

A BASIC THEORY OF NEUROPSYCHOANALYSIS

W. M. Bernstein

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*“The whole of science is nothing more than the refinement
of everyday thinking.”*

—Albert Einstein, *Physics and Reality* (1936)



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PREFACE

This book introduces a theoretical framework for studying the mind and brain. Specifically, an attempt is made to frame ideas from psychoanalysis and cognitive-social psychology so that they can be taken readily into the realm of neurobiology. Psychoanalytic theory still represents a very comprehensive description of the human mind. It includes cognitive, emotional, and behavioural variables, plus the idea of unconscious mental operations. The *pleasure principle* and *repetition compulsion* were Freud's most general concepts of mental functioning. These concepts are renovated to get them on the same page with ideas from social cognition and neurobiology. I think the basic theorizing has important implications for diagnosis and treatment of mental illnesses.

The Complete Works of Sigmund Freud contains twenty four volumes. He speculated on basic scientific questions in biology, psychology, and sociology. And, he wrote about applications of his theory to child development, psychotherapy, group behaviour, religion, and art. But the core of the theory is relatively concise. Perhaps all the fundamental and most valid assumptions of Freudian psychoanalytic theory could fit into one or two volumes. It is how the separate

assumptions are linked together in a powerful explanatory system that makes psychoanalytic theory so compelling.

Scientific assumptions are testable by scientific methods. For example, there is the hypothesis from "Negation" (Freud, 1925) that claiming one's innocence *too much* is a compensatory behaviour. In other words, the person who feels guilty about having engaged in acts of anti-social behaviour, or who merely has "bad" thoughts, makes a special effort to claim that they have never done or ever had wishes to do such things. This, of course, is the same assumption that Shakespeare made in *Hamlet* (1600): "The lady doth protest too much methinks".

While psychoanalysis dominated Medical Psychology between approximately 1920 and 1975, Behaviourism was mostly dominant during that period in academic psychology departments. When I entered college in 1969, the psychology faculty somehow communicated the idea that psychoanalytic ideas were not testable. But this is not so (e.g., Eysenck & Wilson, 1973; Weston, 1999).

The doctrinaire rejection of psychoanalysis motivated, in part, my doctoral thesis. It involved a laboratory experiment demonstrating that Freud's idea about *negation* was valid under certain conditions (Bernstein, 1981; 1984). Those who feel especially guilty about having anti-social wishes do indeed make more strenuous denials of such wishes than others. But I also found that some young men are not particularly interested in "sex with mother". Oedipal dynamics are central to psychoanalytic theory, but some analysts tended to be ridged in applying the concepts in practice. Anyone disclaiming incestuous wishes was thought to be involved in a defensive operation. This dogmatism rivalled that of the Behaviourists who believed that psychoanalysis was all bunk.

In any case, it is likely that people who made (or even still make) a claim that psychoanalytic assumptions are not verifiable had no knowledge of how such things might be tested by scientific methods. The field of Human Experimental Social Psychology arose shortly after the beginning of psychoanalysis. The experimental social psychologists developed methods that were suited to testing psychoanalytic hypotheses. This is not a coincidence. Kurt Lewin and his students were all knowledgeable of psychoanalysis and were driven to learn how to test and refine psychodynamic assumptions.

A key for developing scientific theory in general is to connect theoretical realms with their adjacent fields. Otherwise, the islands of knowledge become sealed-off or *hermeneutical*. Psychology can develop most surely by linking to cognitive-social theory on one side and biological theory on the other. The linking is not *scientific reduction* defined formally (e.g., Kemeny & Oppenheim, 1956). But, we may ask of a hypothesis about mind–brain: “Is it at least consistent with knowledge of both biology and social psychology?” If not, then the number of plausible paths for future research is reduced. This is a reduction or consolidation in the service of moving ahead with more integrated theories.

Such a theory-making method takes its cue from the brain itself. A reduction occurs in the brain early in life before development can continue. The neonate’s brain contains about a trillion cells. Soon after birth, the number of neurons starts to fall. The adult human brain contains only 10% of the neurons in the newborn. Brain–mind development is not merely a function of the number of nerve cells in the brain. But reducing clutter is certainly a temporal precedent of development.

