



**Symbiotic Psychology: The Synergy Between
Mind, Body, Emotions, and Consciousness**

**Emotions-as-Effect Theory:
The Linguistic Semantics of
Emotional vs. Cognitive
Regulation**

(rev2020-10-23c)

By: Andrew O. Jackson

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Emotional vs. Cognitive Regulation**

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Abstract

“Goddess, sing me the anger, of Achilles, Peleus’ son, that fatal anger that brought countless sorrows on the Greeks and sent many valiant souls of warriors down to Hades, leaving their bodies as spoil for dogs and carrion birds: for thus was the will of Zeus brought to fulfilment” (Homer, 800-700/2009). With these beginning words written almost 3000 years ago, Homer’s *Iliad* linguistically sabotaged hundreds of millions of years of emotional evolution. The civilized arena was staged for aberrant emotion driving destructive behavior.

Achilles’ *anger* brought countless sorrows. Achilles’ *anger* sent many valiant souls to Hades. The emotion anger is causal, that is, anger is the cause of Achilles’ behavior. This erroneous linguistic cognitive construct of the mind continues to this day in all of literature and language and has been an unquestioned foundation of modern evidence-based-therapies. Today, this misconstruction of destructive behavior arising from emotional dysregulation and disorder requires (inaccurately) emotional regulation and control.

Emotions-as-effect theory reconstructs the evolutionary bases of good- and bad-feeling emotions as the perception, by consciousness, of a biochemical physiology within the body and the brain precipitated by an evolved and nurtured cognitive neural circuitry. Emotions, feelings, and moods are perceptions of an internal state of biology *precipitated by cognition*. The causal nature of Homer’s emotions, feelings, and moods is a carefully nurtured neurolinguistic cognitive construct of the mind passed down through the generations.

Contrary to the linguistics of Homer, emotions are not causal, and they are neither destructive nor constructive; rather, they are indicators of the presence of very real destructive and constructive – and causal – cognitive behaviors. The correlations among (1) cognition, (2) a healthy, vital, and robust biochemical physiology of the brain and body, (3) good- and bad-feeling emotions, and (4) consciousness are a result of millions of years of evolutionary survival for the health and well-being of the individual. The question is, how will today’s ever-changing technical and political cultures and societies understand, nurture, and develop these same necessary correlations?

Keywords: cognition; emotion; evolution; emotional regulation; linguistics; well-being

Table of Contents:
Emotions-as-effect Theory: The Linguistic Semantics of Emotional
vs. Cognitive Regulation

Abstract:.....	v
Letter: Burnt-Hand Disease/Depression as a Verb	11
Letter: Improving evidence-based-therapies	13
Letter: Emotions-as-Effect Theory	15
Emotions-as-Effect:	19
Emotions-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation	21
Synopsis	23
Definition Notes.....	24
Background: Emotions as Causal to Biological Change	26
Emotions in Science, Literature, and Religion	27
Defining Emotions as Effect Only	28
Dashboard Analogy	29
Defining Cognition as Cause	30
The Cognitive-Emotional Process Flow Chart (Figure 1).....	31
The Illusion of Emotions as Aberrant and Destructive.....	32
The Evolutionary Significance of Emotionally “Feeling Good” or “Feeling Bad”	34
Cognitive Imagination and Evolution.....	36
Cognitive Regulation through Emotional Awareness	37
Hot Stove Analogy and Depression’s Signature Physiology	38
The Evolution of Antisocial Personality Disorder.....	39
Managing Illness, Disease, and Infection with the Aid of Emotional Awareness	40
Conclusion	41
Research Questions.....	44
References.....	49
Revisions.....	55

Rather than demonizing emotions as aberrant, destructive, out-of-control and in need of regulation because of an emotional disorder, Emotions-as-Effect Theory understands emotions as an evolved sensory system, akin to the sense of pain, giving conscious feedback of a state of biochemical physiology. Cognition, not emotions precipitate the biochemical physiology of the brain and body that drives behavior. Emotions, instead of being regulated by cognitive behavior, are used to guide cognitive behavior for the health, well-being, and prosperity of the individual.

Burnt-Hand Disease/Depression as a Verb Letter

Subjects:

1. Burnt-hand disease.
2. Depression as a verb.
3. Cognitive-Emotional health education in primary and secondary schools.
4. The time has come for psychological scientists to revise their text books.

Date: 2020-10-21

Dear Academia,

A hand will normally not rest on a hot stove. Evolution has built up a biological sensory and reflexive mechanism that pulls the hand off the stove to prevent harm. If for some reason the hand remains on the hot stove long enough to burn, a biochemical assessment of the skin will give a definitive analysis comparable to any other hand that suffered the same fate. But science does not declare the existence of a “burnt-hand” disease or illness unless they want to know why a person would keep their hand on a hot stove. Because the sense of pain is basic to the feedback mechanism that normally and naturally removes the hand from the stove, pain caused by the “burnt-hand” illness should be managed, controlled, or regulated – with medications if necessary – *only as a temporally measure while the body heals and rehabilitates from the injury*; and, apparently, the person may need an education on the significance of physical pain. (Jackson, A.O., 2020. *Cognitive-Emotional Wisdom, Education, and Training: A Primary and Secondary School Overview*. Symbiotic Psychology Press)

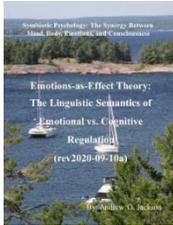
Depression is analogous to the burnt-hand disease where the issue is not the common biochemical signature within a neuroplastic brain, but why does a person ignore their feeling-bad emotional perceptions and keep their mind, or more specifically, their cognitive activities of knowing and awareness upon a hot stove? Why isn’t psychological science focusing on rehabilitating, and psychological education on training and developing a student’s skills and abilities to honor their evolved sensory feedback mechanisms of emotion? Emotion does not change the biochemistry of the mind and body that causes emotion as current psychological theory states; does that even make logical sense? Cognitive activities of awareness and knowing activates the neurology that precipitates the physiology of the brain and body a person perceives as emotions. (Jackson, A.O., 2020. *Emotions-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation*. Symbiotic Psychology Press)

Emotion has an evolved meaning and significance. Emotion should also be understood as a verb. Feeling an emotion means a person is doing, is taking action, and unlike the reflexive action from the pain on the hot stove, emotional pain allows time and space for analysis, understanding, and comparison to cognitive activities that feel good. This interplay between emotionally positive feeling cognitive activities and emotionally negative cognitive activities lays the foundation for individual, cultural, and societal regeneration and rebirth...the creation of

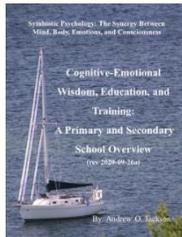
Cognition Precipitates the Biology that Consciousness Perceives as Emotions

something new; “I am emotionally aware of what I don’t want. Now what is it that I do want and desire? What action, mental or physical, can I take ...now ...today tomorrow... that will lead me on my emotionally positive journey?” Happiness as a verb.

The following analysis, arguments, and discussions along these lines can be freely downloaded as a PDF from <https://emotional-evolution.com/>:



1. *Emotions-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation*. Symbiotic Psychology Press.



2. *Cognitive-Emotional Wisdom, Education, and Training: A Primary and Secondary School Overview*. Symbiotic Psychology Press.

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The greatness of the human life experience emerges from the flames of individual desire arising out of hell’s fiery conflicts on earth. Intention is forged in these fires. An evolved emotional biofeedback system aligns our journey with these new intentions. Each succeeding generation will have its own mountains to climb and waters to cross with their own stars to navigate towards. Intent is that guiding star; and it is our emotions that perceive its light. The more joyous the feeling, the more harmonious and powerful the wonders revealed through life’s journey.

Improving Evidence-Based-Therapies Letter**Subjects:**

- 1) Improving the efficacy of evidence-based-therapies by diagramming their cognitive-emotional process flow.
- 2) Improving the efficacy of evidence-based-therapies with an indigenous cognitive/emotional awareness, evaluation, re-processing, and awareness cycle.

Date: 2020-10-09

Not until the illusion of emotions is understood, will the power of emotions be revealed and the efficacy of evidence-based-therapies be realized.

Dear Parents, Students, Educators, and Academics,

The very first sentence in Homer's *Iliad* laid the erroneous emotional linguistic foundation of today's evidence-based-therapies:

“Goddess, sing me the anger, of Achilles, Peleus’ son, that fatal anger that brought countless sorrows on the Greeks and sent many valiant souls of warriors down to Hades, leaving their bodies as spoil for dogs and carrion birds: for thus was the will of Zeus brought to fulfilment” (Homer, 800-700/2009).

