
The Triunal Model of Anxiety and its Application to Anxiety Reduction in Learning and Teaching Environments

Shoaleh Bigdeli and Heesoon Bai

In this article we are calling for an interlayered and cross-dimensional approach to understanding and working with anxiety, especially as manifested in English as an additional language (EAL) teaching and learning environments. We aim to understand the phenomenon of anxiety from the multidimensional perspectives of physiology, psychology, and philosophy; to introduce what we call the Triunal Model of Understanding Anxiety; and based on this new understanding, to suggest how teacher education may help teachers to notice and work with anxiety in teaching-learning environments. Given the scope of what we propose, this article with its limited space affords only an initial synopsis and model-building exercise.

Dans cet article, nous militons en faveur d'une approche interstratifiée et trans-dimensionnelle pour comprendre et aborder l'anxiété, notamment telle qu'elle se manifeste dans les milieux d'enseignement et d'apprentissage de l'anglais comme langue additionnelle. Nos objectifs sont de comprendre le phénomène de l'anxiété de multiples perspectives : la physiologie, la psychologie et la philosophie ; de présenter ce que nous appelons le modèle à trois parties pour comprendre l'anxiété (Triunal Model of Understanding Anxiety) ; et à partir de ce modèle, d'émettre des propositions sur la façon dont la formation des enseignants pourrait les conscientiser quant à l'anxiété et les aider à l'aborder dans des milieux éducatifs. Compte tenu de l'envergure de ce que nous proposons et des contraintes d'espace, cet article ne présente qu'un sommaire initial et un exercice de construction de modèle.

Introduction

Anxiety is considered a highly pervasive and insidious psychological phenomenon (Hoch & Zubin, 1950), "one of the most important concepts in psychoanalytic theory" (Hall, 1954, p. 61), and "the official emotion of our time" (Schlesinger, 1970, p. 52). Anxiety often seriously and negatively affects learning and teaching. Contemporary schooling vocabulary—including labels such as math anxiety, ESL anxiety, performance anxiety, and test anxiety—amply reveals learning environments saturated with anxiety. Anxiety can interfere with attention control, information processing, memory recall and retention, and inductive reasoning (Ellis, 1990; Hedl, 1986; Gower,

200s). Given the critical role that anxiety can play in negatively affecting learning, it will help teachers in general and teachers of English as an additional language (EAL) in particular to understand the nature of anxiety and know how to assist their students in handling it. We have decided to use the terminology of EAL rather than ESL because the former is more inclusive than the latter. Today for many people English is often a third or even a fourth language.

Historically, anxiety is studied singularly in separate domains, as if who we are could be reduced to one dimension of reality. But we are not just, or even predominantly, neurobiological, psychological, or conceptual beings. We are multidimensional beings, and the phenomenon of anxiety manifests itself inseparably and in all three dimensions (or more) that are themselves further embedded in the larger sociocultural dimension. In this article, we are calling for an inter-layered and cross-dimensional approach to understanding and working with anxiety, especially as manifested in EAL teaching and learning environments. We propose a model for an anxiety reduction approach that integrates research findings from three currently disparate disciplines: physiology, psychology, and philosophy. Our first objective is to promote understanding the phenomenon of anxiety from the above-mentioned multidimensional perspectives and to introduce what we call the Triunal Model of Understanding Anxiety; and the second objective is to suggest, based on this new understanding, how teacher education may help teachers to notice and work with anxiety in learning environments. Given the scope of what we are proposing, this article, with its limited space, affords only an initial synopsis and model-building exercise. We plan to work on a more substantial and detailed treatment of the topic in future publications.

Anxiety as Distress

Like fear and anger, anxiety is an adaptive emotional mechanism, and in this sense it is not categorically negative. *Healthy* anxiety alerts a person to possible challenges and difficulties in matters that are nonspecific, pervasive, and/or inarticulate. In other words, anxiety signals to the experiencer that he or she should not just ignore or relax about certain potentially critical signals—however minute or indeterminate—in the emerging situation or task, but that he or she should prepare to meet and deal with this emotion. For the afflicted individual, knowing this will be the first step toward having a positive understanding of anxiety, thereby preparing himself or herself to work with anxiety rather than wishing to eliminate it. In a learning environment, this understanding will depathologize, hence *normalize*, anxiety and make working with anxiety (as opposed to *getting rid of it*) an integral part of the challenge of learning and teaching. Anxiety holds a rich and valuable learning possibility.

