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**Going Beyond The Assumptions of Cognitive Therapy**

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Psychotherapy is a term that encompasses a variety of approaches that promote change in the mental state or behavior of persons who present with distressing symptoms or self defeating behaviors. Throughout the twentieth century there have been trends in which one form of treatment or another has been in fashion reflecting the theoretical zeitgeist of that particular moment. As we approach the twenty first century, cognitive oriented therapies, especially Beck's (Beck, 1976; Beck, Rush, Shaw, & Emery, 1979; Beck & Freeman, 1990) Cognitive Therapy (CT) and to a lesser degree Ellis' (Ellis, 1994; Ellis & Harper, 1975) Rational Emotive Behavioral Therapy (REBT) have become a major movement influencing the practice of psychotherapy.

Cognitive oriented therapies have added considerably to psychotherapy by advancing the tenant that "neurotic" psychopathology (Ellis, 1994), depression (Beck, et al., 1979), emotional disturbances (Beck, 1976, and character pathology (Beck, et al., 1990) are the result of faulty thinking. CT and REBT are an outgrowth, on the one hand, of the rejection of psychodynamic psychotherapy (Beck, et al., 1979; Ellis, 1994) and, on the other, the development of cognitive psychology which itself is a break from the restrictions of behaviorism (Kellogg, 1992). Cognitive psychology's acceptance of mental

process as being appropriate for empirical research has added considerably to the understanding of behavior and emotional disorders. Johnson-Laird and Oatley (1992) observed, "An achievement of cognitive science is to rehabilitate mental terms following their banishment during 'Behaviourism', and to show how the psychology of belief and desire can be modelled computationally" p 213-214.

Many outcome studies of cognitive therapies have demonstrated favorable results when compared to non-treatment control groups (see Beck, et al., 1979; Dobson, 1989; Elkin, et al., 1989). When compared to other treatment modalities, results have been inconsistent (DeRubeis & Crits-Christoph, 1998\*\*\*). Some studies (xxx) have demonstrated superior outcomes where others have not (xxx). There have been failures. To cite just a few, Addis and Jacobson (1996) demonstrated that clients' pretreatment beliefs concerning the causes of their depression impact outcome. Those holding relationship-oriented reasons had a negative response correlation to CT. Those who cited childhood reasons had uncorrelated outcomes, demonstrating inconsistent, unpredictable treatment benefits for these individuals. Beutler, et al. (1991) found negative outcome relationships to both clients' tendency to internalize and to resist authority. Patients with personality disorders have a significantly worse outcome in social functioning and more residual symptoms of

depression than patients without personality disorders, an outcome that occurred across all treatment modalities including cognitive behavioral therapy (Shea, et al. 1990). In another study (Persons, Burns & Perloff, 1988) it was found that patients with personality disorders also had a high rate of premature termination.

Many reasons can be given for these inconsistent results and unsuccessful outcomes with different explanations reflecting either theoretical or methodological issues. In this paper I wish to present several explanations that reflect on what I observe as weakness in many cognitive oriented or rational therapies: The promotion of interventions that are based on: (1) inaccurate or simplistic conceptualization concerning the nature of schemata (especially of the self); (2) failure to take into account the difference between the subjective and objective sense of self; (3) a lack of consideration for the significant influence on thought, affect, and behavior of pre-verbal and other nonverbal learning; (4) the limitations of introspection; and (5), the promotion of an unfounded position concerning the accessibility, for phenomenological examination, of one's thinking. Simply put, in this paper it is proposed that there is more to mental images and ideas than meets the mental eye.

#### A World In One's Head

It almost goes without saying that each of us is aware that

we have mental pictures (complete with sound, smell, taste, and tactile impressions) of our respective worlds and of ourselves. Because we each have internalized a mental representation of our individual environments, which cognitive psychologists call "frames" (Minsky, 1977), we can carry on adaptively. The rejection of behaviorism is part an affirmation of a tenant of "folk" psychology (Goldman, 1993; Johnson-Laird & Oatley, 1992; Lazarus, 1991b) that people are aware that they think and believe that their thinking drives their behavior. Cognitive oriented therapies are manifestation of this shift.

Baddeley (1992b) notes, "The world is never entirely predictable, but has sufficient regularity to make it advantageous for the organism to use the past in order to predict the future" (p. 281). It is not the world as it actually exists to which we respond but to the world we have each internalized and modify as we continually evolve schemata and form episodic memories, i.e. recollections of personal experiences (Baddeley, 1992b). These impressions and what they subjectively represent, not the world itself, explain our responses. This is an inferred tenant of cognitive oriented therapies. Faulty thinking is a product of subjective and often distorted memories of past experiences which influence how one looks at one's current situation and biases how one considers what will happen in the future. What is often neglected is how ego syntonic this faulty

thinking is, inaccessible to honest examination, and resistive to change once a thinker becomes aware of it.

#### Dynamic Memory

Our impressions of the world (and of ourselves) are not static. Every moment our worlds keep changing. Each day brings new experiences and often puts us in situations different from what has occurred to us before. The world does not stand still and without updated mental impressions, with which we associate relationships and meaning, we would be lost. . . or worse. We maintain a sense of where we are because we remember how we got to that point. Individuals with lesions to the hippocampus experience anterograde amnesia (Zola-Morgan & Squire, 1993; Zola-Morgan, Squire, & Amaral, 1986): They can remember events prior to the injury but cannot retain explicit memories of events or develop knowledge of people and conditions that were not known before the lesion. Individuals with this condition cannot function outside of a safe structure given that they would become lost, disoriented, and overwhelmed (personal communication with Squire @ 1998 A.P.A. Convention).

The impressions that are updated and adjusted tend to be the representations of our general situation and environment including such details as where I am, how I got here, what I'm doing, what's happening around me, etc. These are features of ourselves and the world that are perceived as dynamic and which

we can recall later as having occurred or existed, reflecting also our concept of time and order. Mead (19???) description of how the currently experienced "I" becomes almost immediately the remembered "I" is an example of dynamic memory. This process is not like a video monitor and "...the accuracy of a memory does not correspond to the vividness" (Engel, 1999, p. 15). For reasons explained below attention is selective and what we remember is distorted.

#### Core Impressions

As important as these dynamic representations are, there also exists core impressions (nonverbal schema) that are fundamental for our existence and which are not subject to easy modification. These represent cognitive foundations upon which our sense of self and the world are fastened. These are essential for making both the world and our personal sense of self as being reasonably consistent and predictable. They influence our perception to what is happening now and or subsequent reactions. If these impressions are reasonably reflective of ourselves and of our worlds, our attitudes and behavior tend to be adaptive. If there is significant distortions, a person will have difficulty. Before the cognitive movement Rogers (1951) proposed something similar to this when he discussed the variance between self experience and actual self structure.

