Schizophrenia, Criminal Insanity & Neuroses

Psycho-Bizarreness:
The Intuitive Rational-Choice Theory of Madness

The Fallen Empires of Psychoanalysis,
Medical Models and Drug Companies

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Introduction
The Need for a New Theory of Psychopathology

Fall of the Psychoanalytic Empire

Despite tremendous research and clinical efforts during the last century, the underlying causes of bizarre behaviors remain a mystery. These behaviors seem senseless, patients are unaware of the underlying causes of their behavioral change, severely disrupt their daily life, and may harshly damage the family, the community and the society in general. Three case studies may demonstrate the inadequacy of the traditional theories and the need for a new theory that focuses on the explanation of mad/bizarre behaviors. Two examples are Theodore John Kaczynski, the Unabomber, a professor of mathematics at the University of California, Berkeley (Graysmith, 1996), and John F. Nash, the Nobel Prize winning economist (Nasar, 1998), both of whom developed schizophrenia. While the former became a serial killer, the latter displayed completely different behaviors, which, although extremely bizarre, were not violent. A third example is William Ellery Leonard (1927), a poet, writer, and professor at the University of Wisconsin, who experienced an intense panic attack upon seeing a freight train from a distance, which subsequently left him unable to leave his home. What caused these three brilliant professors to display extreme bizarre behaviors that appear senseless which severely disrupted their daily lives? Why was the Unabomber's behavior radically different than that of Nash, despite the fact that both men suffered from the same "disease" and had similar IQ levels and academic backgrounds? Why did a freight train, in a very pastoral atmosphere, cause such an extreme level of anxiety? How could a senseless frightening experience from a specific stimulus evolve into agoraphobia?

Freud generously understood that these behaviors are bizarre and made this issue the focus of his psychoanalytic theory (see Searle, 1992; Shevrin & Dickman, 1980; Woody,
The moderate levels of bizarre behaviors in which there was no indication of detachment from reality, such as panic disorder, obsessive-compulsive disorder (OCD), conversion disorder, dissociative identity disorder (DID) and anorexia nervosa, were classified as nervosa. In contrast, the extreme levels of bizarre behaviors, where patients displayed severe distortion of reality, such as schizophrenia and bipolar disorder, were categorized as psychoses. The nature of these behaviors led Freud, in fact the entire scientific community in this field, to believe they are controlled by irrational mechanisms. Furthermore, since he could not find reasonable current factors that could justify the radical change in patients' behaviors, he assigned these behaviors to repressed childhood traumas or psychological conflicts, which under certain conditions trigger the unconscious to take over and ruin the individual's daily functioning.

Although Freud's theory was widely accepted and it prevailed for about a century, it eventually failed, primarily because numerous studies refuted the existence of repression (see reviews by McNally, Clancy, & Barrett, 2004; Piper, Lillevik, & Kritzer, 2008), the "cornerstone on which the whole structure of psychoanalysis rests" (Freud, 1914, p. 16). Contrary to Freud's assumption, these studies found that people remember their traumatic experiences. Nevertheless, psychoanalytic advocates continue to claim that repression does exist as some reported that trauma does impair memory (e.g., Brown, Schefflin, & Whitfield, 1999; Cheit, 1998; Chu, Frey, Ganzel & Matthews, 1999). This disagreement remained despite the fact that careful examination of later studies revealed that they faced serious methodological problems (e.g., see McNally, Clancy, & Barrett, 2004; Piper, Pope, & Borowiecki, 2000). As a last resort, Erdelyi (2006) claimed that Freud defined repression as a conscious, deliberate forgetting, which received significant empirical support. However,
researchers harshly criticized this conceptualization of repression. McNally (2006), for example, noted that by restricting repression to deliberate forgetting, Erdelyi "deprives it of its distinctive psychoanalytic character… Freud did not earn his reputation as a bold and original thinker by blandly affirming that people sometimes try not to think about unpleasant things" (p. 526; see also Bonanno, 2006; Crews, 2006; Kihlstrom, 2006; Macmillan, 2006).