Technically speaking, stress is the nonspecific result of any mental or physical demand on the organism that requires adaptation, and it is divided into *eustress* (good stress) and *distress* (bad stress, Selye, 1980). When stress is adaptive, it is eustress; when it is maladaptive and damaging, it is distress. All adaptive or defense mechanisms are liable to turn into distress. When experienced in appropriate and agentic ways, anxiety is life-promoting, but experienced habitually and relentlessly, it can be a seriously damaging stressor. The current climate of social life, including schooling, runs this risk.

The difference between stress and distress is a matter of degree and approach: how an individual subjectively and phenomenologically perceives and works with stress. The key to reduction and prevention of distress is self-awareness. A person who is intimately aware of what is going on in his or her mind-heart-body environment—we call this the *triunal system*—has the best chance of preventing an instance of initial stress from becoming distress. The person can attend to the initial signal of anxiety, take appropriate action, and not let anxiety proliferate and permeate. This requires the individual's ability to monitor closely his or her internal triunal environment and pick up, interpret, and act on the signals, which suggests that teacher education should promote in teachers and students the attitude and ability to be aware of anxiety signals and work with them. Here we discuss in a preliminary way how to train awareness and also show how such training may be integrated into curriculum and pedagogy. Because anxiety signals are physiologically based, the first step of awareness is body awareness.

The Physiology of Anxiety

The central nervous system regulates the adrenocortical response to stress—the adrenocorticotrophin hormone (ACTH)—which is under the control of the anterior part of the pituitary gland. In addition, the limbic system is concerned with the emotions, the regulation of autonomic and endocrine functions, motivation, and learning (Carlson, 2002; Cohen & Wood, 2000; Kelly, 1980; Marieb, 2001; Silverthorn, 2004), and with the secretion of ACTH (Kelly; Ziada, 2000). The limbic system comprises the hippocampus, thalamus, hypothalamus, amygdala, cingulate cortex, and insula cortex. The orbitofrontal cortex is the other brain structure that plays a crucial role in the emotions and in the stimulation of the hypothalamus and that produces responses to anxiety. In anxiety states, stimulation of the motor cortex and hypothalamus increases activity in the sympathetic nervous system, resulting in an increased heart rate, increased atrioventricular bundle conductivity, and contraction of the heart muscle, which leads to higher blood pressure and muscle blood flow. Most of the harmful effects of stress are due to prolonged secretion of glucocorticoids (Carlson, 2002); anxiety can also produce hyperventilation, shallow breathing, disorganized respiratory rhythms, and breathlessness (Kelly). Understanding these neuro-physiologi-

cal processes and recognizing experientially their bodily symptoms is the first step for individuals to become aware and be ready to work with anxiety. However, supposing that it is physiology that produces anxiety would be to confuse the symptom with the cause. Anxiety has psychological roots, meaning that anxiety is a learned response that has its origin in the experiencing individual's psychology as it operates in a given sociocultural environment.

The Psychology of Anxiety

Unlike Freud, Neo-Freudian scholars during the 1930s-1940s shifted the orientation of psychoanalysis from the biological and instinctual to the cultural and environmental (Sullivan, Horney, Fromm, & Kardiner, as noted by Levitt, 1990). They believed that human personality development was more sociocultural than biological. In their view, people, culture, and the environment were critically important in manifestations of anxiety. Taking our cue from these scholars and others, we call for investigating how individuals' disconnection from various environments such as intrapersonal, interpersonal, material, structural, and ecological may precipitate anxiety. Disconnection results in not having intuitive and embodied understanding and knowledge with respect to the object of disconnection, which triggers anxiety. In this view, then, anxiety is signaling a need to connect. A prime example of disconnection precipitating anxiety in the interpersonal environment is the lack of empathic understanding with respect to others' states of mind. When we are disconnected from another person, empathic resonance, by which we come to know another's actions and feelings, is inoperative. We can see a powerful illustration of this in language-learning environments, as in the case of EAL, where a sense of not being understood is a strong provoker of anxiety. How a learning environment deals with this psychological dimension of recognition and connection in the interpersonal context of student-teacher and student-student relationships can lead to critical differences in how students experience anxiety.