There is evidence that the root of the core impressions of one's self and of others are pre-verbal (See Cohen & Salapatek, 1975; Brooks-Gunn & Lewis, 1984) and have nativistic seeds (Carey, 1996; Gopnik and Moltzoff, 1996). Any theory of psychotherapy must be attentive to the nature and influence of these very personal core impressions and to the ontological processes that form them.

It has been demonstrated that around the age of 18 months, normal infants begin to discriminate between videotape images of themselves and of peers (Brooks-Gunn & Lewis, 1984) They have a schema for their faces (Gallup, 1979; Lewis, Brooks-Gunn, & Jaskir, 1985). From this evidence we can conclude that the initial concept of self has a visual component (see Howe & Courage, 1993) and may have other sensory modes of self recognition, i.e., touch, smell, and hearing (Damon & Hart, 1982). During this early period of development, a core self schema is forming based on the impressions that the infant has realized from their early experiences.

Object relations theorists, especially Mahler (Mahler, Pine, & Bergman, 1975; Mahler, 1979) have conducted observational longitudinal studies of infants and toddlers that reveal, during what they label stages of separation-individuation, the infant's development of a mental representation of self separate from "...the principle representative of the world as the infant

experiences it (the primary love object)" (Mahler, 1979, p. 131). This is usually the mother. Mahler also describes behavioral patterns of normal toddlers that infers healthy achievement of "object constancy," i.e., the integration of earlier split good and bad mental representations of the self into a whole (and the companion consolidation of good and bad representations of the object). Conditions that would interfere with the successful achievement of this integration during what Mahler identifies as a rapprochement subphase during the third year of life causes the "incapacity to synthesize the self as an integrated concept and the concepts of significant others" (Kernberg, 1984, p. 190). According to psychoanalytic theory this would result in a fixation in development that would account for severe adult character pathology (Kernberg, 1980, 1984; Masterson, 1981).

Mahler, et al's observations are interpreted with psychodynamic constructs including the ". . .confluence of prevalent conflicts deriving from separation-individuation factors with those deriving from the following oedipal period" (Kernberg, 1980, p. 112). Nonetheless one does not have to subscribe to a psychoanalytic orientation to appreciate Mahler's work. Her studies provide a systematic account of the process of individuation and the inference to the "psychological birth of the human infant" (Mahler, et al, 1975) as the child begins to internalize representations of him or herself, as a whole being,

and of significant others. Mahler's observations can even be accommodated with many modularity theories, particularly "starting state" nativism (Cary, 1996; Gopnik & Wellman, 1994) which, as Gopnik (1996a) summarizes, proposes that ". . . the infant is innately endowed with a particular set of representations of input [including that of self and other] and rules operating on those representations. . . Initial structures will be defeasible; any part of them could be, and indeed will be, altered by new evidence" (p. 222). Neurological deficits that would interfere with the processing of this new evidence or negative psycho-social events occurring during these early years that would impact development, as the object relations theorists propose, would be manifested in various problems (especially revealed in erratic relationships) reflecting the lack of stable and solidified self and other representations. While the expression of these deficits would be observable in behavior and thinking, the source would be invisible to introspection because of infantile amnesia (the inability of people to remember events of the first three and a half years of life). More important the mind set would be so much a part of the person's fundamental sense of being and knowing as to be impervious to cognitive interventions that challenge faulty thinking.

#### Objective And Subjective Self

The self is not a singular entity. James (1875)

distinguished between a subjective and objective self. The former is the "self" as the observer and the latter the self that is phenomenologically observed and remembered. This is a distinction which remains valid and has influenced and is reflected in contemporary research (see Damon & Hart, 1982; Howe & Courage, 1993; Damasio, 1994). Howe & Courage (1993) point out that "the facility with which toddlers acquire correct pronoun use probably reflects in part their mastery of the sense of self as both subject ['I'] and object ['me'] and their awareness of the distinction between self and others" (p. 319). This is a significant development, not because the toddler achieves correct grammar but rather this achievement reveals that (s)he has an understanding of one's self as the constant viewer, causal agent, and thinker ("I") and an impression of himself or herself as the observed ("me").

There is neurological evidence that the subjective self (the "I") and objective self ("me") have distinct neurological underpinnings (see Ramachandran & Blakeslee, 1998; Damasio, 1994). Patients with anosognosia (a condition resulting from stroke and other brain lesions) maintain explicit memory function and reasoning but have a demented sense of subjective self. "...anosognosics remember who they are, where they live and worked, who the people close to them are. But that wealth of information cannot be used to reason effectively on the current

personal and social state" (Damasio, 1994, p 155). They can confabulate about movement of limbs that have been paralyzed (Ramachandran & Blakeslee, 1998) and have no sense of their inability to move and perform tasks that they once did.

While this distinction between subjective self and objective self is made, it is also apparent that "...these two aspects of the self are intimately and complexly related..." (Howe & Courage, 1993). We are aware of our subjective self but our understanding of it is influenced by our sense of who we are. Volition, one of the constituents James (1892/1961) identified, is colored by the perception of our ability to act and respond to our environments.

The concept of the subjective and objective self and their development have implications for psychotherapy. First, each of us from early childhood have internalized a different sense of who the *I* is, a perception that is profoundly influenced by the culture and the response of those raising the young child (see Triandis, 1995; Rose Markus, & Kitayama, 1994). Each also begins to acquire early object constituents (James 1892/1961) including one of the most salient, awareness of one's body parts and features and, as one begins to acquire language, realization of one's sex before one fully realizes the self as a total entity with an unique, personal history of what has happened to "me" and the events' impact. These primary impressions of the unique self

as object are initially sensory and early verbal. As will be described below, even before children begin to acquire language, they assign to both the impressions of *I* and of *me* assumptions, beliefs, and expectations that are often tacit and not verbalized. These represent systems of self schemata, distinctive to each individual, that allow for a continuous awareness of the self as consistent in characteristics and attributes.