Psychoanalysis, behaviourism, and experimental social psychology have developed on parallel paths that rarely connect (Bernstein, 1995; Whittle, 1999). The “soft science” psychoanalytic school and the “hard” behaviourist and experimental schools are still allergic to each other. Perhaps the greatest barriers to developing theory in psychology are the assumptions that biological and psychological explanations are mutually exclusive; and, that cognitive and motivational explanations are also mutually exclusive. These are false dichotomies for the most part. The theories and methods of experimental, psychoanalytic, and modern neurobiology schools are each powerful. How can more connections be made between them?

The method of this book is to consider some robust, central concepts in psychology, psychoanalysis, and neurobiology. Then, theoretical paths are followed that are at least consistent with tenets in all three fields. Some new assumptions are added to link the basic ideas. Many of the integrating ideas seem logically obvious when the various fields are considered together rather than in isolation.

My argument is built on a fundamental assumption: *Understanding the relationships between repetitive processes and approach pleasure/avoid pain operations (the pleasure principle), is a key to understanding mind–brain.*

Repetitive processes are stimulated when the person fails to develop needed, useful concepts. In mental illness, repetition is often fruitless. But the tendency to repeat gives the person a chance to “get it right”. This is what makes mind–brain a “continuous improvement apparatus”. Repetition is a normal mind–brain process that can become deregulated by neuropathology, psychopathology, or both.

The mind is a biological and social thing. Psychoanalysis has many terms to describe how biological tendencies to behave are shaped by societal forces such as parents, teachers, and the culture at large. In his great style, Freud labelled these transformations “the vicissitudes of the instincts”. Today we say less colourfully that “the mind is the functioning of the brain”. Any theory presuming to improve on psychoanalysis must integrate what has been learned about psychology and neurobiology since Freud.

A *reduction* of psychology to biology is impossible because there are no theoretical terms in biology that correspond to the phenomena of “subjective experience”. Subjective experiences of thought and feeling, their relations to each other, and to overt behaviours, are our subjects. Understanding relations between biological and psychological events calls for eliminations, additions, and readjustments of theoretical terms in psychology and neurology.

This is not to say that parsimony is not always welcome in a theory. *The Parsimony Principle* is that simple explanations should be preferred to more complicated ones. But when a theory ignores the real complexity of phenomena, it is better described as “incomplete” than parsimonious. Behaviourism provided a valuable pole in the dialectic with psychoanalysis and other theories concerning arcane mental processes. No one besides a few strange characters in psychology departments at mid-century ever believed that thinking and feeling don’t occur. Rather, it made some good sense to study what was relatively observable, that is, the stimuli in the environment and how the animal responded to stimuli with overt movement of its body. This last is what behaviourists called “behaviour”.

While anyone can see the rat and the cheese, it took behavioural science to develop methods of studying animal behaviour that worked to extend the understanding of psychology beyond common sense and folk wisdom. Modern human experimental psychology,

a paradigm strongly shaped by behaviourism, includes cognitive-social psychology and modern neurobiology. Today, it makes sense to consider as “behaviour” any activity of cells or entire organisms that can be observed with or without prosthetic sensory devices, e.g., functional magnetic resonance imaging, (fMRI). Overt, easily observable behaviour is surely affected by less obvious subjective experience, that is, the person’s private thoughts and feelings, and the neurological processes that support them.

Neuroscience recognizes all sorts of phenomena and research methods as important for understanding the mind and brain. These include: recording electrical activity in single cells and the entire brain; real-time imaging of physiologic processes in the brain; and identifying the molecular cascades occurring between synapses and neuronal nuclei. Work in the clinic is being supported by extensive efforts to develop psychopharmacological agents (see Stahl, 2008).

