those best explained with an understanding of anxiety and depression.

Broadly construed, *sleep disorders* describe how the natural anxiety of emotional suffering causes an inability to relax and get rejuvenating sleep. Anxiety naturally evolved to motivate behavior to resolve distress; an inability to relax often causes sleep problems since relaxation is necessary for sleep. This natural neurobiology is pathologized by popular theory as *insomnia disorder*. Conversely, the hopelessness of depression causes a lack of motivation that is sensed as fatigue; this promotes extra sleep that is pathologized as *hypersomnia disorder.* Extra sleep may also be considered as a desirable option to preserve energy during depression until solutions avail themselves. *Nightmare disorder* and *sleep terror disorder* pathologize (extremely) distressful thoughts during different stages of sleep. Nightmares occur during light sleep when dream imagery is more available for recall; night terrors occur during deeper sleep when associated dream imagery is more abstract and rarely available for recall. Sleep terrors often occur during physical sickness that promotes both deep sleep and substantial mental distress. The *sleep disorder* of *narcolepsy* pathologizes sleep that is motivated at undesirable times; atypical individual experience associated with extreme relaxation can trigger the rapid onset of sleep at undesirable times. In contrast to popular theory, associative thinking explains pathologized problems with sleep.

Broadly construed, *somatic symptom disorders* describe physical ailments that are associated with emotional suffering and occasionally with relieving the suffering. *Hypochondriasis disorder* and *somatization disorder* describe different degrees of socially unacceptable fear about health whereby normal physical (body) sensations are generally associated with (physical) illness. *Pain disorder* is similar to hypochondrias and somatization disorder; an obsessive fear of pain becomes associated with normal physical sensations. *Body dysmorphic disorder* describes an obsessive fear of body defects whereby a specific, normal physical attributes becomes an obsessive focus of personal distress. Consistently, *conversion*

disorders like *aphasia* and *visual agnosia* generally describe fear about becoming mute or blind whereby stronger associative thoughts about fear obscure sensory information. *Conversion disorders* can also be a subconscious strategy to reduce emotional suffering by eliciting sympathy or avoid feared experiences. In contrast to popular theory that is perplexed by *somatic symptom disorders*, Natural Psychology explains them as seeking emotional well-being through associative thinking from unique personal experience.

Broadly construed, *dissociative disorders* describe efforts to avoid painful thoughts and painful experiences through an effort to dissociate from them. People often distance themselves (dissociate) from their undesirable thoughts and behaviors; *psychogenic amnesia* pathologizes disassociation from an intensely painful experience. Although *anterograde amnesia* (the inability to form new memories) can be caused by physical damage to the hippocampus, most amnesia describes thoughts and experiences that are unavailable for recall based on their painfulness. 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* (multiple personalities) describes multiple social schemas that seek relief from overwhelmingly hostile social environments. Hence Frank Putnam's *trauma-dissociation theory* is correct in describing new personalities occurring in response to severe stress. Although *dissociative disorders* are perplexing to current theory, Natural Psychology provides a unified understanding based on seeking well-being through associative thinking from unique personal experience.

Broadly construed, *personality disorders* pathologize undesirable behavior patterns (often compulsive behaviors) that are considered *antisocial* (non-conforming, non-productive and/or disruptive). *Personality disorders* pathologize non-conforming, non-productive and/or disruptive behaviors as a means of political control. People typically learn problematic behavior traits as a means of coping with distressful experiences; they are difficult to change since learning is cumulative and behavior seeks well-being through associative thinking.

Besides explaining anxiety and depression; Natural Psychology explains "mental disorders" that include *sleep disorders*, *somatic symptom disorders*, *dissociative disorder*, and *personality disorders*.