The significance of this is inferred by Howe & Courage's (1993) solution to the issue of infantile amnesia (i.e., why don't people remember what occurred during the first three and a half years of their lives). "Autobiographical memory, by definition, is memory for information and events pertaining to the self. . .Without a clear recognition of an independent [objective] self, there can be no referent around which personally experienced events can be organized" (Howe & Courage, 1993, p. 306). They also note, "we are claiming that the development of the self-concept (or self-schema), like that of other schemata, has a dramatic impact on the way in which memories are organized (encoded, stored, and retrieved), not on the structural components of memory itself (p. 316)." Howe and Courage further propose that one does not lack memories of events prior to the formation of the objective self. They exist but without reference and unconnected to a historical self; "...the

infant will learn and remember, but these experiences cannot be recognized as specific events coded with respect to time and place that happened to a 'me'" (p. 306). Only when the child achieves a critical mass of self constructs does the objective self solidify.

The ramifications of Howe and Courage's solution to infantile amnesia on psychotherapy are substantial. These early antecedents of the objective self are not accessible to conscious reflection, but their lasting influence on adult behavior and mood is strongly suggested. On a superficial intellectual level a person may accept that there is something wrong with the way he thinks or reacts but changing that requires effort and acceptance on a much deeper level. Take for example basic trust, a state of mind that Erikson (1963) proposed is realized in the early months of infancy when the child develops confidence that the primary care taker will be there when needed. As will be reviewed below there is evidence that a person who was subjected to considerable neglect or abuse as an infant is likely to experience a life time of interpersonal difficulties that are not going to be easily mediated.

Kagan (1996) argues that there is no conclusive empirical evidence that what is learned during the pre-self period is enduring, but there are numerous researchers and theorists from various orientations who propose that it is and that what is

internalized during these first twenty four months of life has or can have lasting impact on latter functioning (Bandura, 1963; Bauer, Hertsgaard, & Dow, 1994; Damasio, 1994; Dollard & Miller, 1950; Erikson, 1963; Kernberg, 1976, 1980; Piaget & Inhelder, 1969; Spiegler, 1983a, 1983b). Research in brain development indicates that the neurological structures upon which procedural learning and classical conditioning are dependent are relatively mature in the early months of life and that the brain system supporting explicit memory (the capacity to bring to mind an image or proposition) takes on an adult-like form between eight and twelve months (see Nelson, 1995). Although the "capacity to guide behavior by stored information is not fully mature by....2 years. . .and continues to grow perhaps at a slower rate into adulthood" (Goldman-Rakic, 1987, p. 616), it has nonetheless emerged. In other words the hardware is in place at a very early point in life to retain reactions, associations, and emotional memories but not explicit memories (Rovee-Collier, Earley, & Stafford, 1989). In deed the latter may be dependent upon the hippocampus becoming functional, a process that may not be complete until 18 to 36 months after birth (Jacobs & Nadel, 1985).

There is also evidence that infants learn and retain procedural and associative knowledge prior to the formulation of the sense of self (Meltzoff, 1988a, 1988b). Just to site a few

examples, Wishart (1986) has demonstrated that infants at 6 months and twelve months experience significantly improved performances on lower-level cognitive tasks after siblings modeled those tasks. This learning is retained by the observing siblings. There is also evidence that emotional memories, separate from explicit memories, are also being formed and retained (LeDoux, 1996). Infants with depressed mothers tend to exhibit both depressed behavioral and neurological anomalies similar to their mothers (Dawson, Klinger, Panagiotides, Hill & Spieker, 1992; Field, Healy, et al, 1988; Field, Fox, Pickens, & Nawrocki, 1995). Infants who experienced deprivation and social neglect in Romanian orphanages, have experienced numerous behavioral problems after being relocated in western countries (Holden, 1996). It can be argued that in each of these examples children are implicitly learning to function in their worlds and in doing so are learning patterns that can be cores for later behaviors. A recent longitudinal study (Newman, Caspi, Moffitt, & Silva, 1997) demonstrated that differences in the temperament of 3 year olds was related to adult interpersonal functioning. Individuals who were under-controlled as children had lower levels of adjustment and greater interpersonal conflict at age 21. This finding does not identify “. . .when or how these behavioral styles emerged” (Newman, et al., 1997, p. 215), but the effects of early interpersonal experiences cannot be

discounted. Raine, Brennan, & Mednick (1997) propose (based on records of 4,269 Danish males with histories of criminal offenses) that early maternal rejection coupled with birth complications predisposes males to adult violent behavior.

In summary, a young child encounters many experiences prior to the formation of the self. Given synaptogenesis which includes synaptic remodeling and synapse elimination that allows young children to adapt to the particularities of their surroundings (Rakic, 1985; Rakic, Bourgeois, Echenhoff, Zecevic, & Goldman-Rakic, 1986; Rakic, Bourgeois, & Goldman-Rakic, 1994; Huttenlocher, 1979; Wolff & Missler, 1993), these earlier experiences (and the child's responses) are crucial beginnings of ontological progression including the development of both subject and object self schemata. To an adult (or even to a child) the pre-self learning is impossible to identify, let alone verbalize (Howe & Courage, 1993). Nonetheless these pre-self experiences have a profound impact on a person's present relationship with the environment. Mahler and other object relation theorists have proposed these early experiences are the antecedents of later characteristics (and character pathology). I too believe this is a factor in personality disorders, especially with the borderline personality. Not having an objective self to connect memories to, pre-verbal, sensory, and to a large degree visual, they present impressions that are reflected in a borderline

adult's identity disturbance and affective instability.

Cognitive therapies' inconsistent and often poor results (Shea, et al., 1990) with character pathology in general, and borderline personality disorder in particular, reflects the treatment strategy's attempt to deal with the symptom pattern as if it reflected faulty, accessible thinking (Beck & Freeman, 1990).

#### Ideas and Abstractions

A fundamental postulate of cognitive therapy is that behavior and feelings are the product of a hierarchically organized structure of schemata which influence a person's responses to experiences. The term schemata is used to denote ideas, basic beliefs and rules (Beck & Freeman, 1990; Beck, et al., 1979). In a similar vein, Ellis (1994) promotes the view that rational and irrational beliefs determine how people respond to events. This is probably the most salient contribution of the cognitive movement and, as will be explored below, has powerful implications for therapy while also having certain limitations.

Human life is complex and so are individuals' impressions of the world and of themselves. To facilitate our relationships with our environments humans have evolved to form ideas based on their impressions. These ideas are what Kelly (1963,1955) defined as constructs and developmental psychologist (Derry, 1996; Piaget,1951) and cognitive psychologists today label schemata. Schemata can be relatively concrete such as the

concept of water, thumb, dog, rock, or sky. Many are abstract (love, time, causality, category, even the concept of "self"). A group of concrete schemata (different breeds of dogs) can be grouped together by using the abstract schema *category*. Doing so reflects a mental operation made possible because a person has first internalized representations of dogs and at some point the ability to categorize objects by realizing rules of categorizing.