In an attempt to resolve this theoretical conflict, Rofé (2008) reported that studies not only refuted Freud's claim that people have a tendency to forget trauma, but also questioned the validity of four additional components of the Freudian repression, each of which is necessary for the validity of this concept. These include: 1) the existence of an autonomous unconscious entity, which supposedly preserves the repressed traumas and controls the manifestation of the bizarre behaviors, 2) the assumption that repression has a pathogenic effect as it prevents a discharge of harmful tension and causes an inaccurate perception of reality, 3) the suggestion that a specific repressed childhood trauma is the cause of a specific neurotic disorder, and 4) the claim that the lifting of repression is a necessary condition for a genuine recovery. A thorough review of the literature reveals that none of the Freudian components of repression received empirical support. Accordingly, Rofé (2008) concluded that the, "Freudian notion of repression cannot be used as a scientific psychological concept, as its empirical status precludes this possibility" (p. 76).

The poor scientific state of psychoanalysis (see also Kihlstrom, 2015), and the lack of a better theory, reinforced the medical models' conviction that no psychological theory is capable to explain behavioral disorders. Accordingly, assuming that psychological problems are entirely the consequence of brain impairments, advocates of medical models dismiss the
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possibility that an alternative parsimonious explanation that would be able to explain bizarre behaviors by one set of theoretical concepts. As noted be Wakefield (1999),

A parsimonious theory of all such breakdowns is highly unlikely. Previous claims to have formulated general theories of the etiology of all mental disorders—from the sexual theory of the neuroses to irrational ideas to operant conditioning -- have consistently proven unsatisfactory and degenerated into ideologies masked as scientific theories (p. 969).

The Inadequacy of Medical Models and the Need for a New Theory

Although there is little doubt regarding the inadequacy of psychoanalysis, it would be a fundamental scientific mistake to altogether bury Freud's theoretical contributions. While it is true that Freud's theory failed, this does not disprove his basic idea, that is, bizarre behaviors share the same or similar etiology and needs to be explained by one set of theoretical principles. Since this idea is incompatible with disease models, as it is impossible that a variety of completely different symptoms would stem from the same neurological impairments, advocates of medical models were eager to eradicate Freud's concept of bizarreness. Accordingly, following the scientific deterioration of psychoanalysis and the increasing political power of the medical models in the American Psychiatric Association, advocates urgently took action to exclude the "troublesome" concept of neurosis from the DSM, without objectively examining the validity of this diagnostic category. The DSM's task force arrived at the conclusion, that "there is no group of conditions which together comprise the 'neurosis'" (APA, 1976, p. 11; see also Bayer & Spitzer, 1985). As a result, the DSM-III (APA, 1980) decided arbitrarily, without empirical examination, to exclude neurosis,
claiming that there are no operational criteria which would objectively separate these disorders from other behaviors (e.g., Bayer & Spitzer, 1985).

It may be worthwhile to indicate that the DSM's task force included only psychiatrists, many of whom worked in drug companies, which indicates a personal interest and theoretical bias in their decision making (Pilecki, Clegg, & McKay, 2011; see also Bayer & Spitzer, 1985). Although the DSM claimed to be theoretical, its categories were implicitly determined by medical models (e.g., Burstow, 2005; Follette & Houts, 1996; Pilecki et al., 2011). As a result, the DSM became "an expanding list of disease, from a few dozen disorders in the first edition to well over 200" (Grinker, 2010, p. 169), which "now contains three times as many disorders as it did in 1952, and it is more than seven times longer than the first edition" (Warelow & Holmes, 2011, p. 385). As will be specified later, the reinstatement of "neuroses", as a legitimate diagnostic category, is prerequisite for gaining a genuine understanding of behavioral disorders included in this category.