In the following section, we examine how the interpersonal context too is mediated and constructed in the sense that how we experience the world of relationships is mediated through world views and values. The study of world views and values is the domain of philosophy.

Philosophy and Anxiety

Humans as existential beings are emotionally affected by their beliefs and values about the world and the self. In general, beliefs and values that portray human beings and their existential life as atomistic individuals—inherently disconnected from each other, from the earth, and from the larger (spiritual) dimensions of being—set up individuals to have distressing experiences of anxiety, because such individuals may be continually in fear of

abandonment, anomie, and annihilation. Thus examination of individuals' beliefs and values to assess their susceptibility to anxiety—especially in the context of conflict between how the individual expects to see the world and how the local environment expects the individual to function—is important for working with anxiety. In general, world views or philosophies that emphasize the individual's intrinsic connectedness to *All-One* (whether understood as *Allah, God, Universe, Ultimate, Source, Tao, Buddha, Nature, etc.*) are helpful resources that may provide us with perspectives and methods to recalibrate our own beliefs and values. Thus belief and value revision can become a powerful element in anxiety reduction.

We believe that the philosophical approach to anxiety holds great promise for addressing EAL anxiety. In our work the term *philosophy* mainly means the practice of investigating and coming to a realization of how we conceptualize and understand the world and the self. The fruit of philosophy is awareness about how our beliefs and values condition who we are and how we experience the world: what we perceive, think of, interpret, and understand, and how we value something. Beliefs and values are philosophical objects through which we come to understand and value the world in particular ways.

This section is organized in terms of three complementary philosophical perspectives that we believe are illuminating with respect to understanding anxiety: existentialism, phenomenology, and Buddhism. They show that anxiety is intimately connected with our views of what human beings are like and how we value and live our lives. We devote most of the article to this section of the discussion because in terms of the control that individuals have over what is happening to them, it is self-understanding, not the world, over which they have most control. We are not saying that people should not change the world. Rather, the most effective locus of change is self-understanding, through which we come to revise what we are like and how we are situated in life. Through changing our understanding, we change the world.

Existentialism and Anxiety

Existentialism encourages people to face themselves and the crises of life that confront them (Appignanesi, 2006). Existentialism puts the major responsibility for finding meaning and value in life on individual human beings and their capacity to create meaning. Life is not a given, but is a project to be undertaken such as a moral responsibility or even a work of art. All this may be empowering to individuals. Nonetheless, at the same time we can also see how self-responsibility may also precipitate anxiety about survival and self-care.

According to Kierkegaard (Gardiner, 1988), no external object exists for anxiety states: they arise from internal sensations and feelings that a person experiences in his or her life encounters. From this perspective, the anxiety

that is seen in EAL learners may be due to their life experiences to do with their language proficiency. Making a distinction between fear of external objects—for which there is an external counterpart in the external world—and EAL anxiety that arises from EAL learners' beliefs and value systems is an important tool in the hands of EAL educators. It implies that teachers should pay close attention to their students' beliefs, attitudes, and general world views. This would imply a different approach from the usual one of trying to eliminate either the symptoms of anxiety or the apparent object of anxiety.

Anxiety is not an illness that needs to be gotten rid of, because it is part of our existence. Therefore, we need another attitude and approach to anxiety; this is an invaluable message from existentialism. "Existential anxiety is something essential to the self, not something we have but something we are" (Loy, 2000, p. 16). Regardless of the environment and our experiences, anxiety is not a possession or burden that we can set aside for a while. It is part of our existence and part of being in this world. It is interwoven with our mind and body from the time that we come into existence, and it will never leave us until the last moment. Anxiety may be lessened, but it is not normally possible to free human beings from it entirely. Human life would be meaningless without the experience of anxiety because meaning and meaningfulness are about our struggles for and against significant life challenges and overcoming them.