Achilles’ *anger* brought countless sorrows. Achilles’ *anger* sent many valiant souls to Hades. The emotion anger is causal, that is, anger is the cause of Achilles’ behavior. This erroneous linguistic cognitive construct of the mind continues to this day in all of literature and language and has been an unquestioned foundation of modern evidence-based-therapies such as:

1. cognitive behavior therapy (CBT) (Beck, 2011)
2. mindfulness (Farb, et al., 2014)
3. mindfulness-based cognitive therapy for depression (Segal, et al, 2018)
4. eye movement desensitization and reprocessing (EMDR) (Shapiro, 2018),
5. forgiveness therapy (Enright, & Fitzgibbons, 2015)
6. positive psychology (Lopez & Snyder, 2009)
7. emotional intelligence (EI) (Salovey, et al., 2004)
8. interpersonal psychotherapy (Stulberg, et al., 2018)

All of these therapies use a definition of cognition which addresses the processes of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imagining, and problem solving (APA, 2020), where understanding and comprehension can project future consequences and events. And, all of these therapies re-processes these cognitive activities (Gross, 2014) to help a person attain a better emotional feeling place (James, 1890; Prinz, 2004) in their lives.

But, is emotion really causal to the physiological changes in the brain and body that drives behavior and is then perceived as *emotions*? (Does that make sense?) Then... should emotions be regulated, controlled, or managed, even with the use of pharmaceuticals (Gross, 2014)? Is there an actual emotional disorder (Barlow, 2014; Maletic & Raison, 2017)? When changes in physiology are integrated into psychology's cognitive-emotion process flow diagrams, all of these questions must be re-addressed by science, language/literature, philosophy, and religion because *emotion doesn't change the physiology that is perceived as emotions, cognition does* (Jackson, 2020).

The following abstract and cognitive-emotion process flow diagram break up the circular reasoning of the typical ABC cognitive-emotional model (Segal, 2018) and includes research in modern biochemical and neurological physiology of the brain and body and the necessary and logical impact of evolution. A more complete discussion, *Emotion-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation*, along with a discussion of the future of modern psychology, *Cognitive-Emotional Wisdom, Education, and Training: A Primary and Secondary School Overview*, can be freely downloaded as a PDF from <https://emotional-evolution.com/>.

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PS: Would you be willing to self-edit your psychological texts (and your secular and religious literature) with the scientific awareness that because cognition, and not emotion, changes the brain's and body's physiology that drives behavior, it is cognition, and not emotion, that must be controlled, managed, or regulated? Although emotions have evolved as a sensory biofeedback mechanism to guide these cognitive management and re-processing activities, allowing cognition to be manipulated without emotional guidance may serve as entertainment and/or have educational and artistic value.

Well-being and the success of any professional therapy, mental or physical, is not defined by the absence of illness but by the presence of health, vigor, and joy along with the necessary cognitive skills, abilities, and motivation to nurture these conditions by employing one's own emotional bio-feedback mechanism.

Success in Education Letter

“Even as the history of our discipline is implicated in systemic racism, such modes of inquiry remind us of literature’s capacities for critique, resistance, and transformation. We resolve to pursue those capacities across all areas of literary study.” J. Brantley, English Chair, Yale University.

Subjects:

- 1) Success in education has to be more than cognitive achievement.
- 2) The linguistic semantics of emotion in our culture and heritage is not the semantics of emotion derived from evolution.
- 3) *Emotions-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation*
- 4) *Cognitive-Emotional Wisdom, Education, and Training: K-12 Overview*

Date: 2020-09-16

Dear Parents, Students, Educators, and Academics,

How long will the academic institutions of education, language, linguistics, literature, psychology, and philosophy ignore science and reason and continue the instruction, edification, and liability of an erroneous cognitive/emotional dynamic regulatory language based in a 3000-year-old literary and religious linguistics (Jackson, 2020) when there are yearly, nearly 800,000 suicide deaths worldwide (W.H.O., 2019), millions of other people are being put through a child-to-prison pipeline (BBC, 2019) where incarcerating conditions only amplify their psychological injuries, and indiscriminate “random” shootings continue with no review of the psychological environments that are fostering all of these atrocities and that are oblivious to emotions’ evolutionary design? Lack of personal and academic questioning and review of erroneous psychological and pharmacological emotional dysfunction theory and logic commonly misused in everyday life would only add to the misfortune of these children of a lesser God (Medoff, 1979).

Emotions (James, 1890; Prinz, 2004) have not evolved to be controlled, regulated, or managed by cognition (Gross, 2014) as the linguistics of psychology, religion, and literature suggest (Homer, 800-700/2009), The status-quo of an emotional dysfunction theory that demands emotional regulation and management (even with the use of pharmaceuticals) is like a walk into Plato’s cave (Allegory, 2020). A lifetime of secular, and perhaps religious, learning, using, teaching, and possible research within a belief of emotional driven behavior and decision making has hardwired (neuroplasticity) a reflexive neurocircuitry erroneously devoted to emotional dysfunction theory. For any one person to accept another cognitive/emotional dynamic requires a brutal commitment to science and logic. Outside Plato’s Cave, the foundation of

another paradigm in cognitive-emotional understanding can be found in "*Emotions-as-Effect Theory: The Linguistic Semantics of Emotional vs. Cognitive Regulation*" (Jackson, 2020) (11,000 words).

Rather than demonizing emotions as aberrant, destructive, out-of-control and in need of regulation because of an emotional disorder (Barlow, 2014), emotions-as-effect theory understands emotions as an evolved sensory system, akin to the sense of pain, giving conscious feedback on the state of health of its biology. Cognition precipitates the biochemical physiology in the brain and body that (1) that consciousness perceives as emotions and (2) drives behavior. Emotions, instead of being regulated by cognitive behavior, are used to guide cognitive behavior for an individual's health, well-being, and success in creativity and decision-making.

The success of any educational institution cannot be defined solely by their students' ability to cognitively achieve; success must also be defined by their ability to achieve with the presence of health, vigor, and joy along with the necessary cognitive skills, abilities, and motivation to nurture these learning conditions throughout life. "*Cognitive-Emotional Wisdom, Education, and Training: K-12 Overview*" (37,000 words) defines a very important, but missing, element of our basic education, the wisdom of millions of years of emotional evolution.

Both publications can be freely downloaded from <https://emotional-evolution.com/>.

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Any attempt to understand and affect the internal human environment must be taken with an understanding of the changing biochemical/physiological conditions of that environment as indicated by an evolved emotional neurocircuitry of the human body.

Neuroplasticity

The neural networks that supported a reality and the cause of violent behavior yesterday, those same neural networks have the physical plasticity to change today and to no longer have the capacity to support that violent reality and behavior tomorrow.

Emotions-as-Effect Theory

Emotions and feelings are felt. Good and bad feeling emotions (and feelings) are the perception, by consciousness, of a biochemical physiology within the body and the brain precipitated by an evolved and nurtured cognitive neural circuitry. Because emotions and feelings are perceptions of an internal state of biology precipitated by cognition, emotions and feelings are a reflection of, and give insights into, the nature of this cognitive behavior. Also, because emotions and feelings are not causal, emotions and feelings are neither destructive nor constructive but rather they are indicators towards the presence of very real destructive and constructive – and causal – cognitive behaviors. Correlations between cognition, healthy biochemical physiology, and good feeling emotions and feelings are a result of millions of years of evolutionary survival for the health and well-being of the individual – as are the correlations between bad feeling emotions and feelings and an unhealthy biology. Now the question is, how are these correlations between cognition, biology, emotions and feelings, and consciousness understood, nurtured, and developed within a society for an individual’s health, wealth, and general well-being through their own successful decision-making and creativity?

Emotions-as-effect Theory:***The Linguistic Semantics of Emotional vs. Cognitive Regulation***

Have English-speaking researchers' core beliefs of emotions – which may have been neurolinguistically molded from childhood (Kemmerer, 2015) through family interactions and in later years through reading literary works such as Dickens' *Great Expectations*, Poe's *The Raven*, and Austen's *Pride and Prejudice* – impacted their current understanding and scientific research about emotions and cognition (Tomasello, 2005)? A shared cultural and linguistic development (Bavin, 2012; Allen, 2019) of core beliefs and conceptual understandings about emotions is required for young students to comprehend and follow the emotional twists and turns within these popular English literary works. As students mature and are introduced to the more advanced works of William Shakespeare and others, comprehension is even more dependent upon prior assimilation of cultural and linguistic paradigms (Evans, 2017; Kenrick, et al., 2015). Conceptions of emotions are further reinforced by the logic and reason applied in today's scientific literature, research, and discussions about emotions (Ekman & Davidson, 1994).