This book is an attempt to correlate objectively measurable and hypothetical brain activities to discrete and global subjective experiences of mind, such as “resolving conflict” and “feeling anxious”. In this effort to integrate parts of psychoanalytic thinking with neuropsychiatry I am following pioneers such as Solms (e.g., Solms & Turnbull, 2002); Levin (2003); and Carhart-Harris, et al. (2008). Here, I attempt to examine and refine the most general, foundational assumptions of psychoanalysis: *pleasure principle* and *repetition compulsion*.

Correlating an individual’s subjective experience with events in the brain would be impossible if we did not listen to patients and research subjects with *the third ear* (Reik, 1948). That is, if we did not query our subjective reactions to information coming from other people. The new biology of mind indicates that aspects of the person’s subjective experience are transmitted reliably to the brains and minds of observers. For example, the preverbal infant and the mother use subtle forms of communication that help the parent regulate the experience of the newborn. The parent’s competence at sensing and conceptualizing the baby’s needs is the most important factor in human development.

Neuroscience research has supported the basic validity of many social, psychological, and psychoanalytic ideas. Biological and social-cognition theoretical systems are prepared as never before for consolidation efforts.



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ABOUT THE AUTHOR

W. M. Bernstein received a BS in Biology from Tufts University and a PhD in Experimental Social Psychology from the University of Texas at Austin. He was a Research Associate in Psychology and Psychiatry at Dartmouth College and Medical School; and, a NIMH Post-Doctoral Fellow in Basic and Applied Social Psychology at Columbia University. Dr. Bernstein is a graduate of The Center for Psychoanalytic Studies, Massachusetts General Hospital-Harvard Medical School; and, a Diplomate of the American Board of Medical Psychology. He was one of the first psychologists in the United States licensed to prescribe psychotropic medicines.



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INTRODUCTION

A model of mind is developed from concepts in psychoanalysis, brain biology, and experimental social psychology in Chapters One through Three. The ideas are applied in Chapter Four in the context of emergency responses. In Chapter Five I use the basic framework to explain the results of a laboratory experiment involving approach and avoidance conflict. In Chapters Six through Nine, the model is used in the context of the treatment of Mr. K, a sixty five year-old man. The case of Mr. C, a forty five year-old man, is described in Chapter Ten. Relevant psychopharmacology and neurobiology are included throughout the book. Chapter Eleven takes a look at the processes involved in thought suppression and its affect on executive function, especially memory. Chapter Twelve describes a diagnostic scheme based on the theory.

Chapter One looks back at psychoanalysis and other psychological theories. I take as representative of mainstream psychoanalytic theorizing the final book of the late Charles Brenner, *Psychoanalysis or Mind and Meaning* (2006). My argument begins with what are some deficiencies in Brenner's theorizing; especially that he does not recognize the need to include a principle of mental functioning in

addition to a *pleasure principle*. His book is a succinct description of what might be called “neo-classical” psychoanalytic theory.

Chapter Two considers important contemporary theories of the mind. These include the Affect Regulation School (e.g., Fonagy et al., 2004; Schore, 2003) and the Cognitive Therapy School (e.g., Beck et al., 2004). The affect regulation writers are on the right track. But despite the effectiveness of some cognitive treatment methods, the theories of the Cognitive Therapy School are problematic. This is because they do not consider energy or motivational variables, or unconscious processes. There is logically no doubt that thinking, like all other biological processes, uses energy. If logic isn’t convincing enough, empirical studies punctuate the point. In research where subjects were asked to perform effortful mental control tasks such as the Stroop Test, it was found that, “relatively small acts of self-control are sufficient to deplete the available supply of glucose” (Gailliot et al., 2007, p. 335).

Affect regulation theories and psychoanalysis both include cognitive and motivational variables in their theorizing. That is, they are concerned with mental processes and structures that guide and shape the use of biological energy for feeling, thinking, and behaving. It should be obvious that theories of the mind and brain must account for both cognitive and energy or motivational processes. In any case, some of the features of the Cognitive Therapy School are reviewed and critiqued.