This book aims to demonstrate that we must remain faithful to Freud's parsimonious approach to psychopathology, despite the refutation of his theory. It will be demonstrated that medical models reached their scientific status, even with respect to schizophrenia, which became universally accepted during the last century as a brain disease, largely due to the weaknesses of psychological theories. Before presenting the new theory it is worthwhile to expose some of the fundamental problems that challenge the validity of these models. One major issue is the inability of these models to explain how the same neurological impairments can cause extreme differences of symptomatology even within the same behavioral disorder. For example, it is difficult to see how the same neurological defect can cause a large variety of completely different symptoms of conversion disorder, such as paralysis, blindness, epilepsy, or psychogenic movements (see review by Rofé & Rofé, 2013). In the same vein,
neurologists failed to clarify the neurological mechanisms that cause a large variety of schizophrenic symptoms, such as Nash's symptoms that had exceptionally clever symbolic meanings, the Unabomber's serial killings, and Jennifer Plowman's senseless disorganized speech (see Schwartz, 2000, pp. 370-411). Obviously, an alternative theory which would be able to explain these variabilities, both within each and across the disorders, that were classified by Freud as neuroses and psychoses, should be sufficient to overthrow the medical models.

The second major issue that challenges the validity of these models is the fact that often schizophrenic patients completely recover from their "neurological disease" purely by psychological interventions, such as Mr. X (Karon, 2008), the bestselling author Joanne Greenberg (I Never Promised You A Rose Garden), Catherine Penney, a mental health nurse (Broken Wings documentary by Daniel Mackler), and Carol, a 26-year college student (Bradshaw, 1998), without medications. Since neurological damages are irreversible, it is difficult to see how can these findings be accountable by the medical models? Again, a new theory that would be able to integrate therapeutic data obtained by a variety methods pertaining to bizarre behaviors, both neuroses and psychoses, would be more beneficial than traditional theories which failed to obtain this goal despite tremendous theoretical efforts (see Rofé, 2010).

The third fundamental problem of the medical models, and in fact all traditional theories of psychopathology, is their inability to integrate within their theoretical frameworks: 1) the dramatic increase in the prevalence of eating disorders (e.g., Leggatt, 2005; Lucas, Beard, O’Fallon & Kurland, 1991; Mitchell & Eckert, 1987; Willi, Giacometti & Limacher, 1990), and dissociative identity disorder (DID), including the inflation in number of alternative
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personalities which can reach up to 100, with an average of 15 personalities (e.g., Lilienfeld, Kirsch, Sarbin, Lynn, et al., 1999; Mai, 1995; Merskey, 1995; North, Ryall, Ricci & Wetzel, 1993); 2) the fact that these increases were restricted to the western societies and that westernization through mass media affected the increase rates of these disorders in the non-western countries (e.g., Bhadrinath, 1990; Keel & Klump, 2003; King, 1993; Pate, Pumariega, Hester, & Garner, 1992); and 3) data indicating that nearly all neurotic disorders are more prevalent among females, as opposed to schizophrenia, which is more prevalent among males (see review by Rofé, 2000, and findings reviewed in this book). Here too, a new theory which can resolve these problems should be preferable than rival approaches.

The fourth challenge concerns criminal insanity. The disease model of criminal insanity would have difficulty to explain data suggesting that these individuals have significant conscious control over their criminal acts. For example, it is difficult to see how medical models can integrate in their theoretical framework, data suggesting that serial killers, such as the Unabomber (Graysmith, 1996) and Charles Cullen, who killed at least 40 people by injecting them with overdoses of insulin (Yorker, Kizer, Lampe, Forrest et al., 2006), carefully planned their criminal actions (see Magid, 2009), as will be elaborated on later. An ideal theory of insanity would be more compelling if it would be able to integrate other types of horrible criminal acts as well, such as the Adam Peter Lanza (Derossett, 2013) and Elliot Rodger (Wikipedia, 2014) and Andreas Lubitz (Wikipedia, 2015) who murdered innocent people and then committed suicide. This book aims to demonstrate that not only these cases can be integrated within one theoretical framework and resolve the individual's conscious control over their behavior, but also show that they have the same etiology that causes non-violent bizarre behaviors.
Other challenging issues are the integration of cases of bizarre hostile cognitions, where patients do not carry out criminal acts but show patterns of hostile senseless thoughts, under one theoretical roof. This refers to obsessive neurosis, in which patients experience extreme obsessive hostile thoughts, such as those of a mother who confessed, "I’m having terrible thoughts about stabbing my children. (crying). That’s terrible - isn’t it? I’ve been having thoughts of hurting others too... I love my kids. How could I have these horrible thoughts of hurting them?" (McAndrew, 1989, p. 312, 316). Lewis (1981) noted, with regard to this disorder, that Freud was puzzled by the fact that while obsessive patients perceive their forbidden thoughts as "crazy", they remain powerless to stop them from penetrating the conscious:

In any rational system, knowing that ideas are crazy should be adequate to demolish them, but in the obsessional neurosis the patient's intellect is powerless to do more than observe his 'craziness' (p. 101).