Broadly construed, *schizophrenia spectrum disorders* pathologize the most extreme emotional suffering from the most distressful experiences; they express the most extreme anxiety and/or depression. *Schizophrenia spectrum disorder* is often identified with late adolescence

because the transition from dependent child to independent adult can be unusually difficult. This is especially true if a person learns expectations for adulthood without learning the skills required for achieving the expectations. Nevertheless, the intense emotional suffering expressed in *schizophrenia* can occur anytime extreme misfortune causes extreme, painful emotional suffering. The symptoms of *schizophrenia* become logical when considering extreme emotional suffering based on associative thinking from distressful experiences. The delusions of *schizophrenia* generally express false inferences about the environment as a natural association of intensely distressful life circumstances (Musalek, 1989; Bentall, 2004). Intensely distressful experiences explain the delusions of persecution (*paranoia*), extreme self-condemnation, and grandiose self-concepts. Paranoid delusions express unbelievable misfortune; paranoia often emanates from being the target of cruel childhood "jokes" or other conspiracies (paranoia is often mislabeled when others do conspire in opposition). Self-critical delusions describe an unfair perception of internal causation for extremely distressful experiences typically learned from socialization that promotes a reverse "attribution bias" for the marginalized and disenfranchised. Conversely, grandiose delusions seek a self-image that can resolve emotional suffering when extreme emotional pain dominates attention to the exclusion of critical thinking. Moreover, associative thinking explains hallucinations as well as delusions; consistent with all thoughts, hallucinations are the strongest associative thoughts to the previous thought or sensory stimuli. Hallucinations describe thinking during intense fatigue, sickness, or emotional distress when the strongest associative thought differs from consensus reality. *Auditory hallucinations* are either supportive or self-condemning sub-vocalizations that are intended to motivate behavior to achieve emotional well-being (Sternberg, 2016). Consistent with auditory hallucinations, *visual hallucinations* describe perceptions of the visual environment when the strongest associative thought deviates from consensus reality during intense emotional distress. Visual hallucinations are considered normal when caused by severe fatigue or sickness; fatigue and sickness cause reduced visual information and thereby promote more abstract visual images. Unless motivated by psychotropic drugs, visual hallucinations are typically abstract associations of emotional distress.

All symptoms of *schizophrenia disorder* become logically understandable from the context of acute emotional suffering based on associative thinking from the most distressful experiences. Until the DSM-5 was published in 2013, *schizophrenia was* divided into sub-types: 1) *paranoid schizophrenia disorder*, 2) *disorganized schizophrenia disorder*, 3) *catatonic schizophrenia disorder*, and 4) *undifferentiated schizophrenia disorder*. First, p*aranoid schizophrenia disorder* pathologized intense emotional distress when presented symptoms predominately express a

natural defensiveness about the cause of the suffering. Second, *disorganized schizophrenia disorder* pathologized acute emotional distress when presented symptoms predominately express thinking that is constantly interrupts a train of thought (in a desperate search for relief from its painfulness). The *inappropriate affect* of *disorganized schizophrenia* also becomes logical when considering the experience of severe emotional distress. It is natural for people experiencing extreme misfortune to feel sadness when thinking about others experiencing good fortune. Conversely, people experiencing extreme misfortune often feel isolated in their misery and feel minimal comfort when hearing about others similarly experiencing misfortune ("misery loves company"). Third, *catatonic schizophrenia disorder* pathologized extreme emotional distress when presented symptoms predominately express depression- motionlessness or stereotyped movements (although it can include periods of intense agitation). People naturally become socially withdrawn when their social interactions cause additional distress. *Loss of volition*, *poverty of speech*, *blunted affect*, and *catatonia* are all natural expressions of slowing painful thinking during extreme hopelessness for a solution. People with severe emotional distress 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. Lastly, *undifferentiated schizophrenia disorder* pathologized intense emotional suffering when presented symptoms did not predominately express paranoia, disorganized thinking or depression.

The new DSM-5 removes the more specific categories of schizophrenia spectrum disorder to reduce reliability problems because the boundaries were indefensible but the parameters remain vague. In contrast, Natural Psychology explains schizophrenia spectrum disorder as a natural expression of painful emotional suffering.

Thinking seeks the strongest associative thought and behavior seeks well-being as a function of unique personal experience; mental distress expresses a painful emotional suffering from distressful life circumstances. "Mental disorders" pathologize naturally painful emotional suffering and coping styles psychiatry deems *antisocial* (non-conforming, non-productive and/or disruptive). Broadly construed, anxiety expresses the painfulness of emotional suffering that is often suppressed with depression. Coping strategies intended to reduce emotional suffering are typically compulsive behaviors (antisocial or counterproductive behaviors strongly associated with emotional well-being from individual experience). Natural Psychology explains popular theories about mental distress with a unified, parsimonious new paradigm of human psychology.

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