Chapter Three spells out the general framework of the model. Figure 2 depicts the assumed causal relationships between data coming from the sense organs and viscera; and concepts, expectations, feelings of pain and pleasure, and overt behaviour. An important part of the model comes from the experimental and theoretical work of Allan Snyder and his group at the Centre for the Mind in Sydney, Australia (e.g., Snyder & Mitchell, 1999; Snyder et al., 2006). Snyder’s group studies processes of concept-activation in autistic and normal subjects. Clearly, central mechanisms in conceptual processing involve concept activation, that is, how concepts become conscious or “switched on” and then “switched off”.

The chapter then examines the role of awareness and self-awareness in executive functioning. Four conditions in which mind–brain functions either with few or no concepts, or with some disorder of concept usage, are discussed: autism, neonatal life, animals, and post-traumatic disorders. Such naturally occurring “conceptless

minds" are invaluable when attempting to understand cognition in normal and pathological conditions.

A key executive function of mind is to generate expectations, essentially probability estimates, regarding the potential of situations to cause pain and pleasure. Concepts or "theories of reality" are the proximal generators of expectations. Normally, the person's concepts of "what causes what" are "valid enough" to generate reasonable expectations or predictions of events in the biological, psychological, and social worlds. Situations may be expected to yield pleasure, pain, or both. But how does the person decide what to do when expectations conflict?

Expectations are the net result of thinking, and the summary material used for executive decisions regarding conflicts between a situation's pain and pleasure potential. Conflict is maximal when the options are of a zero-sum variety, that is, when only two, mutually exclusive options are considered for solving a conflict. I assume that minds regulated by many "black and white" conceptual categories are less developed than those able to imagine more than two solutions to a problem.

The belief that a conflict can have only two possible solutions rather than many is an important cause of anxiety seen in both normal and pathological conditions. Mind-brain decision-making processes operate in parallel, constantly, consciously, unconsciously, and at varying levels of intensity, in order to resolve conflict. The brain is a calculator of pleasure and pain. All thinking has hedonic causes and effects.

Decisions are resolved by what psychoanalysts call *compromise formations*. The compromise is between the person's need to solve the problem and their need to regulate the mind itself. Some solutions may be unthinkable (e.g., "Stop smoking? Not me!"). Compromises in the face of conflict are strongly affected by both the individual's personality and their knowledge of the world. I assume that if an important conflict cannot be resolved by some satisfactory compromise, the mind-brain will process the conflict again. That is, *there is a tendency to repeat the psychobiological processes of conflict resolution. These processes will keep repeating at some level of mind-brain if no better concepts for resolving the conflict are developed.*

Depending on the competence of decisions, the person will be more or less successful in the biological, psychological, and social worlds. Executive functions such as directing attention, especially

towards the self, work more and less well to regulate the person's subjective experiences of sensation, thought, and feeling. Mental competence depends, in part, on the durability under stress of conscious, executive functions.

The prototypical stress is caused by conflicting pleasure and pain expectations. Animals want to approach pleasure and avoid pain. Of course, if a situation or person promises only all pain or all pleasure there is no problem. But the idea that any thing or any person is "all good" or "all bad" is preposterous. In truth, things are more complex. There is always some stress between the mind-brain systems striving to approach an object, and the systems wanting to avoid the same object. The "object" can be a person in the social world or a thought in one's own mind. Bio-psychological health depends upon the degree of regulation of approach and avoidance tendencies by means of learned Executive or Ego Functions. Brain-mind is the manager of stress regulation but all organ systems are involved more or less.

Decisions are made in milliseconds and over years. But in life-threatening emergency situations, time is at a premium. I assume in **Chapter Four** that *the fear of not having enough time to make and enact a competent decision is the deepest fear*.

Chapter Five reviews briefly the work of Kurt Lewin and Neal Miller on Approach and Avoidance Motives. Lewin and Miller were influenced by Freud's theories and, in turn, built the foundation of today's School of Experimental Social Psychology. This book has been influenced by the early scholars in the experimental school including: Leon Festinger, Stanley Schachter, Edward Jones, Harold Kelly, John Lanzetta, and Jack Brehm. Lewin, Miller, and their students devised concepts and experimental methods to study conflict in the laboratory. They described clearly for the first time the asymmetry in the temporal and spatial dynamics of Approach and Avoidance Motives.