The common characteristic of all the above cases is the display of behaviors or thoughts that appear nonsensical and unintentional. Obviously, a new theory which can accommodate all these behaviors into one theoretical framework would be more preferable than the medical models which automatically assume the existence of brain damage whenever an adequate explanation of these bizarre behaviors is lacking.

This book aims to challenge the validity of medical models. It intends to demonstrate that these medical theories reached their current scientific status not because of the strength of their data, but rather because of weaknesses of psychological theories. Its main objective is to show that a new theory, Psycho-bizarreness Theory (PBT) (Rofé, 2000), also called The Intuitive Rational-Choice Theory of Madness, can integrate research and clinical data
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pertaining to the development and treatment of both neuroses and psychoses, purely by psychological concepts. Thus, principally, this theory agrees with Freud's basic claim that bizarre behaviors, which he classified as neuroses and psychoses, share similar etiology. The conception of these behaviors as a brain disease is misleading and serves the interests of drug companies, whose drugs may cause serious damage to patients' cognitive and physiological system.

PBT proved its ability to integrate all therapeutic methods pertaining to neurosis into one theoretical framework (Rofé, 2010), explaining all data relevant to the development and treatment of conversion disorder, including neurological findings, which seemingly support the medical explanation of this disorder (Rofé & Rofé, 2013). PBT also resolves the theoretical confusion regarding the explanation of phobia by distinguishing between bizarre (e.g., agoraphobia, chocolate and chocolate phobia) and non-bizarre phobia, such as dog phobia (Rofé, 2015). Recently, PBT provided empirical diagnostic criteria for distinguishing between bizarre behaviors, consisting of both neuroses and psychoses, and none-bizarre behaviors (e.g., post stress traumatic disorder and animal phobias), which question the DSM's decision to exclude neuroses (Rofé, 2016).

PBT received relatively positive reviews in both Psychiatric Services (Sarma & Garfield, 2001) and Contemporary Psychology (Lester, 2002). This theory also received strong support by prominent psychologists (see http://yacovrofe.wixsite.com/psychobizarreness), including Robert Aumann, the Nobel Prize-winning economist, who in his letter of recommendation to publishers of the present book (2017), noted that "revolutionary as it sounds, [PBT] fits well into the frameworks of economics, game theory, and evolution".

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The Intuitive Rational-Choice Theory of Madness

This book consists of four major parts. **Part I** presents the major concepts of PBT: the diagnostic criteria of bizarre/mad behaviors, a new concept of repression, which in agreement with Freud, constitutes the major psychological function of bizarre behavior, and principals which guide individuals to adopt a specific mad behavior. Afterward, it examined the validity of this theory versus medical models, with regard to the explanation of schizophrenia, criminal insanity, and neurotic disorders. PBT's main argument is that all types of mad behaviors are rational coping mechanisms that relieve patients' emotional distress both because of the distractive/repressive value of the symptom and since it provides a significant control over their stressors. The stress may be the result of neurological impairments that prevent high-risk individuals from the ability to cope with everyday demands of life, or purely the consequence of psycho-social factors. Accordingly, inconsistent with medical models, case studies reviewed in Part I demonstrated that stress is the underlying causes of schizophrenia, criminal insanity and neuroses. A review of research and clinical data also show that antipsychotics are inadequate treatment, as they cause disastrous effects with little prospect for recovery. Damaging effects, such as weight gain and sexual dysfunction, were seen also in antidepressants with which neurotic patients are treated.