As soon as we become aware of our emotional experience, we can contemplate, explore, explain, and evaluate our emotions. Thus we become reflective and begin to be in control of ourselves. Transforming unreflective emotions into reflective ones changes emotional insecurity into emotional agency. However, because anxiety has the effect of making us reflect, even if painfully and self-consciously, on ourselves, we may see anxiety as having the useful function of transforming unreflective emotions into reflective ones. While experiencing anxiety, we may think about what is troubling us and scaring us and explore its nature and characteristics. As well, we can discuss our concerns and worries with others. When we can do this, we are already stepping outside of what is troubling us, and we are then able to view it from diverse perspectives and gain greater insight and wisdom (Strasser, 1999). Although not all experience of anxiety will lead to this kind of positive outcome, we are postulating that anxiety, if understood more positively, could be approached as a challenge and opportunity and as a psychological tool for greater reflective awareness. Self-awareness is key to dealing with anxiety.

Phenomenology and Anxiety

A phenomenon is the appearance of reality in consciousness (Bell, 1990; Lauer, 1965), and phenomenology is the study of human experience and how

things are perceived by consciousness. Phenomenology is not explanatory, but descriptive (Langdridge, 2007; Loy, 2000); it starts from a description of conscious experience from the subject's or agent's point of view. Its aim is to study experience and how people perceive the world. It understands that perception of the world and how people recognize it differs greatly among individuals and even for one person in other contexts (Langdridge). Also, all that is accessible to our consciousness exists at the phenomenological level, that is, at the level where we feel our experiences and distinguish between them, and everything that we are aware of exists at this level (Lakoff & Johnson, 1999).

Husserl believed that "there is not one single life-world, rather there is a set of intersecting or overlapping worlds, beginning from the world which is closest to us, the 'home world' (*Heimwelt*), and extending to other worlds [... that are] 'foreign' or 'alien worlds' ... and so on" (Moran, 2005, p. 9). Husserl recognized that culture, tradition, common practice, and especially history were crucial factors in determining the everyday life of each community and its life world (Bell, 1990). For EAL learners, many life worlds are in complex interaction. These learners bring their life experiences, culture, traditions, and beliefs from their former home world to an alien host world. Their task is multifaceted; not only do they have to familiarize themselves with the new sociocultural expectations of the host society, but they also need to equip themselves with the necessary tools without which this adaptation cannot take place. As well, they suffer from separation from the support systems that they were used to, which in turn affects not only what they experience, but also how they experience the world. All this increases their anxiety.

The above-mentioned understandings have several implications for the study of anxiety. The phenomenological perspective allows us: (a) to become careful observers of our own anxiety and how it plays out in our consciousness; (b) to become aware of our world views, beliefs, and attitudes, which give rise to our experience of anxiety; (c) to examine anxiety (our own and others') from varied perspectives so as to be able to describe its general features and to uncover its diverse layers; (d) to focus on anxiety as a human experience that needs immediate attention and relief; and (e) to recognize our authoritative role in being able to change ourselves and others' points of view in order to effect a change in how we understand and view ourselves and the world.

We believe that a phenomenological focus on EAL anxiety can help the EAL learner to move from purely personal experience of anxiety to investigation of the underlying structures of consciousness. In other words, a learner who experiences anxiety may turn his or her experience of anxiety into an object of investigation. This notion of phenomenologically studying, investigating, or researching one's own experience brings us to exploring Buddhism.

Buddhism and Anxiety

In this work Buddhism is understood as a psychological study and practice, not a religion or spirituality, that transforms one's understanding of the self and the world. The main vehicle of practice is mindfulness or being aware of what is happening to the individual in the process of becoming. From the perspective of Buddhist philosophy, "mind precedes things, dominates them, creates them" (Nyanaponika, 1969, p. 21). However, mind and body are not considered separate entities: they are interconnected and in continual interaction.

The historical Buddha, Gautama Siddhartha, reduced both body and mind to processes of experience. This focus on experience—leaving behind the usual philosophical questions about how the categorically separate mind and body interact—liberates us from the sophistry of the philosophical body-mind problem and moves us to concentrate our efforts on understanding and working with experience. In other words, by shifting the focus to our internal experience and by understanding the conditioned nature of experience, we may gain control over the normally reactive conditioning that governs our experience. This is how we can become agents of our own change.