Ambivalence and conflict about approaching pleasure and avoiding pain are at the centre of most clinical disorders. In normal psychological functioning the person is always attempting to resolve conflicting expectations about moving towards or away from ideas, situations, or other people. The late Melvin Snyder wrote about how people generate and exploit conceptual ambiguity in response to conflict (e.g., Snyder & Wicklund, 1981). I use the results of a study in

Snyder's Attributional Ambiguity tradition (Bernstein, Stephenson, Snyder & Wicklund, 1983) to demonstrate the use of the model in Figure 2.

Chapter Six explores how attentional control and the regulation of thoughts and feelings are hampered in anxiety disorders. The case of Mr. K, who has anxiety, is used to illustrate my approach. The patient's problematic object relations history and his early experience of talk and pharmacological therapies are described.

Ideas from both Freudian Drive Theories and Self-Psychoanalytic Object Relations Theories are needed to explain the person (e.g., Bernstein, 1984; 2001). Despite some moderately extreme traumas and conflictual relationships with family members, Mr. K developed "good enough" conceptual competences to lead a relatively successful life. But his control system, that is, part of his personality, was not good enough to regulate anxiety reliably. This chapter builds on the ideas of Melanie Klein and David Winnicott to describe the development of the first self-concepts that comprise the personality. The chapter also includes some additions to the basic model described in Chapter Three. The revised model appears in Figure 6.

Chapter Seven looks at how self-concepts, developed early on, must continue to develop in order to make the person competent to regulate sexual and aggressive behaviours in adulthood. Freud's Oedipus Theory is examined. The need to resolve Oedipal conflict is described as a more general problem involving integration of new concepts and regulatory processes into the developing self-system.

Chapter Eight describes the "vicissitudes" of the aggressive instincts in the case of Mr. K. Ideas from the previous chapters are used to explain Mr. K's difficulties at both the psychological and neurochemical levels of analysis.

Chapter Nine reviews psychological and neurobiological aspects of Eye Movement Desensitization and Reprocessing (EMDR) treatments. Processes proposed to explain the therapeutic action of EMDR, including the activation of rapid eye movement sleep-like processes (REM), and alterations in the function of working memory are reviewed. The use of EMDR with Mr. K is described.

Chapter Ten describes the Case of Mr. C, a forty five year-old theoretical scientist. Psychodynamic diagnoses, cognitive methods, drugs, and EMDR produced an alteration in executive functioning as measured by neuropsychological testing. Relationships between

memory processes, psychiatric symptoms, and mind–brain change are illustrated in this chapter. The argument is made that mind–brain change depends, in part, on relatively disorganized, high entropy brain conditions such as REM sleep and states induced by hallucinogens.

Chapter Eleven offers an explanation for the results of a recent study of thought suppression employing Semantic Priming methods (Najmi & Wegner, 2008). The relations between thought suppression processes, stress, memory problems, and anxiety disorders are discussed.

Chapter Twelve uses ideas from the basic theory to develop a model of causal relationships between etiological factors and six reliable categories of functional psychopathology.

The Epilogue adds some final thoughts about evolution, executive functioning, somatoform disease, and health care.

CHAPTER ONE

Historical foundations

Freud, a neurologist, began his work at the end of the 19th century. He predicted accurately that technologies to study the biology of brain processes would not be developed for a hundred years (Kandel, 2006). In the meantime, he devised a psychological model of mental structures and processes. Psychoanalysis understands the mind's tasks as aiding biological survival and reproduction. Freud described how instinctual, biological drives for security and sex become transformed in the course of living in a social environment. For example, the human infant's hunger drive is enacted by shameless eating. Later, sucking, grabbing, and gurgling are supplanted by more civilized eating behaviours such as using utensils and "table manners".