**Part II** presents the complex process by which patients become unaware of their conscious involvement in the adoption and maintenance of mad behaviors. The main argument is that people intuitively/unconsciously choose a specific mad behavior which they feel relieves their intolerable levels of emotional distress. Gut feelings that these behaviors effectively reduce the individual's emotional distress motivate some people to consciously implement this coping mechanism. Patients become unaware of their conscious involvement for acting bizarrely through various cognitive processes that disrupt the encoding of this
knowledge and memory inhibiting mechanisms that cause forgetfulness. Subsequently, utilizing their socially internalized beliefs regarding the causes of psychological disorders, patients develop a self-deceptive belief which attributes the cause of their symptoms to factors beyond their conscious control.

**Part III** aims to demonstrate that PBT's concepts, especially the new understanding of the complexity of the process by which unawareness is created, enables us to integrate therapies pertaining to neuroses and schizophrenia into one coherent theoretical framework. It also suggests a new therapeutic intervention, based on PBT's theoretical approach, which may facilitate therapy. The essence of this intervention is to induce awareness of faulty coping maneuvers which patients use and helps them develop more adequate coping mechanisms.

**Part IV** is a general discussion that summarizes PBT's main theoretical achievements and practical implications. Generally speaking, PBT proved its ability to integrate research and clinical data pertaining to the development and treatment of schizophrenia, criminal insanity and neuroses into one theoretical framework. It provides insight into the mechanisms of therapeutic change, and thereby makes significant therapeutic suggestions that may facilitate therapy.

In conclusion, this book continues Freud's vision that bizarre behaviors, comprising of both neuroses and psychoses, share similar etiology and should be accounted for by one set of theoretical concepts. However, the most important contribution of this book is clinical and research data indicating that schizophrenia is a rational coping mechanism, rather than a brain disease as has become universally accepted for more than a century.

Although the major target audiences are professionals in mental health, it also addresses scholars who are interested in understanding the mysteries surrounding this area. The book has an important message for the law system as well. The dominant conviction that people like the Unabomber, DID, and filicide mothers, who commit the most horrendous of crimes, could be "innocent due to
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"insanity" needs to be abandoned. These behaviors, like madness in general, are goal-oriented behaviors consciously adopted by people who are confronted with intolerable levels of stress. Accordingly, while their stressful conditions need to be taken into account, they should be punished similarly to sane criminals.
Part I

PBT vs. Medical Models:
An Empirical Confrontation
Theoretical Foundations of PBT

Diagnostic criteria of Madness

A necessary condition for promoting Freud's parsimonious approach of bizarre behaviors having similar etiology is to provide empirical criteria which can distinguish these behaviors from other behaviors. Accordingly, although PBT agrees with DSM that "classification should be based on shared phenomenological characteristics" (American Psychiatric Association, 1976, p.11), it claims, in agreement with other researchers (e.g., Pilecki, et al., 2011), that the DSM's decision to exclude the diagnostic category of neurosis is wrong. The DSM reached this decision because its classification of behavioral disorders was based only on a single criterion. A significant number of clinical and research evidence, which were available to the DSM's task force when this decision was made, as well as new study, indicates that bizarre/mad behaviors are multidimensional concepts that share five major and two secondary (Rofé, 2016b).

Major Criteria

1. A mad behavior intensively preoccupies individuals' attention and severely disrupts their daily functioning. For example, OCD is a time consuming disorder (more than one hour a day) and so it significantly interferes with the individual's daily functioning (American Psychiatric Association, 2000; Rofé, 2000, pp. 98-115). Likewise, 49% of eating disorder patients spend more than three hours each day on their eating disorder rituals and 16% of spend over 8 hours (Sunday, Halmi, & Einhorn, 1995). Similar data can be observed with
regard to all forms of neuroses and psychoses. Additionally, mad behaviors place a burden on the family, community, and on the society in general.

2. The patient displays dramatic behavioral changes in the absence of a specific event that has been unquestionably proven to be the cause of this shift. For example, a variety of compulsive rituals (Rachman & Hodgson, 1980; Samuels, Bienvenu, Riddle, Cullen, et al., 2002) and a variety of conversion symptoms (e.g., see Blanchard & Hersen, 1976; Brady & Lind, 1961; Fukunishi, Sugawara, Takayama, Makuuchi, et al., 2001; Griffiths & Ellis, 2007; Pruter, Kunert, & Hoff, 2001) occur in the absence of an event that is uniquely associated with or can account for these dramatic behavioral changes. In some cases, the onset may be gradual, such as conversion disorder (e.g., Akdemir&Ünal, 2006; American Psychiatric Association, 2000; Stone, Warlow, & Sharpe, 2012; Wittkower, Rodger, Scott, & Semeonoff, 1941) and anorexia nervosa, with which there is a progressive deterioration that it reaches a dramatic point of radical change. Here too, however, there is no observable event that is exclusively associated with or can account for the behavioral change.