The term “emotion” is a misleading linguistic cognitive construct of a civilized, literary, and religious humanity (Bavin, 2012; Noss & Grangaard, 2008) that has caused psychological theory to ignore the dynamic relationship between cognition and emotion within the context of emotion's evolutionary function to modulate cognitive re-processing activities. Professor Randolph M. Nesse writes in *Good Reasons for Bad Feelings: Insights from the Frontier of Evolutionary Psychiatry* (2019. New York, NY: Allan Lane), “Why did natural selection leave

us so vulnerable to so many mental disorders?” The short answer is that evolution didn’t; civilized man did.

When the neurolinguistic cognitive construct of emotions (Friederici, 2012; Ingram, 2007) used in religion and literature was created and included both (1) the causal cognitive activities of emotion that change the brain and body’s neurology and biochemical physiology (Maletic & Raison, 2017) and (2) the perceived effect of these same biological changes (Davidson & Begley, 2012; Smith, 2016; Pessoa, 2013), mankind usurped emotions’ evolutionary function. Instead of emotions’ natural evolutionary and symbiotic function of providing necessary regulatory feedback on cognitive activities, emotions became aberrant, destructive, and untrustworthy because they were falsely bestowed the quality of causality to biological changes (Goleman, 2003; Gorwood, et al., 2008; Gross, 2014).

Is it possible to think of emotions as separate from the evolutionary process of the human species? If emotions have been run through the evolutionary mill, i.e., not separate from the evolutionary process, what would some characteristics of the resultant design be? Is it possible to use the ideas and concepts found within evolution to form logical deductions and conclusions about emotions and feelings as they pertain to biological functions? (Brune, 2016; Nesse, 2019; Shackelford & Zeigler-Hill, 2017)

The notion that species develop by naturally selecting attributes that are advantageous for survival is the cornerstone of the theory of evolution (Darwin, 1859; LeDoux, 2019). If any human is to live or even thrive to maturity and have offspring who will continue the survival of the species, might there be an evolved link or correlation between an individual’s (1) emotions and (2) cognitive activities and the (3) body’s physiology?

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

If I may, I would like to offer a reinterpretation of the evolved emotional behaviors in need of emotional regulation. The bottom line is that with the exception of disease, illness, and infection, the neurological and biochemical physiological signatures of “emotional disorders” (Brune, 2008; Maletic & Raison, 2017) are evolutionarily supposed to exist as such when cognitive behavior is ignoring the governance of emotional, feeling, and mood feedback.

Synopsis

- 1) Literature and religion, for thousands of years have used emotion as (1) causal to neurological and biological changes of the brain and body that drive a character’s behavior and (2) the perceived effect of the same changes of the brain and body that a character feels and perceives. The mind has neurolinguistically created a cognitive construct that defines emotions as both (1) causal to neurological and biological change within the brain and body and (2) the perceived effect of this same neurological and biological change. This confusion may be acceptable in the literature and religion, but it is not appropriate for evolutionary biology and linguistic science, which must reconstruct an appropriate definition.
- 2) Emotions-as-effect theory uses the principles of evolution to understand and to define emotions as the good- and bad-feeling perception of neurological and biological changes within the brain and body precipitated by cognitive activities stimulating an “emotional” neurology. This “emotional neurology” is not emotions but rather the neurology that activates the changes in neurological and biochemical physiology of the brain and body that are then perceived as emotions.

- 3) Evidence-based practices such cognitive behavior therapy (CBT) (Beck, 2011), mindfulness (Farb, et al., 2014), mindfulness-based cognitive therapy for depression (Segal, et al, 2018), eye movement desensitization and reprocessing (EMDR) (Shapiro, 2018), forgiveness therapy (Enright, & Fitzgibbons, 2015), positive psychology (Lopez & Snyder, 2009), emotional intelligence (EI) (Salovey, et al., 2004), and interpersonal psychotherapy (Stulberg, et al., 2018) are all founded on the notion of changing cognitive activities. Cognitive activities are ultimately evaluated by the existence of good- or bad-feeling emotions. This is the use of emotions-as-effect theory.
- 4) Recognizing emotions-as-effect theory within modern evidence-based practices will improve their efficacy because emotions can be re-entrusted with their evolutionary role.
- 5) Evolution has orchestrated, biologically speaking, a morality in which what feels good is good and what feels bad is bad. Now, humanity must nurture new algorithms that pivot emotionally negative cognitive activities onto emotionally positive cognitive activities that reflect a healthy biology and compassion and respect for the self and others.

Definition Notes

- 1) “Cognition” addresses the processes of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imagining, and problem solving (APA, 2020), where understanding and comprehension can project future consequences and events.
- 2) “Emotional valance” is not used because in the definition, “...the value associated with a stimulus as expressed on a continuum from pleasant to unpleasant or from attractive to aversive...” (APA, 2020), “stimulus” lacks definition and typically refers to an exterior

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

environmental factor/event and not to the cognitive activities within the individual's mind.

- 3) The “somatosensory system” is “the parts of the nervous system that serve perception of touch, vibration, pain and temperature” (APA, 2020) and does not incorporate the perception of emotional feelings within the brain and body.
- 4) The relationships between emotions and emotional valence, arousal, and behavior cannot be discussed or understood until a scientific understanding of emotions as an effect of neurological and biological changes in the brain and body precipitated by causal cognitive activities is achieved.
- 5) “Neurolinguistic cognitive construct” suggests that a word and its defining cognitive construct – such as emotion, with its properties of (1) causality to biological change and the (2) effect of the same biological change – have been so woven into the fabric of the mind that this cognitive construct is a neurological aspect of the brain (APA, 2020; Costandi, 2016).
- 6) James Gross's process model of emotional regulation defines five steps towards emotional generation, where each step is a “potential target for regulation”: situation selection, situation modification, attentional deployment, cognitive change, and response modification (Gross, 2014). Emotions-as-effect theory uses these steps as potential targets for “re-processing” cognitive activities to generate new biological conditions and states that are then perceived as new emotions.

Background: Emotions as Causal to Biological Change

Professor Antonio Damasio sets up the modern psychological theory of emotions at the beginning of his book, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (Damasio, 1999). Paraphrased, he has (1st) “emotions induced in the brain”, (2nd) “consequent bodily changes” and (3rd) “feeling could become *known* to the organism having the emotion.” He defines emotions as causal to the biological changes that a person then feels as emotions; that is, emotions are both cause and effect.

James Gross illustrates in his modal model of emotional generation that emotions are a “response” to the cognitive activities of attention to and appraisal of a situation, “e.g., a snake slithering into my tent”. When such moments lead to emotions that are of the wrong type, intensity, or duration for a given situation, we may try to regulate our emotions (paraphrased). “This fundamental insight – that emotions can and should be regulated in certain situations – is well represented over the centuries...” (Gross, 2014)

“Response” is further broken down into its own “experiential, behavioral, and neurobiological response systems” without a clear cause/effect relationship between the experiential, behavioral, and neurobiological systems. However, the linguistics of the very title of his article, “Emotional Regulation: Conceptual and Empirical Foundations”, suggests that emotions are to be regulated because of emotions’ traditionally perceived and inherent quality to be aberrant, destructive, out-of-control, and causal to aggressive and destructive behavior.

The same lack of clarity arises within the all-encompassing cause/effect order within the “environment” of “thoughts, physical reactions, moods, and behaviors” as written in *Mind over Mood* (Greenberger & Padesky, 2016). This lack of a distinct cause/effect order lies in part in – or maybe because of – the commonly accepted cause/effect relationship as illustrated in

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

Cognitive Behavior Therapy: Basics and Beyond (Beck, 2011), where emotion is characterized as causal to the physiological response.

Emotions in Science, Literature, and Religion

Emotions are perceived in science (Davidson & Begley, 2012) literature (Homer, 800-700/2009) and religion (Goleman, 2003) as potentially aberrant and destructive and in need of management and control even with the use of pharmaceuticals, because emotions are understood and defined as causal to neurological and biological changes that can have a great effect on driving behavior (Barlow, 2014). The mind neurolinguistically combines (1) the cognitive activities of awareness, (2) the changes in the body/brain's neurology and biology, (3) the feelings and perceptions of these same changes in the body/brain's neurology and biology, and (4) the outward behavior into (5) one cognitive construct called emotions (Tomasello, 2005). Within religion and literature, this confusion only adds to the color and mystery of their dissertations, but within science, this muddle is unacceptable.

If emotions are causal to neurological and biological changes in the body and brain, then what term does a professor of psychological science use when discussing the good- and bad-feeling effects of these same neurological and biological changes that a person feels and perceives? The overwhelmingly commonly used and neurolinguistically programmed terminology is emotions.

But then what of the perceived causal nature of emotions? Is it reasonable for psychology as a science to use the same terminology as both causal to biological change and the effect of this same biological change? This is not science. One word, emotions cannot be defined as both the

cause of neurological and biological change and the perceptual awareness of the same neurological and biological change.