Schemata also become very complex as many notions become organized around an earlier schema (see Derry 1996). One example is the self schema *I* with its multifaceted organization of concrete and abstract ideas about the self as thinker, viewer, and doer. After the concept of self is solidified in early childhood, a person continues to realize more and more about who he or she is and these notions in turn evolve, very intensely over the first eighteen years and continue to change throughout the remainder of a person's life (Erikson, 1963). Just one feature, the person's gender, is a powerful schema that from early childhood is realized as an important aspect of an individual's being and has a significant affect on awareness of who the self is (see Brooks-Gunn & Mathews, 1979).

Piaget (1951) proposed, as have later theorist (Derry, 1996; Gopnik & Meltzoff, 1996), that schemata are more than symbolic representations of objects and conditions that are mentally manipulated by various operations. Schemata take on personal

meanings, given the experience of an individual. A particular restaurant can have a negative association to a patron who ate there and got sick. Car sales persons are often perceived by others as dishonest and manipulative.

By this point it would seem evident that it is not enough for humans to form descriptive schemata of the world. To fit into their circumstances humans have had to develop the capacity to adapt by forming and processing complex notions regarding the nature of their environments. Piaget (1929) and later Klahr & Wallace, 1976\*\*\*; Schank & Abelson, 1977; Siegler, 1980, 1983a, 1983b; Wellman & Gelman, 1992) have investigated this issue and have proposed different theories regarding the development of such notions and the rules or operations that allow for new ways of behaving, thinking and understanding the world. Regardless of the differences, these theorists appear to propose that as a person matures, earlier schemata or representations are modified and combined developing new, higher level schemata as well as increasingly advanced rules or operational schemata. In summarizing Piaget (and basically summarizing the general view concerning the development of rules or dynamic schemata), Ginsburg & Opper (1969) note that by adolescence, given ". . . appropriate neurological development, a proper social environment, experience with things, and internal cognitive reorganization. . ." (p. 206) children have acquired ". . . a

large number of cognitive operations with which to attack problems" (p. 204). In other words, they have achieved a range of mental strategies or rules that give them adult-like thinking and the means of manipulating schemata thereby being able to solve challenging problems and to adapt to a range of situations.

Developmental researchers have explored these rules in relation to intellectual development. The most widely known investigator, Piaget, explored age specific understanding of space, the self, time, numbers, chance, and moral judgement (Piaget, 1928, 1929, 1952, 1965; Piaget & Inhelder, 1975) to name just a few of the many subjects he investigated. His paradigms used to measure childhood development are still employed (see Halford, 1989) while his theoretical principles are considered dated (Brainerd, 1996; Gopnik, 1996a). Although his explanations have been rejected including the conclusion that cognitive development occurs in a global stage specific manner, he nonetheless promoted a principle that is still accepted: A child's understanding of the world is quite different from an adult's and that an individual achieves mental mastery of his or her environment by acquiring progressively more adaptive operational schemata or rules. This is also true in the social realm. As quoted by Wertsch (1979), Vygotsky, a Russian contemporary and critic of Piaget wrote:

. . .any new form of cultural experience does not simply

come from outside, independently of the state of the organism at a give point in development. The fact is that the organism that is mastering external influences masters a number of forms of behavior or assimilates these forms depending on its level of mental development...these external materials are reprocessed and assimilated in the organism (p. 169)

To fit into their families and communities children have to adapt by realizing rules that secure a functional and predictable position in their social environment. In a healthy family of origin, the child adapts by evolving operational schemata that will assure as an adult a spontaneous pattern of thinking and behaving that assumes mastery of the culture. In a dysfunctional family of origin, an individual tends to develop operational schemata that permit the child to function in the family but which poorly prepares the person for acting in the general society. We especially see this with adults who, as children, were physically, emotionally, and sexually abused. These individuals, as adults, tend to respond to conflict, matters of intimacy, trust, and uncertainty with a mind set that perpetuates self-defeating patterns (Cole & Putnam, 1992; Fox & Gilbert, 1994; Johnson, 1995b). They will often misinterpret situations and, not knowing the rules, will respond in ways that cause others to become impatient, annoyed, or eventually rejecting of

them, if they themselves do not do the rejecting first (Alexander, 1992). This latter point is most likely true of individuals who were severely abused over a long duration of time and suffer posttraumatic stress disorder (Rodriguez, Ryan, Vande Kemp, & Foy, 1997). An example would be a woman who as a child was severely abused and in her marriage passively tolerates intolerable conditions. She sees no options for herself and exasperates friends with her chronic litany of woes, her excessive fears and insecurities, and her inability to grasp the choices that others point out that she has. This example illustrates forms of schemata referred to as assumptions, beliefs, and expectations in a booklet I published (Johnson, 1995a).

These notions are a distinctive form of operational schemata or rules that humans form that allow for a systematic sense of understanding, prediction and knowledge of their perceived options (given a situation and one's personal principles which are themselves another array of schemata). Assumptions or assumptive schemata are understandings regarding the nature of something. Beliefs are convictive schemata that reflect the conviction of something being true. Expectations are predictive schemata that are anticipatory and projective into the future.

These notions can also override or overpower the intellectual capabilities, mental operations, and social mastery

that a person has realized. A patient I once saw stated, "If I don't prepare for an earthquake, it won't happen." This individual was adult, intelligent, educated, and understood causality and was rather embarrassed to admit that she had such a belief. This patient was not psychotic but used this type of magical thinking to cope with a number of things she feared including earthquakes. She acknowledged that this thinking was irrational but said, "It works for me." With this statement she revealed an unverbilized belief schemata concerning her magical thinking which, if put into words, would be something like "pretending can protect me from bad things happening."

Often these assumptions, beliefs, and expectations are not so obvious to the person. Using the example of gender, a man may have realized a number of tacit notions regarding what it means to be a man. Two of these beliefs are *Because I am a man, I'm supposed to be strong* and *Because I am a man, I cannot cry*. These are not ideas that he has ever verbalized or seen in himself. He would even deny that he holds such *primitive* ideas. Yet these beliefs are inferred by his behavior following a tragic event.