Rival theoretical camps often report findings that seemingly indicate that a certain event is associated with and constitutes for the cause of a given behavioral disorder. Such evidence, however, violates the criterion of spontaneous onset only if the specific event has been unequivocally proven as a sufficient condition for the development of a specific disorder or exclusively associated with this disorder. To date, such proof has not been supplied for any of the neurotic or psychotic disorders.

3. The prevalence of mad behavioral disorders categorized by Freud as neurosis and psychosis is low, usually below 3%, as shown by the DSM (American Psychiatric Association, 2000).
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4. The individual is unaware of the underlying cause of the behavioral change.

5. Neurotic and psychotic behaviors are stigmatized as a reflection of physical mental illnesses. As noted by Carson, Butcher, and Coleman, "Almost by definition … abnormal behavior is behavior that is unintelligible to the vast majority of persons observing it" (1988, p. 17). Similarly, Bandura states, "the designation of behavior as pathological thus involves social judgments… Consequently, the appropriateness of symbolic, affective, or social responses to given situations constitutes one major criterion in labeling 'symptomatic' behavior" (1969, p. 3). The fact that the medical community classifies neurotic and psychotic behaviors as a form of mental illness (e.g., American Psychiatric Association, 2000; Merck Manual of Medical Information, 2000) indicates that it fulfills the above criterion.

Secondary Criteria

The two secondary criteria are depression and stress. These criteria should be used to exclude some exceptional deviant behaviors that seem to meet the five major criteria, but their onset is not related to stress or depression, such as autism. An additional option for using these criteria is when a behavior fulfills only four of the major criteria, such as criminal insanity, which the current diagnostic approach sometimes diagnoses as normal criminal behavior. As will be demonstrated, the two secondary criteria can help to avoid these incorrect diagnoses.

Differential Diagnosis

PBT's criteria enable us to distinguish between neuroses and psychoses. Although both meet all these criteria, the intensity of these criteria is stronger in psychoses. A new study, specified below, confirms that psychoses: 1) more intensively preoccupies the patient's attention; 2) have
lower prevalence rate; 3) not only are patients unaware of the underlying causes of their behaviors but often they are unaware that their behaviors are deviant, and 4) have a higher social stigma. Additionally, psychotic symptoms are qualitatively different from neurotic behaviors, as only psychotic patients display hallucinations, delusions and disorganized speech that meet the aforementioned criteria. Non-bizarre behaviors, such as phobias of dentists and dogs or post-traumatic stress disorder (PTSD), fulfill either none of PBT's five major criteria, or less than five.

In a further examination of PBT's diagnostic criteria, a new study was conducted. Fifteen psychiatrists and 50 clinical psychologists completed a questionnaire in which they were asked to evaluate a list of twelve randomly arranged deviant behaviors on the above criteria (see Rofé, 2016b). Findings revealed that neurosis and psychosis are the only disorders that meet all of the five criteria, compared to specific phobias which met none. Psychosis scores significantly higher on all of the five criteria compared with neurosis. PTSD meets only the first criterion.

As elaborated elsewhere (Rofé, 2016b), this diagnostic approach, which is based on substantial clinical and research evidence, is certainly better than the DSM's diagnostic approach, which was reached through a consensus of a group of experts that were theoretically biased toward the medical model and may have been motivated by personal interests (e.g., Burstow, 2005; Follette & Houts, 1996; Pilecki, et al., 2011). Most importantly, PBT's diagnostic criteria are strongly linked with a theory that accounts for both the etiology of relevant behaviors and the processes by which they are developed. As noted by Follette and Houts, (1996) "Without a theory categories proliferate, any atheoretical system will eventually
fall of its own weight as will classification systems that are based on inadequate theory" (p. 1122; see also Grinker, 2010; Pilecki et al., 2011).