Defining Emotion as Effect Only

Here is the problem with these commonly accepted linguistic constructs. A person cannot have an emotional reaction to a snake unless there are first the cognitive activities of perceiving a snake, understanding that it is a snake, and realizing that the snake can be harmful. Only after these cognitive activities actuate the emotional neurology of the amygdala, hippocampus, hypothalamus and other brain physiology can there be biological changes in the brain and body that are emotionally perceived (Davidson & Begley, 2012; Fox, 2008). Yes, there is an emotional response (Gross, 2014), but this response is an awareness of the neurological and physiological changes generated by cognitive activities. The emotional response is not causal to the biological changes that drive behavior. Cognition is causal to the biological changes that drive behavior (reference figure 1 on the following page). Emotional awareness is like a diacritic mark adding emphasis, meaning, and understanding to one's cognitive activities.

A snake can also be causal to a reflexive action (Panksepp, 1994). However, even here, the reflexive action cannot occur until there is first the cognitive perception – or cognitive imagination – of the snake.

Can science retain the definition of emotions as the perceived effect of neurological and biological changes in the brain and body that consciousness feels or perceives and not define emotions as causal to these same changes in neurology and biology? This runs counter to thousands of years of neurolinguistic programming of a cognitive construct that says emotions

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

are causal to neurological and biological changes that drive behavior (Homer, 800-700/2009). Scientific emotional terminology (Ekman & Davidson, 1994) cannot be used as both the cause of neurological and biological changes and the perceived result (i.e., the effect) of these same neurological and biological changes. If emotions are not defined as causal, then what reasonable terminology can be used?

Neurological and biological changes of the brain and body that are felt emotionally cannot occur until the cognitive neurological processes of the brain are actualized. That is, there cannot be an emotional reaction to a person being mutilated in a car accident until the event is – consciously or unconsciously – cognitively perceived, conceived, and understood. The cognitive processing of an event activates an “emotional” neurological network that precipitates any of a number of different combinations of neurological and biological changes that may then – depending upon one’s emotional acuity – be perceived by consciousness as a variety of good- and bad-feeling emotions. As such, emotions are the perception of neurological and biological changes precipitated by cognition (reference Figure 1).

Dashboard Analogy

Emotions are similar to the “check engine” light on the dash of a car. The light signifies problems within the mechanical “physiology” of the engine. The light is not the cause of the problem. The light is not aberrant or destructive but has mechanically “evolved” to bring to conscious awareness any potential problems within the engine. If these mechanical problems are left unresolved, they will lead to mechanical breakdown and failure – like what is observed in the biology of depression and anxiety that leads to suicide.

The “check engine” light on the dash of a car is not causal but an effect. The issue is within the engine, not the light. The light is the messenger informing the operator – if remedial action is not taken – of potential engine damage because of existing physical conditions. The light is not destructive and does not need control, management, or regulation. The light provides an invaluable service for the health and well-being of the engine. To ignore the light or to take action upon the light – that is, to control, manage, or regulate the light itself – would be detrimental to the survival of the engine.

Defining Cognition as Cause

The neurological network that activates neurological and biological changes within the brain and body and that is emotionally perceived is referred to as the “emotional brain” or emotional neurology (LeDoux, 1996). This emotional neurology is not the perception of emotions but identifies the neurology – such as the amygdala, hippocampus, and hypothalamus – involved in actuating neurological and biological changes in the brain and body that are then perceived as emotions. As it is the (1) cognitive acts of the perception, conception, and comprehension of, for instance, a mutilated person in a car accident that (2) initiate activity within the “emotional” neurology that (3) precipitates changes within the brain and body that (4) are perceived as emotions, (1) cognition can be defined as causal and (4) emotions are the perceived effect (reference Figure 1).

These definitions differ from today’s contemporary academic psychology, where emotions are defined as both causal to and the effect of neurological and biological changes within the brain and body. In emotions-as-effect theory, emotions are defined as the good- and bad-feeling perceptual awareness of these same neurological and biological changes that are

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

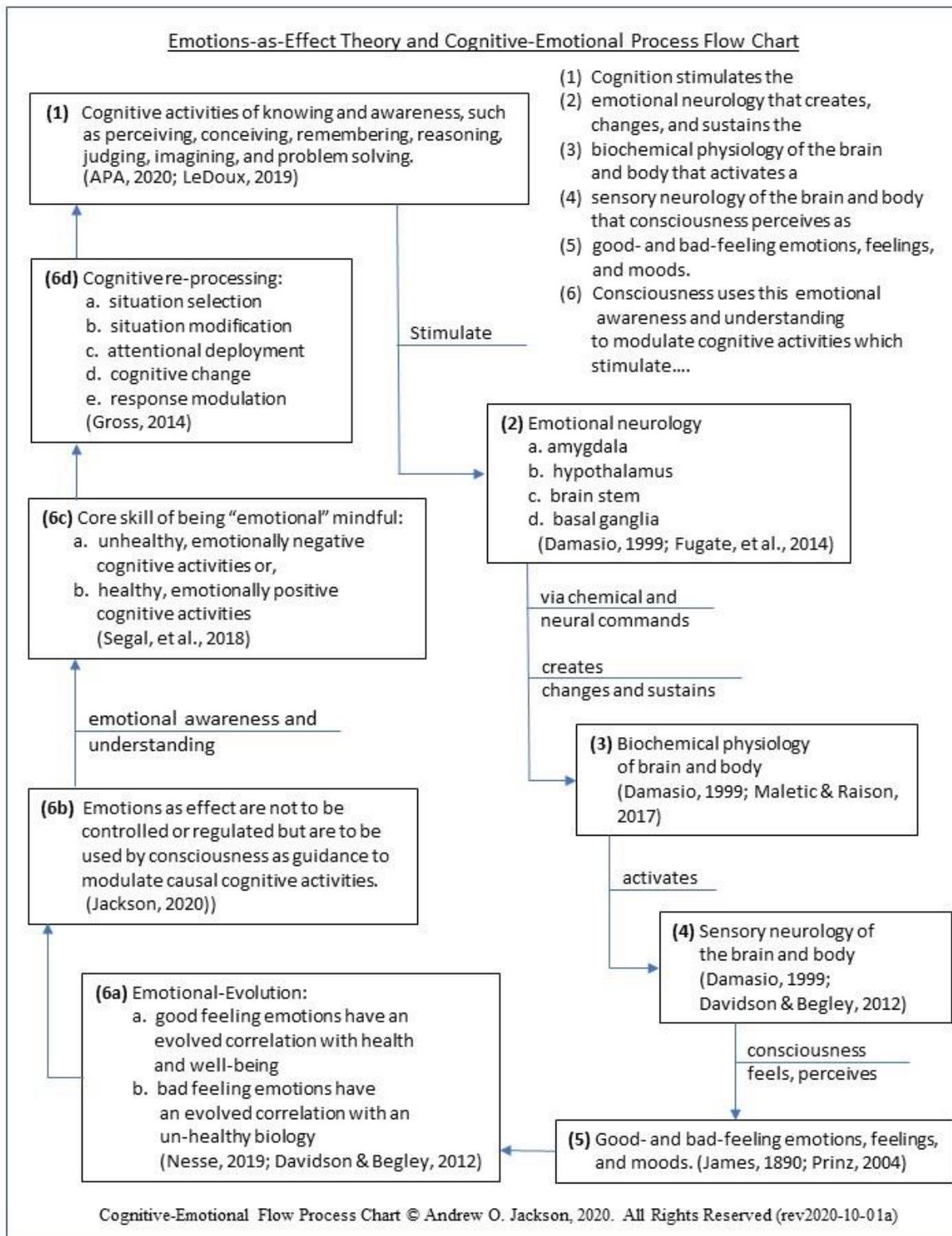


Figure 1 Cognitive-Emotional Process Flow Chart

precipitated by cognition. This is not a 3000-year-old neurolinguistic emotional construct as used in religion (Noss & Grangaard, 2008) and literature such as Homer's Iliad (Homer, 800-700/2009). This is science. A person driven by anger, jealousy, or greed may be emotionally driven in a movie or book, but in science, these neurologically and biologically induced states would be a product of cognitive activities. The significance of teaching a scientific definition and understanding of emotions – separate from the literary and religious conceptualization – in our educational institutions cannot be overestimated.

A person is not emotionally out of control but cognitively out of control. A person is not suffering from depression because of an emotional disorder and in need of emotional regulation but rather is suffering because of science's linguistic confusion of how emotions have evolved to guide cognitive activities. He/she has a cognitive disorder and is in need of cognitive rehabilitation to develop the abilities and skills necessary to self-manipulate his/her own cognitive activities. (Note: illness and disease that affect emotional biology is another discussion.) Emotions are the good- and bad-feeling perception of neurological and biological changes precipitated by cognition. Cognition initiates or is causal to the changes in neurology and biology that are then perceived as good – or bad – feeling emotions. As such, emotions may be used as a natural emotional bio-feedback mechanism and may aid in guiding the individual away from aberrant and destructive cognitive behavior and towards behavior that promotes personal health, wealth, and well-being.