Freud's most general theoretical constructs were presented in "Beyond the pleasure principle" (1920). He made a distinction between two basic mental arrangements: *the pleasure principle* and *the repetition compulsion*. Simply enough, the pleasure principle states that we are motivated to behave in ways that produce pleasurable feelings and thoughts. I assume in the psychoanalytic tradition that feelings of pleasure and pain are always involved, at various

levels of consciousness, as both causes and effects of thoughts and behaviours.

More generally, feelings, thoughts, and overt behaviour are part of an overall system in which each has bidirectional causal effects on the other. In behaviourist terms, for example, pleasurable feelings associated with food and sex are reinforcing. The association of a stimulus with a good feeling works to build a habit to approach such a stimulus object. And, of course, painful feelings associated with physical or social situations work to create habits of avoiding such things.

Approach and avoidance habits include habits of thought, as well as habits of overt behaviour. For example, specific thoughts implying approach such as "I want to eat some sweets" become associated with overt, appetitive behaviours such as looking for sweets. And, actual approach behaviours can work to promote thoughts and bodily sensation. On the way to dinner, to have sex, to hear one's favourite concerto, or to buy cigarettes, the person imagines the consummation and the thoughts themselves are pleasurable.

But are the motives to approach pleasurable and avoid unpleasurable situations enough to explain the operation of mind? Freud used the case of "war neurosis" to illustrate that a pleasure principle alone is insufficient to explain the mind. Today we would label "war neurosis" a *Post Traumatic Stress Disorder* (PTSD).

Beyond the pleasure principle for Freud was *the repetition compulsion*. The existence of something like a repetition compulsion is consistent with a common symptom of PTSD listed in the latest edition of *The Diagnostic and Statistical Manual of The American Psychiatric Association* or DSM-IV (1994): Patients replay the traumatic events over and over both while awake and in dreaming sleep. Freud felt that the underlying causes of repetition seen in PTSD were different than those in less severe repetition pathologies, such as obsessive counting or compulsive hand-washing. A psychoanalytic explanation for obsessions and compulsions is that they are a form of self-punishment for some guilt-producing thought; and that punishment in the manner of having to perform some ritual is in some sense gratifying. The symptom rectifies an unbalanced situation by punishing the imagined wrongdoing. It is a form of masochism and, hence, explainable by a *pleasure principle*.

But most of Freud's war patients were not responsible for causing their trauma. He felt that the repetition of dreams in these patients is not sufficiently explained by a pleasure principle. Even if there was some pleasure in terrifying dreams or some guilt for surviving when comrades did not, it seemed to Freud that there was an additional factor operating. This he dubbed *the repetition compulsion*.

Freud (1920) did not make much progress in illuminating the nature of this compulsion. Rather, he speculated that there was "an instinct, an urge inherent in organic life to restore an earlier state of things". This he embellished with the idea that "the aim of all life is death". So, the repetition compulsion got its other name—the *Death Instinct*. This Death Instinct was posited as the antithesis of a more creative, Life Instinct. These he called *Thanatos* and *Eros*, respectively. Together, the two forces represent Freud's most general formulation of the dynamics of the mind.

Most psychoanalysts have been critical of the idea of a Death Instinct. For example, Charles Brenner in his final book claimed that: "All the currently available evidence speaks in favour of the conclusion that the mind always works to gain as much pleasure as it can, and, at the same time, to avoid unpleasure insofar as it is possible to do so" (Brenner, 2006, p. 18).

One can't disagree with Brenner that the mind strives to approach pleasure and avoid pain. But psychopathology and neuropathology can inhibit the person's ability to attain pleasure and avoid pain. Psychological conditions that are not adequately explained by a pleasure principle alone were what Freud was trying to explain with the repetition compulsion. Merely rejecting a Death Instinct is not enough. One must do something to explain phenomena that are not adequately characterized by a pleasure principle alone.