This man is in an auto accident in which his girlfriend is killed. He is uninjured but stands dazed along the side of the road while the woman's body remains in what's left of his car. The paramedics arrive and attempt to rescue the woman who they

discover is already dead. One of the paramedics attends to the man. Passively he is lead to a police car where he sits while the firemen remove his girlfriend's body from the wreckage. Later he experiences shame realizing that "I stood there doing nothing" while others attempted to rescue the woman. After the accident he experiences a great deal of emotional pain which he attempts to hide from others. He becomes threatened when he feels that he is going to cry and succeeds at holding back his tears by quickly thinking of something else. Adding to his sense of shame is the humiliation he feels that the paramedic who helped him was a woman ("A *girl* a foot shorter than me!" he realizes). When friends see his distress and ask if he would like to talk, he replies that "It's private." He says this although there is so much he wants to get off his chest and knows that he needs to let go, but something inside holds him back.

Various researchers have investigated a number of salient notions that underlie our thinking and influence our functioning. Much of this is essential for adaptive functioning. Janoff-Bulman (1992) proposes that most people hold ". . .at the core of our assumptive world. . .abstract beliefs about ourselves, the external world, and the relationship between the two. More specifically. . .our three fundamental assumptions are:

"The world is benevolent

"The world is meaningful

"The self is worthy" (p. 6).

Janoff-Bulman and her associates have investigated how the impact of psychological trauma can disrupt an individual's ability to function by undermining these three assumptions that provide a person ". . .with the means for making sense of our world and for tackling new experiences with relative confidence" (p. 51). Once these assumptions are "shattered," the person experiences psychological turmoil as he or she is unable to accommodate the collapsed world-view and self-view with the implications of the destructive experience. Horowitz (1976) has provided empirical evidence supporting the position that schemata of the trauma remain in active memory storage until it can be assimilated and the fundamental schematic are modified or accommodated allowing information realized from the trauma and person's world and self views to be matched (i.e., become compatible). In my investigation of stress reactions to motion pictures (Johnson, 1981), empirical data was produced supporting this view.

Another underlying schema is a person's sense of controlling both one's life and the world around. Shapiro, Schwartz, & Astin (1996) examined what psychology has realized concerning this schema and note that "there is increasing agreement among both clinicians and researchers that control is one of the most critical variables involved in an individual's psychological

health and well being" (p. 1214). They present a biopsychological model of control that delineates matches and mismatches between a person's sense of control and the actual amount of control available to that person. Mismatches can lead to maladaptive coping such as in a situation where a person, who is physically ill and is required to be an active participant in the therapeutic process in order to recover avoids performing the assigned tasks believing that whatever he or she does will make no difference.

There are an inexhaustible number of beliefs, assumptions and expectations that an ordinary person realizes and uses to facilitate his functioning. In the booklet titled *Getting Unstuck: A Guide For Breaking Out of Self Defeating Patterns* (Johnson, 1995a) I identified examples of common schemata that are essential for adaptive living:

*"I have capabilities."*

*"People must have a common language to communicate."*

*"Physical pain means something may not be right with my body."*

*"Fire burns."*

*"People cannot hear my thoughts."*

*"Something is amiss for a person who is frowning."*

*"I need regular sleep."*

*"If I run a red light, I can be hit by cross traffic."*

*"Clothes must be worn in public."*

*"I must provide a safe place for my children."*

In this booklet there are also samples of dysfunctional assumptions, expectations, and beliefs which influence how some people respond to various situations. These include:

*"People are bad."*

*"I am always right."*

*"I'm not good enough."*

*"Life is a chore."*

*"Conflict is bad."*

*"When I feel, I'm out of control."*

*"Pain is bad."*

*"There is something wrong with me if things don't come easy."*

*"What I believe is always true."*

*"I can't learn."*

*"I can't change."*

#### Introspection

A underlying schema, common in the Western world is the belief that people are rational beings, who are conscious of their thinking, can subject the mind to introspection, and thereby discover their reasoning. Seeing why they have behaved in a way that was less than desirable, people can correct their thinking (Beck, 1976; Beck et al., 1979; Ellis, 1994; Ellis &

Harper, 1975) and their inappropriate behaviors. This is the phenomenological belief that people can, through reflection and introspection, realize their psychological processing and change their thinking. This schema has significant implications for psychotherapy, and, in so many words, is a tenant of CT. Beck and Freeman (1990) state that "the cognitive therapy view hold that the products of this process [core problems with faulting thinking] are largely in the realm of awareness...and that with special training, even more may be accessible to consciousness" (p. 5). In a similar vein Ellis (1994) argues:

Instead of these iB's [irrational Beliefs] being deeply hidden or repressed (as psychoanalytic theory holds) they are almost always just below the level of consciousness (in what Freud called preconscious thinking) and can fairly easily be brought to light if one uses REBT [Rational Emotive Behavior Therapy] theory to look for and reveal them (p. 204).

Introspection has a long and checkered past. Behaviorism rejected it altogether as not a suitable subject for empirical investigation and even relegated thinking as a epiphenomenal process that has no causal relationship to behavior (Skinner, 1953). The advance of cognitive psychology has made the investigation of mental processes in general and introspection specifically a matter of valid scientific study.

Nelson and his associates (Nelson, 1996; Nelson & Narens, 1994) have attempted to create a model that accounts for how a person can simultaneously think about something while reflecting on that thinking process. They propose a *Metacognitive Model* of consciousness that distinguishes between object-level and meta-level cognitions. Objective level cognitions are thoughts regarding the external world. Meta-level cognitions are cognitions about the objective level thinking (i.e., the concurrent mental examination of one's thinking about some external reality). Nelson (Nelson & Narens, 1994) propose that there can be more than one level of meta-level thinking. The first meta-level is the reflecting on one's thoughts about the objective world. The second meta-level are cognitions about the first meta-level. Another way of saying this is that the second meta-level is the reflection on how the mind functions when thinking about outside matters.

Examination of one's faulty thinking involves both first and second meta-level introspection. The problem is that there can be distorted monitoring on both levels. One can have a faulty thought about one's faulty thinking! A meta-level faulty thought is not as easy to see because in contrast to objective level thinking it cannot be subjected to the same types of reality testing. Folk psychology is based on an assumption that causes and reinforces faulty thinking about faulty thinking:

Phenomenological awareness and subjective experiences can tell a person about the functioning of his or her mind including the causes and nature of one's emotions (Arnold, 1960; Beck, 1976; Johnson-Laird and Oatley, 1992; Goldman, 1993). In cognitive therapy this is taken one step further: The monitoring of one's thoughts can be done accurately. Beck (1976) wrote, "The cognitive model of emotions is derived, initially, from reports of introspective observations of thoughts and feelings" (p. 53).