**Repression**

Although studies refute the existence of Freudian repression, PBT agrees with Freud that repression is a key for understanding bizarre behaviors, provided that this concept is modified in accordance with Freud's (1915) original view that defined the essence of repression as "Turning something away and keeping it at a distance from the conscious" (p. 147). Additionally, as claimed by Erdelyi and Goldberg (1979), the unconscious was not a critical theme in Freud's original conception. "In his very earliest writings (e.g., Freud, 1894/1962) repression was treated as a potentially conscious mechanism… at least at times, repression is a 'conscious, deliberate act" (p. 365; see also Erdelyi, 2006). This statement is consistent with numerous laboratory studies which show that repression is nothing more than conscious distraction (see review by Holmes, 1974, 1990). Accordingly, PBT defines repression simply as a *distractive coping mechanism by which individuals eliminate threatening stimuli from attention through a deliberate employment of distractive means.*

The main advantage of this new definition of repression is that it immunized this concept from the aforementioned bulk of research, which refuted the five components of Freudian repression (e.g., McNally et al., 2004; Piper, Lillevik, & Kritzer, 2008; Rofé, 2008).

However, in order for repression to facilitate our understanding of madness, two additional modifications of the psychoanalytic doctrine of this concept must be made. First, according to PBT, repression in its new meaning can be beneficial in blocking the accessibility of stress-related thoughts, and thereby relieve the individual's tension, through socially accepted means of distraction, such as reading or participating in social activities. This claim is
consistent with a significant amount of research showing, contrary to the psychoanalytic doctrine, that among the non-clinical population, avoidance strategies of threatening stimuli have no pathogenic impact and may even have positive emotional and behavioral effects (see review by Rofé, 2008). Second, in sharp contrast to psychoanalysis, in PBT, repression is the consequence rather than the cause of madness. In other words, when facing stress that exceeds the individual's coping abilities, some people will deliberately choose mad behaviors that heavily occupy their attention to the extent that they become unaware of their stressor. Thus, when people encounter stress that exceeds their coping abilities, the behavioral options become limited. They can remain emotionally distressed, which is an extremely difficult choice, or select various modes of non-mad behaviors, such as substance abuse and aggression. Alternatively, a minority of subjects intuitively feel that a certain mad behavior is the best and least costly option. The patient's attention is so heavily preoccupied by the mad behavior, that it becomes inaccessible to stress-related thoughts.

While bizarre behaviors can generate unawareness of the stressor, this coping strategy would have little distractive value if patients remained aware of their conscious involvement in the adoption of these behaviors. As elaborated in Part II, PBT claims, following numerous studies on intuition that the choice of a specific symptom is intuitive and is made with little or no conscious awareness. Intuitive decisions are often made during stressful situations "when an in-depth analysis is not possible and the decision-maker must move quickly to a plausible solution" (Sayegh, Anthony, & Perrewe, 2004, p. 183). Individuals intuitively feel that a certain unusual behavior, suggested to them by current or past experiences, is the most efficient possible reaction for relieving their intolerable emotional distress. Consequently, some people will spontaneously adopt this behavior, which results in immediate emotional relief, largely
due to its high distractive/repressive value. Although the decision to implement the intuitive/unconscious choice is conscious, patients become unaware of the Knowledge of Self-Involvement (KSI) or the True Reason (TR) for acting bizarrely through a variety of cognitive processes that disrupt the encoding of this knowledge and a number of memory inhibiting mechanisms that cause its forgetfulness. Subsequently, utilizing their socially internalized beliefs regarding the causes of psychological disorders, patients develop a self-deceptive belief which attributes the cause of their symptoms to factors beyond their conscious control, and thus stabilizes the unawareness of KSI/TR (see Part II).