Gautama taught that human suffering is due to an ignorant belief that there is an unchanging entity called the self or ego-self that always says, *This is how I am; this is what I am like*. By insisting on its separate and unchanging identity, it alienates itself from the world and brings about difficulty in being receptive and responsive to changes in life and the world. From the perspective of the ego-self, the world can never meet the expectations of the self. It always fails the self's wants and demands, leaving the self always vaguely or acutely discontented and anxious. This is the First Noble Truth that Gautama taught. In this context, Gautama's suggestion to reduce or even nullify what the self expects from the world is tantamount to dissolving the sense of ego-self (Kalupahana, 1987): the sense that makes individuals think and feel definite and fixed about who they are and what they are like. It is this sense of ego-self that makes it difficult to change ourselves so as to meet the challenges of the continually shifting and changing external environment. In other words, it is our sense of ego-self that puts us in conflict with the external world.

In Buddhism the self is a dynamic, ever-changing process, not an independent, self-contained entity. Thus Buddhism denies the sense of duality between self and the world and the consequent sense of existential lack because the self does not measure up to the world or vice versa. Instead of confronting this sense of lack, our usual reaction is to attempt to remove it by reinforcing or fortifying the self and trying to conform the world to the self. Anxiety and discontentment have to do with the fact that we cannot easily overcome this duality. To the ego-self, the world seems stubbornly to refuse

to conform to the self's desires. The world always fails to measure up to the self's demands. Does Buddhism offer practical help? As stated above, we see Buddhism as a psychological practice. Such practice is most commonly known as mindfulness practice.

Mindfulness Practice

Our minds' engagement with the past and preoccupation with the future, which is what anxiety is essentially about, leads to a lack of awareness of here-and-now experience and blocks the flow of energy. Mindfulness or meditation, focusing on the here and now, can release this blocked energy. In the experience of anxiety, people commonly see the worst-case scenario, which is based on their earlier evaluations of their experiences. For example, in EAL anxiety, sufferers do not see their potential, but focus only on their language incompetence. Their conscious mind deals mostly with whichever problem they perceive as crucial. This is where mindfulness comes in. Mindfulness is "seeing through one's perceptual assumptions" (Claxton, 1999, p. 180), and its major feature is the development of attention (Nyanaponika, 1969) and concentration (Claxton, 1990). In this process, the meditator is the observer of his or her succession of thoughts, feelings, and sensations without preference, comment, judgment, or interpretation (Wilber, Engler, & Brown, 1986). Mindfulness is living in the present moment and experiencing one's present life without thinking about past regrets or future anxieties. When we come to practice mindfulness sufficiently, we experience complete acceptance of who we are, where we are, and how we are, regardless of the particular content of experience, including anxiety. At the moment when we can completely accept our experience of anxiety, anxiety loses its debilitating grip. Hence mindfulness practice may be an unparalleled tool to help us get to know our experience of anxiety in the most intimate and substantial way, which is what is required for us to change from within our experience of anxiety. Through the cultivation of mindfulness, one can become one's own counselor and meditator (Claxton, 1999).

People usually think of mindfulness as sitting meditation. However, mindfulness is how we work with our states of consciousness, and it is not limited to any particular activity or body posture. In fact sitting quietly with one's back straight happens to be an effective way to cultivate mindfulness, and so it is highly recommended as a practice, especially for beginners. But the goal of mindfulness practice is to extend this state of mindful awareness to any time and everywhere in whatever we are doing. For this reason, apart from sitting meditation, people may take up such additional practices of mindfulness as mindful walking, mindful eating, or mindful brush painting, to mention just a few examples. The possibilities are unlimited. For example, all rhythmic conscious activities such as swimming or looking at the water tend naturally to encourage mindfulness and therefore are excellent ways to attend mindfully to the perceptual world.

The Triunal Model of Understanding Anxiety

Having outlined each of the three dimensions and some of their details from which we can approach studying and working with anxiety, we now consolidate our discussion in terms of model-building. We call our model the triunal model of understanding anxiety. This model has the virtue of approaching anxiety from more than one dimension, thereby powerfully increasing the effectiveness of anxiety reduction. For example, EAL anxiety could benefit from a multidimensional approach that combines research findings from three currently disparate disciplines: psychology, physiology, and philosophy, all of which should be studied in the context of sociocultural considerations.