This type of introspection is not an objective process. Nelson and his associates have also compared phenomenological reports to observed behavioral criterion to study the accuracy of a person's assessment about their thinking process. Empirical studies demonstrate that there are often distortions (Caroll & Nelson, 1993; Mazzone & Nelson, 1995; Nelson, 1996). And as Nelson (1996) states,

[a person]. . . can be treated as an imperfect measuring device of his or her own cognitions, in which the individual's metacognitive monitoring is assumed to sometimes contain errors or distortions (called cognitive illusions, that occur in psychophysics when someone monitors an external stimulus, except here the monitoring is of an internal stimulus. . . . (P. 106).

Nisbett and Wilson (1977) demonstrated that the reasons that people give for their actions and feelings are subjective and

often inaccurate, especially when there is ambiguity regarding precipitating events. Gazzaniga and DeLoux (LeDoux, Smylie, Ruff, & Gazzaniga, 1980\*\*\*; Vlope, Ledoux, & Gazzaniga, 1979\*\*\*; Gazzaniga, LeDoux, & Wilson, 1977) in their study of split brain patients revealed that their subjects tended to have conviction of the accuracy of their introspections when in fact their explanations were incorrect accounts of their behavior and that the severed connections of the two hemispheres of their brains prevented the kinds of insights that the subjects thought they had. Ericsson and Simon (1993) provided strong evidence that patients can accurately give what Nelson would classify as object-level assessments but inaccurate meta-level explanation.

I propose that there are numerous reasons for these distortions and inaccuracies. These operational rules, assumptions, beliefs and expectations are not accessible for ready inspection because the person has lost (or never had) conscious awareness of them. A second meta-level error occurs when a person reflecting on their thinking process assumes that all their thoughts and mental processes are approachable by conscious reflection. Rogan and LeDoux (1996) noted how this view has often distorted the way that mental processes, from a psycho-neurological point of view, have been conceptualized:

A fundamental problem in studying the mind as a function of the brain is getting past the fact that we are often

consciously aware of the mental states that our own brain produces. This has historically led to the assumption that the study of the mind necessarily involves the study of consciousness (P. 469).

The study of the mind demands investigation into much more than what we can phenomenologically reconstruct.

### The Cognitive Unconscious

Whether an individual is a research physicist in Berkeley or a nomadic Bushman following the old ways in a remote region of South Africa, a person's world is complex. Actually the word complex seems to understate the situation: Each person's life experience is incredibly multifarious and built experience upon experience, ( Baddeley, 1992b; Damasio, 1994; Freeman, 1995; Piaget & Inhelder, 1969; Schank & Abelson, 1977). To efficiently function in their personal environments humans have to have more than the capacity to internalize the distinctive features of their worlds (physical, social, spiritual, and personal) and develop schemata that define and interpret these mental images. Humans also have a powerful internal mechanism, functioning at a level below consciousness, for interpreting and navigating each new but not particularly novel experience in relation to the mental image and the system of ideas. Baddeley (1992a, 1992b), from his studies of humans short term memory processing, proposed that executive functions exist that control this process.

Damasio (1996, 1994), on the basis of neurological studies, has formulated a *somatic marker* hypothesis to account for this process. Bargh and Chartrand (1999\*\*\*\*) give a review of a number of empirical studies that reveal the significant and critical role that unconscious or "automatic" mechanisms play in evaluation, motivation, social interaction, emotions, and goal oriented behavior. Shimamura \*\*\*\*\*

At any given moment almost everything a person knows and assumes is not in conscious awareness. Taking this a step further, fundamental impressions, ideas, beliefs and the intellectual structures that a person has realized have more often than not become invisible or have always been invisible. Operating in the background these constructs have powerful influences on decisions and behavior. Most people are unaware of these influences but are conscious instead of their logical thought processes. If confronted about particular questionable behaviors or choices, people will often give "good" reasons which may be honest but inaccurate rationalizations (Wegner & Wheatley, 1999\*\*\*). The "real" reasons are not as obvious and sometimes not as nice: What they did was strongly influenced and guided by unstated personal assumptions, reasonings, and beliefs of which they were unaware. The strength of this type of justification was examined by Tversky and Kahneman (1983) in their classic?\*\*\* study of intuitive heuristics and by Nickerson (1996) reviewing

studies of how observers, familiar with probability theory, can come to different answers regarding simple probabilistic situations and often argue the correctness of their answers, revealing tacit, unstated assumptions.

The reason for below conscious processing would be obvious to anyone who accepts a non-psychoanalytic mentalistic view of psychology. How can one act effectively if one had to consciously sort through all he knows to get through the myriad of daily tasks? To be aware of everything the person knows and to consciously and deliberately reflect and act before doing even the simplest task would be an extremely inefficient way to function. And yet things come to each of us automatically without effort after we have learned the ropes, so to speak. A number of studies demonstrate this in relation to quick memory tasks (Jacoby, Toth, & Yonelinas, 1993; Jacoby, Toth, Yonelinas, & Debnar, 1994) and in studies of goal motivated behavior (Bargh and Chartrand, 1999\*\*\*\*). We also see this process in the normal activities of daily living. Consider something as simple as a woman opening the front door of her house. She doesn't stop to consciously contemplate on the operation of unlocking the door or to ask herself, "Is this my house, is this my front door?" This is a structure of behavior and thinking that ego psychologists would identify as an automatization (Hartmann, 1958) whereby through ". . . exercise of the action [or a pattern of thinking]

its intermediate steps disappear from consciousness. . ." (p. 88) and the behavior and thinking become automatic. This gives her the ability to efficiently open her door and to know instantly her front door from all the other front doors in the neighborhood (even know her neighborhood from all other neighborhoods). This is done efficiently and unconsciously as the woman thinks about her kids or what her husband is planning for dinner.

Now suppose, as the woman is opening the door, she notices a dent in the door jam. She knows without conscious deliberation that the damage wasn't there before. There are other marks which have been there for a while, but this one is new to her. She instantly wonders which of her kids did it. She thinks of her youngest and his new tricycle and figures that he must have banged into the frame coming through the door. Right or wrong, she discovered the damage, assessed the situation and came to a conclusion almost instantly.