The Illusion of Emotions as Aberrant and Destructive

Because the cognitive construct of emotions has been neurolinguistically programmed to include (a) the cognitive activities associated with biological changes, (b) these same biological

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

changes that drive behavior, and (c) the perception of these same biological changes, emotions can be deemed aberrant and destructive. However, an emotional reaction to a person being mutilated in a car accident cannot even be had unless the cognitive perception, conception, and comprehension of the event are first actualized. That is, there cannot be an emotional effect to a yet-to-exist causal cognitive awareness and processing of that event.

Because cognition is causal to activating the emotional neurology that precipitates biological changes that consciousness perceives and conceives as emotion, cognition can be aberrant and destructive, but emotions cannot. Emotions are an effect. Cognition is the cause. Emotions, from a scientific point of view – not from the literary or the religious paradigm we have learned from birth – cannot be destructive or aberrant because they are not causal. Emotions as perceived by consciousness do affect cognition and therefore do influence biology, but this perceptual awareness of emotions is a *cognitive activity*.

Emotions are the effect of causal cognitive activity. It is cognitive activity that can be destructive and aberrant. Emotions are but a reflection of that activity. Most importantly, emotions can be used to understand, guide, reframe, and refine emotional and biological negative cognitive activity into emotional and biological positive cognitive activity. The vast array and classification of emotional disorders including somatic disorders, dissociative disorders and borderline personality disorder, which can also be conceptualized as disorders of extreme emotional dysregulation (Payne, et al., 2014), further disinherit emotions' evolutionary role in regulating cognitive behavior.

Cognitive therapy for depression that concentrates on identifying and modifying maladaptive “core schemas” is a Socratic questioning style (Young, et al., 2014) that overshadows a very simple, self-directed, self-aware style where the very existence of positive or

negative feeling emotions, feelings, or moods themselves directly signal the existence of maladaptive thoughts and behaviors. The issue is not to “make progress on short-term goals regardless of how the client is feeling,” (Young, et al., 2014) but rather to re-process cognitive activities towards better feeling thoughts and possible behaviors before taking any action. The roots of bipolar disorder (Miklowitz, 2014), schizophrenia and other psychotic disorders (Terrier & Taylor, 2014) can be a complete dissociation from evolutionary emotional regulatory centers of the brain that modulate cognitive activities. Although this is only hypothetical and needs research, the concept itself only becomes viable when understanding and accepting emotions’ evolutionary role in regulating rather than to be regulated.

The Evolutionary Significance of Emotionally “Feeling Good” or “Feeling Bad”

The notion that species develop by naturally selecting attributes that are advantageous for survival is the cornerstone of the theory of evolution (Darwin, 1859). The following scenarios are indicative of evolution’s impact on the development of an emotional directive mechanism if any human is to live or even thrive to maturity with offspring to continue the survival of the species.

- (1) If feeling good correlates with a well-balanced and physiologically vital body, then feeling good while climbing a tree to gather food or while balancing on slippery rocks in a rushing stream to fish may not be hazardous. However, if feeling good were to correlate with a weakened and lethargic physiology/biochemistry, such challenging actions would tend to be deadly. Such a false-positive correlation between emotions and a vital biochemical physiology would be disadvantageous to survival.

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

(2) How would a genetic line survive if feeling good correlated with (1) a cognitive knowing of strength, vigor, and adeptness and (2) an actuality of weakness and ineptitude? Such a correlation has limited survivability when climbing trees or foraging across the savannahs in search of food or, in a modern example, when in an inebriated state, a person confidently gets behind the wheel of a car to navigate through rush hour traffic. Where is the motivation to act when there is an actuality of vitality, vigor and strength, but emotionally, there is a feeling of illness, lethargy and weakness? It is logical to conclude that, evolutionarily speaking, feeling good correlates with vitality, vigor, and strength, and feeling bad correlates with illness, lethargy, and weakness.

(3) Imagine that such basic life behaviors as breathing or eating were so emotionally painful – or the lack thereof were so pleasurable – as to bring about suffocation, starvation and death. Such an emotional/physiological correlation would lead to the demise of an individual and his or her genetic line. Whether this was a genetically predisposed or an inherited condition or whether there even existed a genetically developed predisposition to learn such a behavior, such a false-positive correlation between emotions and physiology would hinder personal and genetic survival. Therefore, there is a natural correlation between feeling good with healthy physiological behavior and the way the body functions.

From an evolutionary perspective, feeling good means there is a positive correlation between the neural networks that activate (1) a cognitive awareness of strength, vigor, and well-being, (2) an actualization of a physiology of strength, vigor and well-being, and (3) the neural networks associated with the emotions of pleasure. The biochemical physiology of the individual, both at the molecular level and the neural network level, must sustain the correlations

among (1) the cognitive knowing of, (2) the actualization of, and (3) the feeling of strength, vigor and well-being and (4) the emotions of feeling good. Simply put, if these correlations did not exist in this way, a person would have a low probability of survival.

Cognitive Imagination and Evolution

How would a genetic line survive (1) if the body's need for water did not stimulate the mind's imagery of obtaining water or (2) if this imagery of obtaining water correlated with negative emotions? If the body needs water, this need must correlate with the mental act of imagining water and with positive emotions associated with finding and drinking water. That is, there is a correlation between imagining the necessities of life and positive emotions. If, instead, there was a correlation such that the imagery of food, water, and shelter brought about negative emotions, then these basics of life would be avoided, leading to an evolutionary dead end. Therefore, for the survival of the species, there must be an evolved correlation between (a) the evolved neural networks of the cognitive brain of imagination and (b) the neural networks of the emotional bio-feedback mechanism such that it (c) feels good when (d) the individual's imagination dwells upon the presence of the food, water, and shelter, which (e) is wanted and desired by the body in order to survive.

A person dwelling upon the presence of that which is wanted triggers a healthy biochemical physiology within the brain and body which activates an emotionally positive neural network. A person dwelling upon the lack of that which is wanted triggers an unhealthy biochemical physiology within the brain and body that activates an emotionally negative neural network.

How would a genetic line survive if the idea of *not* obtaining food, water, and shelter correlated with feeling good? Or, how would a person (and his or her genetic lineage) survive if

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

cognitive imagery dwelt upon that which is not wanted and this mental activity did not correlate with negative emotions? A person dwelling upon that which is not wanted triggers an unhealthy biochemical physiology within the body that activates an emotionally negative neural network perceived by consciousness. There must have been an evolutionary development that resulted in these correlations or we would not have survived as a species.

Cognitive Regulation through Emotional Awareness

Cognition is cause; emotion is effect. Aberrant and destructive cognition *rather than emotions* must be managed and controlled because cognitive behavior precipitates neurological and biological changes within the brain and body that drive behavior. Emotions have evolved to guide cognitive activity for personal health, prosperity, and well-being. Literature and religion may not understand this, but science should.

When factoring in evolution, the emotional perception of biochemical/physiological states of the body becomes an integral part of the brain's neural network to maintain the body's health, strength and vigor. Emotions bring another attribute of awareness to a person's consciousness regarding the nature of his or her cognitive and physical activities. For simplicity, emotions, moods, and feelings can be divided into two areas of awareness: emotions, moods, and feelings that feel good and emotions, moods, and feelings that feel bad.

Because of these evolved mind/body/emotion/consciousness correlations, feeling good or feeling bad has a significant meaning for the biological health of an individual. The perception of positive emotions, moods, and feelings signifies cognitive activities that correlate with a physiology pertaining to strength, vigor, and adeptness. The perception of negative emotions is a

warning signal that the continuation of such cognitive activities will have a negative impact on the physical health and genetic survival of the individual.

The simple arguments above are constructed to illustrate how evolution brings about specific relationships between the mind, body, and emotions and consciousness. Many more complex scenarios can be developed for the variety of relationships people have with their physical and social environments. The moral and ethical debate of a “feels good is good” behavior guide has continued for thousands of years and will continue for thousands more. Ultimately, however, it is an individual’s debate that continues throughout a person’s lifetime of experiences and, hopefully, a lifetime of continual growth and greater understanding.

Hot Stove Analogy and Depression’s Signature Physiology

The physical pain of a hand on a hot stove brings about a very natural reflexive response. The pain is a signal to remove the hand from the stove. The actuation of the body’s natural reflexive response is vital to the maintenance, health, and working order of the hand. If the pain is ignored and the hand remains on the hot stove, the biochemical/physiological signature of the hand changes to the degree that the hand burns. The feeling of pain is significant to the health and survival of the body. The issue of a hand remaining on a hot stove is the lack of responsiveness to the pain. Until there are the beginnings of a reflexive and/or conscious response to the “hand on the hot stove” condition, the hand will not begin to heal.