In the triunal model of anxiety reduction for learning, the theoretical constructs characteristic of the three disciplines are conceptualized as heart, body, and mind respectively. Positing the thesis that there is no separation among these three, the relationship among them is conceptualized as mutually reflecting mirrors. The experience of embodiment is the result of their interpenetration. Altogether, these domains make an interconnected and interactive system. Any pressure on one part of this interactive parallel processing system will be reflected (mirrored) in other parts. This model is at work in learning situations where students experience anxiety. Because these three domains are interlinked in a nonlinear causal relationship wherein heart, body, and mind simultaneously affect each other, initiating changes in each domain nonlinearly effects changes in another. We postulate that simultaneously initiating positive changes from all domains would result in maximal and optimal effects with respect to EAL anxiety reduction, although we need to insert the proviso that these three domains are not separate from the sociocultural context that grounds them. The first aim of this model is to understand the phenomenon of EAL anxiety from the above-mentioned multidimensional perspectives, and the second is to suggest, based on this new understanding, how teacher education may help teachers to notice and work with EAL anxiety in learning environments (see Figure 1).

Coda

Anxiety is commonly experienced among human beings, and it is part of our humanity. Acknowledging its importance is crucial, especially in teaching and learning. We need to recognize that everything we do or do not do as teachers and learners has an effect on anxiety production in everyone. Moreover, we need to allow and encourage students (and teachers) to work with their anxiety, for which self-awareness training is critical. This also implies not separating, excluding, devaluing, or marginalizing the emotional life, especially negative emotions, in school learning. Students and teachers should be shown how to work with emotions and should be given the

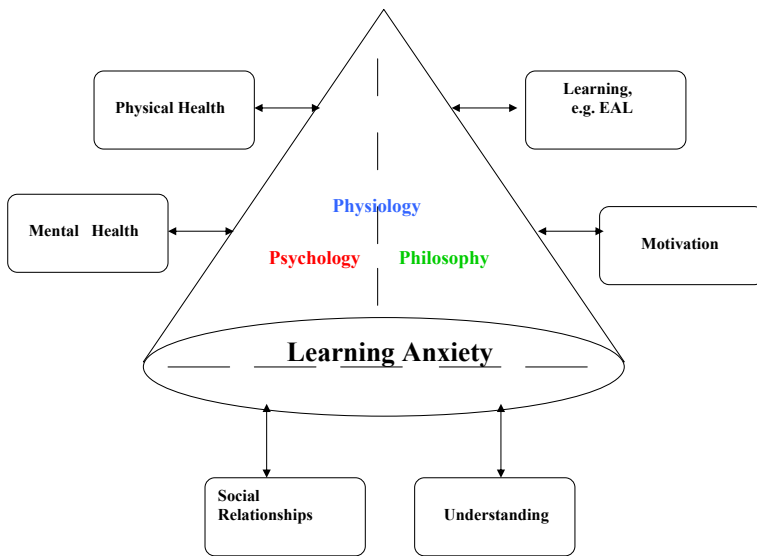


Figure 1. The interrelationship of the physiology, psychology, and philosophy of anxiety with respect to learning.

encouragement and the means to become more self-aware. We also need to give students and teachers opportunities and tools philosophically to examine their world views, beliefs, and values and the manifestations of these in institutional structures, procedures, and practices. As currently experienced, pervasive anxiety jeopardizes mental and physical health and negatively affects all aspects of teaching and learning. Traditional teacher education, with its inattention or insufficient attention to students' experience of anxiety, is to put it simply, anxiety-provoking. We believe that the proposed triunal model of anxiety can make a significant contribution to teacher education and administration.

The Authors

Shoaleh Bigdeli is an assistant professor in Iran University of Medical Sciences and Health Services in the School of Medicine, Department of Medical Education. She is currently Director of Educational International Relations. Her research interests include curriculum design, educational neuroscience, psychophysiology and philosophy of learning anxiety, cooperative learning, and group assessment. Her recent publications focus on contributions to understanding emotions and learning, group assessment, and teacher education.