This example illustrates (1) passive visual recognition (discovering the new dent when not looking for it; see Freeman, 1995)), (2) tacit heuristic reasoning (immediately being aware of her son and his tricycle and deducing the cause; see Reber, 1993), and (3) automatic schematic processing (reasoning what happened; Shimamura\*\*\*\*; Demasio, 1996, 1994, Leventhal, 1987\*\*\*, 1984\*\*\*) which provide mental shortcuts to problem solving. Her noticing the nick in the first place may have been in part due to

her having been apprehensive about her son having the new toy and, even though she was not thinking about this at the moment, was nonconsciously more vigilant and motivated to notice evidence of damage. On some level of her mind she may have been on alert for anything that indicated that there was a problem. Again, not consciously thinking about this at the moment, but nonetheless something that she would acknowledge had been a concern since her son got his tricycle. The fact that she would notice something like this reveals how detailed and rich her mental image of her world is (Freeman, 1995) and the internal mechanism that makes it possible for her to focus and recognize the significance of something that would otherwise be passed over as trivial (Damasio, 1996, 1994).

Not just simple tasks occur without much, if any, conscious deliberation and seeking. Complex operations are also supported by this ability. In his investigation of creative people, Csikszentmihalyi observed that creativity is often enhanced by this unconscious process "during which ideas churn around below the threshold of consciousness" (Csikszentmihalyi, 1996, p. 79). Csikszentmihalyi goes on to note, "Even though subconscious thinking may not follow rational lines, it still follows patterns that were established during conscious learning." (p. 102).

The conclusion that I subscribe to is that we all take a lot of what we know and believe for granted. As we learn about the

world, develop notions about its nature, about how different things (and people) relate to us, figure out ways to interact with the world and its cast of characters and even as we discover things about ourselves, this knowledge and these notions gradually become internalized. They slip out of awareness (or mostly never developed in a conscious sphere as Piaget asserts regarding intellectual operations (See Piaget, 1972) and as more recent developmental psychologists propose (Gopnik & Meltzoff, 1996). As Gopnik (1996b) states:

The representations and rules may not have any special phenomenological mark, one way or the other, we may not know that we have them, though sometimes we do. They may be deeply influenced by information that comes from other people, but they are not merely conventional and they could function outside of any social community (p. 488).

In a sense these schemata and representations become yesterday's news, not forgotten but positioned in a very personal and dynamic store house of knowledge, perceptions and rules. Much of it can come back into consciousness either by deliberate reflection or spontaneous recall. However great portions, especially impressions which influence how we look at things, organize and hierarchialize knowledge, anticipate outcomes, assign values, make judgements, and define personal world views become invisible and can be very difficult to define. This has

been demonstrated empirically in recent studies of stereotyping (Banaji M. R. & Greenwald, A. G., 1995; Banaji, M. R. & Hardin, C.D ., 1996; Bargh, Chen, & Burrows, 1996) and reviewed concerning sexual harassment (Bargh & Raymond, 1995).

This position attributes to the unconscious tasks and functions quite different from the traditional psychoanalytic concept of the unconscious which cloaks the instinctive primary process and in which the ego defenses function to keep instinctual impulses repressed. (Freud, 1961). This is also different from Freud's concept of the preconscious, a nondynamic state for ideas that are "capable of becoming conscious at any time" (Freud, 1960, p. 4). While on the surface it is not incompatible with the ego psychologists' proposition of a "conflict free ego sphere" in which unconscious processes can be in the service of reality oriented adaptation (Hartmann, 1960), their concept is still rooted in the dynamic and economic points of view of psychoanalysis that "demands" that psychological forces and energy be part of the explanation of any psychological phenomenon (Rapaport & Gill 1959; Rapaport, 1967). The position presented in this paper also differs from object relations theory which, anchored in psychoanalytic theory, identifies in the unconscious an additional defense mechanism which ". . . protects the ego from conflicts by means of dissociating or actively keeping apart contradictory experiences of the self and of

significant others" (Kernberg, 1980, p. 6). Rather the cognitive unconscious, as Kihlstrom (1990) notes, is "kinder, gentler." than those in the psychoanalytic schools. It facilitates our fitting into our environments and supports our conscious efforts to adapt. As Epstein (1994) observes, this allows us two fundamentally different modes of processing information, "...one variously labeled intuitive, automatic, natural, nonverbal, narrative, and experiential, and the other analytical, deliberative, verbal, and rational." (p. 710)

To illustrate this bimodal cognitive system at work (and to appreciate the effort of the cognitive unconscious) consider the example of a fundamentalist Christian computer engineer and an agnostic paleontologist sharing their views about creation. There are obvious differences in points of view that they can instantly see and even understand about each other. It is very unlikely that either is going to shake the view of their opposite on this issue if each is a true believer of his or her respective position. If these are two respectful and polite individuals, they will probably keep their dialogue civil. (Usually one or both are not and an emotional and maligning exchange ensues). If both are reasonably open and intelligent, they can understand the respective belief principles of the other and even the other's epistemological point of view (the Bible as the word of God versus the principals of empirical investigation). This does not

mean knowing the other's view is going to change their own. One can imagine the paleontologist's reaction to the Christian theorizing that dinosaurs were not on Noah's Ark because they missed the boat. Each will probably go away thinking the other is way off base and is fooling himself. Each will likely have a negative emotional reaction to the episode and to the memory of the other person (despite a conscious disclaimer that the exchanged annoyed them).

In this example the conscious, rational thinking process is reflected in the arguments made by the agnostic and the Christian (Examples: "*The Bible states that God made the world in seven days;*" "*Carbon dating has proven that fossils of the ancestors of man are over a million years old.*") Their ability to understand the tenets of the other's position reflects this form of thinking as well. In this debate the cognitive unconscious is indirectly revealed by how they structure their arguments, in the firmness of their convictions, and the strong rejection of the other's arguments. These reflect un verbalized notions about reality underpinning the acceptance of the position that each person verbalized.

As I stated in the beginning of this section, humans have evolved this unconscious and powerful internal mechanism for efficient functioning. As a rule we do not question it or even realize that it exists. We know what we know. However, more

often than not, we do not understand how we have internalized notions throughout our life experiences and how we have developed different mental structures by which we reason and interpret ideas and events. It is more correct to say that we have different systems for explaining what we know rather than to say we have different knowledge. Here we get into the realm of tacit beliefs, assumptions and expectations that have developed in earlier years and are generally recalcitrant in adult life to external influence. These constructs are so much a part of a person's makeup and world view that they are not even taken for granted. They are invisible. Their existence is not really understood by a person unless he or she has committed to the process of deep, personal discovery (typically in our culture, long term psychotherapy) or by an event that causes us to question our thinking.

Take for example again the exchange between the fundamentalist Christian and the agnostic paleontologist. It sometimes happens in exchanges like this that a person can experience an unsettling feeling that troubles them and won't go away. Something was said by the other that cannot be ignored: A valid point which contradicts a tacit belief and causes a person to question one's thinking. A deliberate, distracting, and to a certain degree conscious process of examination occurs. The unsettling point may be eventually assimilated (Piaget, 19??\*\*\*).