From the perspective of cognition as causal and emotions as effect theory, the biology of a biochemical/physiological “abnormality” associated with emotional pain (such as depression) is analogous to the biochemical/physiological “abnormality” associated with the hand’s physical pain on a hot stove. The more the emotional pain is (1) ignored, (2) suppressed, (3) usurped, (4)

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

biochemically blocked or sedated, or (5) unacknowledged for any other reason such that the individual's thoughts and the activities of his or her mind remain on the "hot stove," the more the associated biochemical/physiological signature and neurological processes will differ from that of a "normal" healthy person (Draud, et al., 2011). The issue is the lack of responsiveness to the emotional pain, which calls out to get the mind off a potentially damaging mental stream of consciousness. The semantics between emotional regulation and cognitive regulation through emotional awareness is critical.

The *illness* in mental illness arises when healthy conscious – or unconscious – responses to the emotional bio-feedback mechanism are absent and the individual does not have the mental/emotional capacity, agility, or wisdom to respond to their emotional awareness in a natural and healthy manner to get their mind off of the "hot stove." However, is this lack of emotional responsiveness an illness or an injury (Kolk, 2015)? Emotions have a function. Emotions bring an awareness to consciousness of the health, or lack thereof, of cognitive activities. Feeling good correlates with a healthy biochemical physiology, and feeling bad correlates with an unhealthy biochemical physiology (Davidson & Begley, 2012). Psychological and pharmaceutical therapy must honor these functions and work to reestablish normal functioning of an evolved emotional awareness mechanism.

The Evolution of Antisocial Personality Disorder

Because of the brain's neuroplastic nature to develop alternate networks, more advanced mental constructs of wanting and desire can develop as a person matures. The combination of internal physiological behaviors and the external physical exertion for survival also means a more complex development between the biological body and emotions. Movement to gather

food or even to hunt on the African savannahs during humanity's beginnings meant survival. Thus, a correlation between emotional pleasure and physical activity would be evolutionarily advantageous.

Although the joy of the hunt and the pleasure of gathering may produce the food needed for survival, during the heat of the day, continual exertion risks heat exhaustion, dehydration and death. Rather than being a mere pawn of pleasure and pain, the individual must make the decision whether to continue to hunt in such adverse conditions with the survival of oneself and one's family as one possible outcome and the death of the hunter and those dependent on the hunter's survival as another. Alternatively, the hunter's lone survival may become evolutionarily advantageous.

Thus, neuroplasticity of the cognitive and emotional networks involves a complexity that permits cognitive reflection on the conditions for physical exertion and the weighing of conflicting factors of feeling good while getting food versus feeling bad because of the day's heat. The success or failure of these reflections and choices might spawn different genetic lines with different values and behaviors, such as one that emphasizes the survival of the self and another that emphasizes the survival of the family. One genetic line may care about other people; another genetic line may not. Therefore, "antisocial personality disorder" would not be an actual disorder; rather, it would be a natural part of an individual's evolution. Any successful interaction with these individuals – whether individually or as a society – must recognize and respond to their lack of any capacity for compassion, understanding, and kindness except when it pertains to their own well-being and interest.

Managing Illness, Disease, and Infection with the Aid of Emotional Awareness

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

Biochemical abnormalities that are emotionally perceived can have origins other than psychological cognitive activities and instead can be attributed to illness, infections, and diseases. However, by consciously working at feeling good, the body has another evolutionary defense for survival. Feeling emotionally good has an evolved correlation with healthy and vigorous biology. Therefore, to consciously work at feeling good rather than just succumbing to emotionally negative biological activity, evolution has set up another layer of resistance to fight off illnesses, infections, and diseases.

However, modern psychological science attributes the power of causality to emotions. As previously mentioned, emotions cannot be trusted. Emotions can be aberrant and destructive and causal to overly aggressive behavior. If negative emotions are to be managed pharmaceutically because of an emotional disorder, science is again usurping emotions' evolutionary role in maintaining health, vigor, and well-being during a physical illness. By teaching a cultural attitude that dismisses the “emotional” dashboard light of negative emotions and does not recognize the role of negative emotions to inform consciousness that extra effort must be made to maintain an emotionally good-feeling attitude, science is creating a physically weak society. People who have developed the cognitive gymnastics to maintain an attitude and mood of emotionally positive feelings help empower themselves to survive pandemics such as COVID-19.

Conclusion

Within cognitive behavior therapy (CBT) (Beck, 2011), mindfulness (Farb, et al., 2014), mindfulness-based cognitive therapy for depression (Segal, et al, 2018), eye movement desensitization and reprocessing (EMDR) (Shapiro, 2018), forgiveness therapy (Enright, & Fitzgibbons, 2015), positive psychology (Lopez & Snyder, 2009), emotional intelligence (EI)

(Salovey, et al., 2004), and interpersonal psychotherapy (Stulberg, et al., 2018) are the bases of emotions-as-effect theory. These therapies change cognitive behavior to achieve a desired emotional and behavioral outcome. Emotions do change. Behavior does change (Kolk, 2015; Barlow, 2014). However, what is their process schematic that outlines the symbiotic relationship between mind, body, emotions, and consciousness? Where do the positive and negative emotional jigsaw pieces fit? Emotions-as-effect theory and its cognitive-emotional process flow chart provide an answer.

Therapy that acknowledges the evolved symbiosis between cognition and emotions reaffirms an evolved biological awareness mechanism where emotions are used to evaluate cognitive behaviors (see figure 1). In stark contrast to “emotional regulation,” within emotions-as-effect theory emotions are not “regulated” but rather are used instead to regulate, that is, to guide cognitive behaviors. Additionally, in this context, emotions are not viewed as “out of control,” nor is there a concept of “emotional dysregulation” (Barlow, 2014). In contrast, it is the cognitive mind that is “out of control,” and the therapeutic process addresses a “cognitive disorder.” Deviant emotional perceptions are reflections of this aberrant dysregulated cognitive behavior. Emotions are not treated as dysfunctional; rather, they are understood as very functional in that they bring to consciousness the dysfunctional aspect within the mind’s cognitive activities that is creating the aberrant biochemical physiology a person perceives as negative emotions. It is these irregularities in cognitive behavior that need to be addressed. Emotions are but the messenger.

The western world of emotional literature began almost 3,000 years ago with Homer’s *Iliad* and *The Odyssey*. Literary reading and comprehensive education are a must within our modern world as well as understanding emotions’ evolutionary role for the maintenance of an

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

individual's health and well-being. Developing a child's skills and abilities to re-process cognitive activities based upon their emotional feedback should be part of elementary school education. But how do you explain to an elementary school student – in age-appropriate terminology – that “emotional regulation refers to any process an individual uses to influence the onset, offset, magnitude, duration, intensity or quality of one or more aspects of an emotional response (Gross, 2007)” (McRae, et al., 2012) when emotions themselves are not to be regulated but rather are to be used as feedback to regulate cognitive activities?

The mental health and well-being of a society are a function of the mental health and well-being of its individual inhabitants. A culture that is ignorant of emotions' evolutionary role in guiding individual cognitive and physical behavior is subject to all kinds of forces that can mis-direct cognitive activities towards nefarious ends. Continual distortions of the evolved nature of emotions as “emotional disorders” in need of “emotional management and control” by current psychological, psychiatric, and pharmaceutical institutions only further sabotage emotions' guiding influence towards mental health and well-being of a society and its inhabitants.

Until the true nature of emotions is understood, individual emotional behavior will be continually preyed upon by those who wish to control and subjugate individuals for their own selfish intentions, good or bad. Until the true nature of emotions is understood, individual hardships can be preyed upon and tragically assimilated into the ill-begotten intent of those who wish to control and dominate victims for their own selfish needs and desires (Bandler, 2008; Kenrick, et al., 2015). Because feeling-good emotions correlate with health and well-being, nature has created feeling good as good morality. Now it is up to humanity to nurture this morality with the nuances of living in our modern world.

The pain and hardships of life events plant seeds of intent. Whether these seeds nurture or destroy can be influenced by a formal education on emotions' evolutionary role within human behavior. Society's institutions – whether parenting, education, religion, politics, or some other organization – all have a responsibility to empower individuals with an emotional awareness and response that uses negative-feeling cognitive activities and behavior as a springboard to positive-feeling cognitive activities and behavior. Humanity's future resides within the empowerment and understanding of the moral complexities of individual decision-making and following behavior of a “feels good is good” or “feels bad is bad” biologically evolved emotional compass.