A simple, starting assumption of this book is that parts of the brain and mind are not operating merely on a pleasure principle. Processes in cortical association areas involved with cognition and feeling represent the brain and mind functions most regulated by a pleasure principle. Feeling and thinking are more or less equivalent to sensing and interpreting sensations of pleasure and pain. In contrast to these cortical regions, more primitive areas of the brain such as the amygdala have more specific functional responsibilities. The amygdala functions to regulate reflex-like, fear and flight

responses. In the absence of gross psychoneuropathology, its functions can come to be regulated by the higher regions of the mind and brain. That is, by those brain–mind areas operating under a pleasure principle. In PTSD clearly, and I assume in all other psychopathologies to various degrees, the functioning of cortex and various brain nuclei become disjoined. In other words, the mutual regulatory processes of the brain–mind system are out of order.

Anxiety

A major reason that PTSD is so hard to treat is that sensory stimuli associated with the original trauma reach the amygdala and hippocampus a millisecond or two before they reach the cortical areas of the brain (Kalivas, Churchill & Klitenick, 1993; Swerdlow & Koob, 1987; Zahm & Brog, 1992). Sights, sounds, and smells associated with the original trauma produce activity in the amygdala and a sensation of anxiety and dread. For example, the backfiring of a car sends the war veteran into an anxiety state. This fast amygdala activity, unmediated by logical thought, is also seen in phobias. The arachnophobe does not distinguish between poisonous spiders and others. Rather, all spiders activate a fear response. Similarly, the person with *social anxiety* is not a particularly accurate judge of which groups or places pose real dangers and which do not.

The cortex of the brain is centrally important for conceptual thought. Most often, no amount of reasoning with the trauma patient works to stem their anxiety. They cannot be convinced that there is no real threat in a current environment. Their ability to use thought to regulate anxiety is literally short-circuited by the fast action of the amygdala, which sets off fear and avoidance reactions before thought can intervene (LeDoux, 1996).

The difference between PTSD and other anxiety disorders might best be considered a quantitative one. All mental disorders are forms of dysregulation between brain–mind functions. Most generally, thoughts can function to regulate sensations coming from the external world and the internal environment of the body. The conscious and unconscious interpretation of sensations, the estimates of their pleasurable and painful or injurious potential, is cognition. What have been variously called *executive functions* or *ego functions* organize and regulate the relations between thought, feeling, expectations,

and overt behaviour. The “Executive” also works to relate thoughts to other thoughts, feelings to other feelings, and behaviours to other behaviours. Ideally, an individual’s mind–brain system can make the best decisions in line with a pleasure principle.

In trauma, unexpected sensations overwhelm the person. Protective reflexes of avoidance are activated quickly without thought. In refractory cases, traumatic, *one-trial learning* and *stimulus generalization* have taken place. Neuronal circuits supporting the avoidance behaviours fire in response to weak stimuli which only resemble the original, injurious situation in a general way. Once this set of conditions is met, we often diagnose PTSD. PTSD might best be considered a *learning disorder*. At bottom, the patient cannot learn or use what is learned to contain anxiety. All anxiety disorders share this quality of rational thought not working to control sensations. The trauma victim’s difficulties are quantitatively greater. And, because the habits formed in response to the injurious stimuli are activated quickly, cortical brain functions are not enlisted fully in anxiety control.

The war veteran “knows” that there are no enemies around the corner, but there is no “realization” of the knowledge. It does not work to reduce anxiety. The pleasure principle can’t operate. In its place we see the unregulated operation of other brain regions. When brain sub-systems are operating without input from higher, conceptual processing areas, behaviour tends to repeat.

Many disease symptoms are a result of the body’s attempts to heal. The repetition instinct can best be understood as the idea that until brain–mind processes develop to effect higher levels of control, they will repeat. *Trial and error* is a basic sort of animal learning (Thorndike, 1913). Behaviours that lead to increases of pleasure or decreases of pain will become habits. An animal will try this and that until the right behaviour is executed, that is, the one that increases pleasure or decreases pain, or both. It is hard for the anxiety patient to learn. He or she can’t do the experiment or can’t learn from it. Until the person develops concepts that work to control mental life, the old thoughts, feelings, and behaviours will repeat.

The good news is that our brains will constantly tee-up the lousy old response to a situation until a better response is developed. We are wired for constant improvement. But serious injuries coming from the social or biological environment of the brain can