Or the experience may cause a paradigm shift (Kuln, 1977) that results in a new alignment of underlying unconscious belief structures and a conscious awareness of being gained of nonconscious assumption.

This is not an original notion but was proposed by Piaget (1972) who stated that ". . .the cognitive unconscious consists of a set of structures and functionings ignored by the subject except for their results. . . If the self is conscious of the contents of its thought, it knows nothing of the structural and functional reasons which force it to think in this or that manner, in other words, of the intimate mechanism which directs thought" p. 33-34. While different mental processes are generally seen today (Gopnik, 1996a; Gopnik & Meltzoff, 1996), this position of the unconscious remains valid.

An interesting facet of this is reflected in the way most of us live quite comfortably with our personal inconsistencies reflected in contradictory logic and ways of thinking revealed in different aspects of our lives. If we look at the fundamentalist Christian computer engineer and the agnostic paleontologist, we can see examples of this. Although a fundamental Christian, the computer engineer is trained in the principals and methods of science which he applies to his work. The paleontologist has strong beliefs about maintaining the two hundred year old traditions of the university where he teaches and has made

impassioned speeches in the school's academic senate decrying the erosion of the institution's rituals. These reveal what Tambiah (1996) describes as "multiple orientations to the world."

Tambiah states that, without realizing it, "...we all participate in multiple orientations....Many orthodox and successful scientists participate within the framework of science only some of the time, when they enter and focus on the domain of scientific work" (p 48). Tambiah goes on to state:

I have tried to suggest that the so-called occult or magical thoughts and actions, which a powerful current of scientific rationalism has tried to push out or exclude as not consistent with rational thought, is not so alien to us moderns. It may have its excesses, but it is also a regular feature of our associational thought and of our establishing meaningful relationships and our achieving certain effects and outcomes. P 48.

How individuals interpret and respond to events without awareness of the ways in which invisible and nonobtrusive notions are influencing their perceptions, thinking, and behavior has profound social and clinical implications. In mental health, diagnostic personality disorders (American Psychiatric Association, 1994) are exaggerated examples of what we see, to one degree or another, of this process manifested in everyone; i.e., inflexibility, enduring ego- syntonic attitudes and

behaviors, and the occasional lapse of "judgement." (How many times have we heard someone say, to another after the second person has done something that was self-defeating or hurtful, "What were you thinking?")

The trouble is that people tend to deny or minimize the power of the cognitive unconscious and this tendency is reflected in Beck oriented CT and REBT (Beck, 1976; Beck, et al., 1979; Ellis, 1994). This tendency creates considerable difficulty. As a clinician I address this problem daily with individuals who present themselves as discouraged or overwhelmed, very often because their abilities to deal with the various difficulties in their lives are hampered by invisible notions. I also see couples and families whose members can point out the problems with the other(s) but do not see how their own invisible assumptions and beliefs are contributing to the relationships' difficulties. I agree with Bargh, Chen, & Burrows (1996) that such automatic behaviors and thinking can be "controlled or overridden" but to do so requires three things: "(a) awareness of the influence or at least the possibility of the influence [of the cognitive unconscious], (b) motivation to exert the control, and (c) enough attentional capacity (or lack of distractions) at the time to engage in the control process." p. 241. To promote a similar strategy and to educate patients I wrote the booklet *Getting Unstuck* (Johnson, 1995a).

I, as do many researchers (see Bargh and Chartrand, 1999\*\*\*), do not believe that the cognitive unconscious presents a problem in itself or creates a dilemma for us to function adaptively. In cognitive psychology the unconscious is seen as essential for healthy functioning which stands quite in contrast to the psychoanalytic unconscious which Freud inferred was "essentially a maladaptive system" (Epstein, 1994, p. 709). Of course, when one accepts the notion that so much of what we do is done automatically and without conscious awareness, it raises the question of to what degree we each have the ability to make choices. While it is not the purpose of this paper to draw philosophical conclusions, nonetheless, as Wertheimer (1972) points out, "psychologists cannot avoid taking at least implicit stands on. . . semiphilosophical issues" (p. 9). The conclusion that I draw is that each person acts with free will but perceives choices and options are not only limited to what the person knows and believes (consciously and unconsciously) but are unconsciously influenced, as stated before, by the "functional reasons which force. . . [the person] to think in this or that manner" (Piaget, 1972, p. 34). This is a blending of free will and determinism in a "heterodox middle-way position" (Sperry, 1993, p. 879). When there is congruency between the automatic (unconscious) and the deliberate (rational) modes of processing and the unconscious mode supports healthy and adaptive decisions,

this is a marvelously effective system.

#### Conclusion

While CT, REBT and other cognitive behavioral strategies have offered successful approaches for treating patients with various diagnoses and conditions, they are not universal psychotherapeutic elixirs. In this paper I've addressed a number of issues that counter some of the theoretical assumptions upon which these therapies anchor certain interventions. These presumptions I believe account for some of the therapeutic failures sited earlier. These are certainly not the only causes for the limitations. Just to site an example, in another paper (Johnson, 1998a) I presented neurological and psycho-biological research that provide strong evidence that not all emotional reactions are mediated by cognitions and that people have emotional memories of situations that are (1) separate from cognitive memories and (2) for which there are not always corresponding explicit thoughts to explain an emotional reaction to a stimulus. Seeing one's "irrational beliefs" would be impossible when there is no belief associated with that reaction.

From reading this paper, it is important that the reader not conclude that I'm promoting the view that cognitive oriented therapies are invalid. To the contrary, I think they represent an important contribution to the development of psychotherapy as an effective endeavor and I for one practice a form of cognitive

therapy (See Johnson, 1998b). At the same time it is important that clinicians respect that what we know about mental processes is limited, although our knowledge is growing at an impressive rate. In many ways we are where medicine was a hundred years ago. At that point physicians knew about bacteria but did not have a clue that viruses existed. They also knew about the importance of sterile operating conditions, had anesthetics, small pox vaccine, X ray photography and numerous other advancements, but were years away from antibiotics, MRI's, and the myriad of advancements that today we take for granted.

We need to accept that we are the pioneers of the application of a relatively new science. We need to be aware of developments (and controversies) in psychology and keep in mind that an advancement, having an important implication for the practice of psychotherapy, may be made in areas such as developmental, psychophysiology, linguistics, or perception which we tend to ignore once we're out of graduate school.

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