Research Questions

1. How would the function of neurological areas of the brain be reinterpreted if the positive and negative valances of emotions, feelings, and moods have evolved to regulate cognitive areas/activities of the brain?
 - a. Is there an inherent adaptive information processing system (Kolk, 2014; Shapiro, 2018) between functional areas of the brain that relates to the positive and negative valances of emotions, feelings, and moods?
 - b. Is there a neuroplastic adaptive information processing system between functional areas of the brain that relates to the positive and negative valances of emotions, feelings, and moods and operates below the level of conscious awareness and feeling of emotions, feelings, and moods (Damasio, 1999, Ledoux, 1994)?
2. Is there an increased effectiveness of established psychological therapies when patients are taught (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior;

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors when participating in movie going, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing skills to regulate cognitive behavior and therapy effectiveness measures and how these re-processing skills will vary for different age groups are to be determined. Established therapies to be included are cognitive behavior therapy (CBT), eye movement desensitization and re-processing (EMDR), forgiveness therapy, mindfulness-based cognitive therapy, positive psychology, and interpersonal psychotherapy.

3. What are the effects of different pharmaceutical medications designed to “regulate emotional behavior” on a patient’s abilities to learn (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation of movies, literature, music, art, performing arts, sports, and other physical and entertainment activities?
 - a. Is there a series of medications with a progressively decreasing physiological impact that allow a patient to more effectively respond to their emotional awareness as they progress in psychological and pharmaceutical therapy and develop the capacity to appropriately respond and regulate their cognitive behavior through associative emotional awareness?
4. Does learning (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited,

cognitive and physical behaviors as a function of entertainment appreciation and participation of movies, literature, music, art, performing arts, sports, and other physical and entertainment activities provide a patient with a sense of self-empowerment and control over the therapeutic process? If so, does this sense of empowerment and healing improve the effectiveness and continued use of therapeutic practices?

5. Although there exists a great amount of literature describing cognitive and emotional activities and the associative neurological areas of the brain, much would be gained by integrating conscious awareness and association or disassociation within the same analysis. How much mood dysfunctional regulation within psychotic mania can be attributed to the lack of conscious awareness and association with depressive functional areas of the brain and vice versa for major depressive disorder? Similarly, how much of the observed body and brain's biochemical and physiological signatures of mental disorders can be attributed to consciousness's lack of understanding and ability to self-regulate cognitive behavior by using emotions, feelings, and moods as feedback mechanisms?
6. Are there significant differences in the effectiveness of cognitive re-processing skills to change cognitive behavior in response to positive and negative valances of emotions, feelings, and moods for individuals with a history of activities within the arts and performing arts of music, dance, and theater versus those without these extracurricular activities?

Note: Identification of different re-processing skills to regulate cognitive behavior, their educational training curriculum, their effectiveness improvement measures, and how to measure the effectiveness of different re-processing skills for different affective states within different age groups are to be determined.

Cognition Precipitates the Biology that Consciousness Perceives as Emotions

7. Is there an improvement in personal physical health and well-being when elementary school students are taught (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation of movies, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing skills to regulate cognitive behavior, physical health, and well-being improvement measures and how these re-processing skills are taught will vary for different age groups are to be determined.
8. Is there an improvement in classroom behavior when students are taught (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation in movies, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing skills to regulate cognitive behavior, classroom behavior improvement measures, and how these re-processing skills are taught will vary for different age groups are to be determined.
9. Is there an improvement in student learning when students are taught (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation in movies, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing

The Linguistic Semantics of Emotional vs. Cognitive Regulation

skills to regulate cognitive behavior, classroom behavior improvement measures, and how these re-processing skills are taught will vary for different age groups are to be determined.

- a. What cognitive-emotional states of being are conducive to (1) inspiration, (2) problem solving, and (3) imagination?
- b. What cognitive-emotional states of being are conducive to memory and recall that would improve students' educational performance?

10. Is there an improvement in individual sports performance and a reduction in sports injuries when athletes are taught: (1) cognitive re-processing skills, (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior, and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation in movies, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing skills to regulate cognitive behavior, performance behavior improvement and reduction in sports' injuries measures, and how these re-processing skills are taught will vary for different age groups are to be determined.

11. Is there an improvement in recidivism when prisoners are taught (1) cognitive re-processing skills; (2) how to use the positive and negative valances of emotions, feelings, and moods as feedback to self-regulate cognitive and physical behavior; and (3) when to allow feelings, emotions, and moods to freely drive, uninhibited, cognitive and physical behaviors as a function of entertainment appreciation and participation in movies, literature, music, art, performing arts, sports, and other physical and entertainment activities? Note: Re-processing skills to regulate cognitive behavior, recidivism improvement measures, and how these re-processing skills are taught will vary for different social groups are to be determined.

References

- Allegory of The Cave. (2020 September 18). In *Wikipedia*.
https://en.wikipedia.org/w/index.php?title=Allegory_of_the_cave&oldid=979100305
- Allen, W.G. (2019). *Me and my feelings: A kids' guide to understanding and expressing themselves*. Rockridge Press.
- APA. (2020). Cognition. In Dictionary.apa.org. <https://dictionary.apa.org/cognition>.
- APA. (2020). Neuroplasticity. In Dictionary.apa.org. <https://dictionary.apa.org/cognition>.
- APA. (2020). Somatosensory System. In Dictionary.apa.org.
<https://dictionary.apa.org/somatosensory-system>.
- Bandler, R., (2008). *Richard Bandler's guide to trance-formation: how to harness the power of hypnosis to ignite effortless and lasting change*. Health Communication, Inc.
- Barlow, D.H. (Ed.). (2014). *Clinical handbook of psychological disorders: A step-by-step treatment manual (5th ed.)*. The Guilford Press.
- Barrett, H.C. (2012). Evolution psychology. In K. Frankish, W. Ramsey (Eds.), *The Cambridge handbook of cognitive science* (pp. 257-274). Cambridge University Press.
- Bavin, E.L. (Ed.). (2012). *The Cambridge handbook of child language*. Cambridge University Press
- Beck, J. (2011). *Cognitive behavior therapy: Basics and beyond*. The Guilford Press.
- Begley, S. (2007) *Train your mind, change your brain*. Ballantine Books.

- Brune, M. (2016) *Textbook of evolutionary psychiatry and psychosomatic medicine: The origins of psychopathology* (2nd Ed.) Oxford, UK: Oxford University Press.
- Costandi, M. (2016) *Neuroplasticity*. The MIT Press
- Dalai Lama, (1999). *Healing anger: The power of patience from a Buddhist perspective*. Snow Lion.
- Damasio, A. (1994). *Descartes' error: Emotion, reason, and the human brain*. Penguin Books
- Damasio, A. (1999). *The Feeling of what happens: Body and emotion in the making of consciousness*. A Harvest Book Harcourt, Inc.
- Darwin, C. (1859). *On the origins of the species by means of natural selection*. In Wilson, E.O. (Ed.), *From so simple a beginning: Darwin's four great books*. W.W. Norton.
- Davidson, R.J., & Begley, S., (2012). *The emotional life of your brain*. Hudson Street Press.
- Doidge, N. (2015). *Brain's way of healing: Remarkable discoveries and recoveries from the frontiers of neuroplasticity*. Viking.
- Draud, J.W., Jain, R., Maletic, V., & Raison, C. (2011). *Treating the whole patient, exploring the healing potential of a mind-body approach to mental health*. Continuing Medical Education.
- Ekman, P., & Davidson, R.J., (1994). *The nature of emotion: Fundamental questions*. Oxford University Press.
- Enright, R.D., & Fitzgibbons, R.P. (2015). *Forgiveness therapy: An empirical guide for resolving anger and restoring hope*. APA.
- Evans, V. (2017). Cognitive Linguistics. In S.E.F. Chipman (Ed.) *the Oxford handbook of cognitive science* (pp 283-299). Oxford University Press.

 Cognition Precipitates the Biology that Consciousness Perceives as Emotions

- Farb, N.A.S., Anderson, A.K., Irving, J.A., & Segal, Z.V. (2014). Mindfulness interventions and emotion regulation. In J. Gross, (Ed.) *The handbook of emotional regulation* (pp 548-567). Guilford Press.
- Fox, E. (2008). *Emotion science*. Palgrave Macmillan.
- Friederici, A.G. (2012). Neurocognition of language development. In Bavin, E.L. (Eds.), *The Cambridge handbook of child language* (pp. 69-87). Cambridge University Press.
- Fugate, J.M.B., Lindquist, K.A., & Barrett, L.F. (2014) Emotion: Generation or Construction? In Ochsner, K.N., Kosslyn, S.M. (Eds.), *The Oxford handbook of cognitive neuroscience vol. 2 the cutting edge* (pp. 32-51). Oxford University Press.
- Goleman, D. (2003). *Destructive emotions: How can we overcome them?* Bandam Books.
- Gorwood, P., Corruble, E., Faliissard, B., & Goodwin, G.M. (2008). *Toxic effects of depression on brain function: Impairment of delayed recall and cumulative length of depressive disorder in large sample of depressed outpatients*. American Journal Psychiatry, 165:731-739. <https://ajp.psychiatryonline.org/doi/full/10.1176/appi.ajp.2008.07040574>
- Greenberger, D., & Padesky, C. (2016). *Mind over mood: Change how you feel by changing the way you think* (2nd ed.). The Guilford Press.
- Gross, J. J. (2014). Emotional regulation: conceptual and empirical foundations. In J.J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–20). The Guilford Press.
- Homer. (2009) *Iliad* (A.S. Kline, Trans.). *Poetry in translation*. (Original work published ca. 800-700 BCE)
- Ingram, J.C.L. (2007). *Neurolinguistics: An introduction to spoken language processing and its disorders*. Cambridge University Press.