Heesoon Bai is an associate professor in the Faculty of Education, Simon Fraser University where she is currently the Director of Graduate Programs, Coordinator for the Philosophy of Education PhD program, and Editor of *Paideusis, the International Journal of the Canadian Philosophy of Education Society*. Her research interests are wide-ranging and include ecophilosophy and environmental education, the ethics of care, complexity theory, zen aesthetics, contemplative

inquiry, and the making of exceptional educators. Her recent publications focus on contributions to education through the application of Asian philosophies.

References

- Appignanesi, R. (2006). *What do existentialists believe?* London: Granta Books.
- Bell, D. (1990). *Husserl*. London: Routledge.
- Carlson, N.R. (2002). *Foundations of physiological psychology* (5th ed.). Boston, MA: Allyn and Bacon.
- Claxton, G. (1990). *The heart of Buddhism: Practical wisdom for an agitated world*. Wellingborough, UK: Crucible.
- Claxton, G. (1999). *Hare brain, tortoise mind: Why intelligence increases when you think less*. Hopewell, NJ: Ecco Press.
- Cohen, B.J., & Wood, L.D. (2000). *Memmler's The human body in health and disease*. Philadelphia, PA: Lippincott Williams and Wilkins.
- Ellis, H.C. (1990). Depressive deficits in memory: Processing initiative and resource allocation. *Journal of Experimental Psychology: General*, 119(1), 60-62.
- Gardiner, P. (1988). *Kierkegaard*. Oxford, UK: Oxford University Press.
- Gower, P.L. (Ed.). (2004). *Psychology of fear*. New York: Nova Science.
- Hedl, J.J. (1986, January-February). *Text anxiety and depression in sentence memory: Parallel effects?* Paper presented at the annual meeting of the Southwest Educational Research Association, Houston.
- Hoch, P.H., & Zubin, J. (1950). *Anxiety*. New York: Grune and Stratton.
- Hall, C.S. (1954). *A primer of Freudian psychology*. Cleveland, OH: World.
- Kalupahana, D.J. (1987). *The principles of Buddhist psychology*. Albany, NY: SUNY Press.
- Kelly, D. (1980). *Anxiety and emotions: Physiological basis and treatment*. Springfield, IL: Charles C. Thomas.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York: Basic Books.
- Langdridge, D. (2007). *Phenomenological psychology: Theory, research and method*. Harlow, UK: Pearson.
- Lauer, Q. (1965). *Phenomenology: Its genesis and prospect*. New York: Harper and Row.
- Levitt, E. (1980). *The psychology of anxiety* (2nd ed.). Mahwah, NJ: Erlbaum.
- Loy, D. (2000). *Lack and transcendence: The problem of death and life in psychotherapy, existentialism, and Buddhism*. New York: Humanity Books.
- Marieb, E.N. (2001). *Human anatomy and physiology* (3rd ed.). San Francisco, CA: Pearson Education.
- Moran, D. (2005). *Edmund Husserl: Founder of phenomenology*. Cambridge, UK: Polity.
- Nyanaponika, T. (1969). *The heart of Buddhist meditation (Satipattanna): A handbook of mental training based on the Buddha's way of mindfulness, with an anthology of relevant texts translated from the Pali and Sanskrit*. New York: Citadel Press.
- Schlesinger, A.M., Jr. (1970). *The vital center: The politics of freedom*. London: André Deutsch.
- Selye, H. (Ed.). (1980). *Selye's guide to stress research*. New York: Van Nostrand Reinhold.
- Silverthorn, D.U. (2004). *Human physiology an integrated approach* (3rd ed.). San Francisco, CA: Pearson Education.
- Strasser, F. (1999). *Emotions: Experiences in existential psychotherapy and life*. London: Duckworth.
- Wilber, K., Engler, J., & Brown, D.P. (1986). *Transformations of consciousness: Conventional and contemplative perspectives on development*. Boston, MA: Shambhala.
- Ziada, A.M. (2000). The central nervous system (clinical neurophysiology). In M.Y. Sukkar, H.A. El-Munshid, & M.S.M. Ardawi (Eds.), *Concise human physiology* (2nd ed., pp. 312-400). Oxford, UK: Blackwell Science.