- Jackson, A.O. (2020). *Emotions-as-Effect theory: The linguistic semantics of emotional vs. cognitive regulation*. Symbiotic Psychology Press.
- James, W. (1890). *Principles of psychology, vol. 2*. Holt.
- Johnstone, T., & Henrik, W. (2014). The neural basis of emotion dysregulation. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 58–75). The Guilford Press.
- Kemmer, D. (2015). *Cognitive neuroscience of language*. Psychology Press.
- Kenrick, D.T., Neuberg, S.L., & Cialdini, R.B. (2015). *Social psychology: Goals in interaction* (6th ed.). Pearson.
- Knight, B. (2013). *The power of negative thinking*. Houghton, Mifflin, Harcourt.
- Kolk, B. van der (2015). *The body keeps score: Brain, mind, and body in the healing of trauma*. Penguin Books.
- LeDoux, J.E. (1994). Emotional processing, but not emotions, can occur unconsciously. In P. Ekman, & R.J. Davidson (Eds.), *The nature of emotions: Fundamental questions* (pp. 291-292). Oxford University Press.
- LeDoux, J.E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. Simon and Schuster Paperbacks.
- LeDoux, J.E. (2019). *The deep history of ourselves: The four-billion-year story of how we got conscious brains*. Viking.
- Lopez, S.J., & Snyder, C.R. (Eds.), (2009). *The Oxford handbook of positive psychology* (2nd ed.). Oxford University Press.
- Maletic V., & Raison, C. (2017). *The new mind-body science of depression*. W.W. Norton & Company, Inc.

McRae, K., Misra, S., Prasad, A.K., Pereira, S.C., & Gross, J.J. (2012). Bottom-up and top-down emotion generation: Implications for emotion regulation. *Social Cognitive and Affective Neuroscience*, Volume 7, Issue 3, March 2012, Pages 253–262.

<https://doi.org/10.1093/scan/nsq103>

Nesse, R. M. (2019). *Good reasons for bad feelings: Insights from the frontier of evolutionary psychiatry*. Allen Lane.

Noss, D.S., & Grangaard, B.R. (2008). *A history of the world's religions* (12th ed.). Prentice Hall.

Miklowitz, D.J. (2014). Bipolar disorder. In, D.H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.) (pp. 462-501). The Guilford Press.

Panksepp, J. (1994). The basics of basic emotion. In P. Ekman, & R.J. Davidson (Eds.), *The nature of emotions: Fundamental questions* (pp. 20-24). Oxford University Press.

Payne, L.A., Ellard, K.K., Farchione, T.J., Fairholme, C.P., & Barlow, D.P. (2014). Emotional disorders. In, D.H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.) (pp. 237-274). The Guilford Press.

Pessoa, L. (2013). *The cognitive-emotional brain; From interactions to integration*. The MIT Press.

Prinz, J.J. (2004). *Gut reactions: A perceptual theory of emotions*. Oxford University Press.

Prinz, J.J. (2012). Emotion. In K. Frankish, W. Ramsey (Ed.), *The Cambridge Handbook of Cognitive Science* (pp. 193-211). Cambridge University Press.

Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds). (2004). *Emotional intelligence: Key readings on the Mayer and Salovey model*. Dude Publishing.

- Segal, Z., Williams M., & Teasdale, J. (2018). *Mindfulness-Based cognitive therapy for depression* (2nd ed.). The Guilford Press.
- Shackelford, T.K., & Zeigler-Hill, V. (Eds.). (2017). *The evolution of psychopathology*. Springer
- Shapiro, F. (2018). *Eye movement desensitization and reprocessing [EMDR] therapy* (3rd ed.). Guilford Publications.
- Smith, T.W. (2016). *The book of human emotions: From ambiguphobia to umpty – 154 words from around the world for how we feel*. Little, Brown and Company.
- Stulberg, C.G., Frey, R.J., & Dawson, J. (2018). *Feeling better*. New World Library.
- Tarrier, N., & Taylor, R. (2014). Schizophrenia and other psychotic disorders. In, D.H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.) (pp.502-532). The Guilford Press.
- Tomasselo, M. (2005). *Constructing a language: A usage-based theory of language acquisition*. Harvard University Press.
- Tomasello, M. (2012). The usage-based theory of language acquisition. In Bavin, E.L. (Ed.), *The Cambridge handbook of child language* (pp. 69-87). Cambridge University Press.
- Young, J.E., Rygh, J.L., Weinberger, A.D., & Beck, A.T. (2014). Cognitive therapy for depression. In, D.H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.) (pp. 275-331). The Guilford Press.

Revisions

1. 2020-07-01a: Release with editing from AJE.
2. 2020-07-01a – 2020-08-2a: Various cover and internal formatting changes.
3. 2020-08-09a: added Letter to Academics in Psychology, English, and Literature.
4. 2020-08-10a – 2020-06-03a: Various editing of “Dear Academic” letter.
5. 2020-09-08a: added Appendix A: Revisions; added reference.
6. 2020-09-10a: general editing.
7. 2020-09-16a: rewrote introductory letter.
8. 2020-09-19a: Edited Figure 1: Cognitive-Emotional Process Flow Chart
9. 2020-09-24a: Added William James to Cognitive-Emotional Process Flow Chart
10. 2020-09-26a: in Cognitive-Emotional Process Flow Chart, replaced “(emotions-as-effect theory)” with (Jackson, 2020) and added the book to references.
11. 2020-09-29a: corrected reference formatting errors (, &)
12. 2020-10-01a: revised Mindful-Based Cognitive Therapy for Depression to second edition (Segal, 2018).
13. 2020-10-09a: edited typos in references; added improving EBT letter; reordered beginning.
14. 2020-10-11a: separated Abstract into paragraphs.
15. 2020-10-12a: revised “Improving Evidence-Based-Therapies Letter”
16. 2020-10-12b: added post script to “Improving Evidence-Based-Therapies Letter”
17. 2020-10-23a: added “Burnt-Hand Disease/Depression as a Verb” letter.
18. 2020-10-23b: edited Abstract and Synopsis (3)
19. 2020-10-23c: corrected (Segal, et al, 2018) reference typos.

The greatness of the human life experience emerges from the flames of individual desire arising out of hell's fiery conflicts on earth. Intention is forged in these fires. An evolved emotional bio-feedback mechanism aligns our journey with these new intentions. Each succeeding generation will have its own mountains to climb and waters to cross with their own stars to navigate towards. Intent is that guiding star; and it is our emotions that perceive its light. The more joyous the feeling, the more harmonious and powerful the wonders revealed through life's journey.



Andrew O. Jackson suffered from psychotic mania and suicidal depression and was in and out of mental hospitals from 1979-1996. Once after another “blackout” period, he “awoke” in a mental ward and wondered how he got there this time. The nurse said he went up to a police car and told them that his friend needed help. His “friend” was a trash can. Another time he “awoke” with a rope in his hand ready to put an end to this torturous life when a voice asked him, “Can you go on?” “They” wanted him to continue this existence a while longer. He replied, “Yes” and got himself to a hospital.

Around 1992, in a moment of inspiration that has now led to his emotions-as-effect theory, he began a self-directed healing program using his emotions as feedback for his biochemical, neurological, and physiological state of being. After a couple more psychotic episodes – one that landed him in the El Paso county jail and led to a divorce from his first wife – and after seventeen years of therapists, psychologists, and psychiatrists, he no longer needed the benefits of their assistance. He has been medication free and without disassociation, depression, or mania episodes since 1996.

Since 2005, he has been writing to academics around the world advancing a new emotional paradigm that defines cognition as causal to and emotions as an effect of biochemical, neurological, and physiological states of being. Emotions, instead of being regulated by cognitive behavior as current psychological academia prescribes, have evolved to guide cognitive behavior for the health, well-being, and prosperity of the individual.

He has an MS in Technology Education and an MS in Management Technology from the University of Wisconsin – Stout. He was a high school shop teacher, a college CAD (computer aided design) instructor, a guest instructor in China teaching quality and inventory management, and a quality manager at an OEM (original equipment manufacturer). He is now happily married and retired from mechanical engineering, spending his summers sailing and winters alpine skiing.