**Choice of Symptoms**

PBT claims that there is no difference between purchasing a specific product and the selection of a specific madness to cope with certain stresses. The choice of a specific mad behavior is determined by same three principles which guide the consumer's decision-making process when purchasing a certain product (e.g., see Wänke & Friese, 2005). The major principal is the need for the specific product/symptom, which in madness is controllability. The specific mad behavior must increase the patient's ability to exercise control over the stressor and/or provide certain desired privileges. For example, in times of war, soldiers are likely to adopt conversion disorders, such as paralysis, blindness or epilepsy, rather than anorexia nervosa. As noted by Dohrenwend and Dohrenwend (1969) regarding psychiatric symptoms developed by soldiers during World War II, “The patient's symptoms became his means to escape from further combat, and, not surprisingly, few recovered to the point where they could be returned to the front” (pp. 114-115). Similarly, as will be demonstrated later, people who suffer from a strong blow to
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their self-esteem and blame themselves for their failures to cope with life's demands, are likely to choose a mad behavior which can artificially inflates their self-esteem, rather than other types of madness.

The second guiding principle is availability, which indicates that the choice of a specific symptom is affected by various channels of information, such as the media, personal experiences, genetic predispositions, family and peers that increase the saliency of certain suitable behaviors (see Rofé, 2000). For example, clinical evidence suggests that subjects may utilize their current or past injuries or illnesses to develop a neurotic disorder that suit their coping needs, such as conversion disorder (Rofé, 2000; Rofé & Rofé, 2013). Many other examples demonstrating the crucial effect of this principal on the choice of symptoms, in both schizophrenia and neuroses, are reviewed in Part I.

The third principle is cost-benefit analysis, which states that a mad behavior may be chosen only if the individual intuitively feels that it will reduce the level of his or her emotional distress. For example, this principle can account for the fact that neurotic disorders are far more prevalent among women than men (see Rofé, 2000). Men avoid neurotic disorders, such as agoraphobia and conversion disorder, both because these behaviors increase the risk of unemployment, which is far more threatening to them (e.g. Artazcoz, Benach, Borrell & Cortes, 2004; Hammarstrom & Janlert, 2002; Loganathan & Murthy, 2011), and due to the lower social tolerance for weaknesses in men (e.g., see Eagly & Wood, 1991; Sanborn, 1990). Another example of this principle, to be elaborated upon in Part III, is studies indicating that increasing the cost of the symptom, motivates the patient to abandon this behavior (see also Rofé, 2010; Rofé & Rofé, 2013).
Rationality vs. Irrationality

PBT's claim that bizarre behaviors are rational is to some extent consistent with Freud's psychoanalytic theory. As noted by Herbert Simon (1978), the late cognitive psychologist and Nobel Prize-winning economist,

> It is perhaps…surprising to discover how pervasive assumptions of rationality are in psychoanalytic theory – confirming the suspicion that there is indeed method in madness…Almost all explanations of pathological behavior in the psychoanalytic literature…explain the patient's illness in terms of the functions it performs for him (p. 3).

However, the Freudian concept of rationality is different from PBT's suggestion. Freud viewed bizarre behaviors as irrational primarily because these behaviors are determined by historical childhood events, rather than the current reality. This is most prominent with regard to schizophrenia, where according to Freud the Ego, i.e., the individual's rational system that navigates the responses to reality, basically ceases to function. Nevertheless, Freud considered bizarre behaviors as rational, though he never used this term, as he viewed them as goal-directed behaviors that relieve patients' emotional distress. In contrast, according to PBT, bizarre behaviors are rational coping mechanisms as they are determined by current stressful demands, rather than by historical events, which usually are no longer relevant. The individual intuitively feels that a specific symptom can effectively serves his or her immediate psychological need. Moreover, the executive mechanism is the conscious, rather than the unconscious, which implements the intuitive choice after rapid cost-benefit analysis.

In this respect it may be important to note that studies from the field of economics indicate that when experiencing emotional distress, the choice of a specific product is determined by the
individual's immediate needs to relive tension, rather than by long-term considerations (Shiv & Fedorikhin, 1999, 2002). Thus, given the extreme emotional distress to which neurotics and psychotics are subjected prior to the adoption of these behaviors, these behaviors are quite rational to the extent that they serve patients' repressive and controllability demands. Additionally, rationality must be defined not in terms of optimum solution, but rather within the boundaries determined by information available to individuals at the decision-making stage, together with psycho-physiological and environmental constraints (e.g., Aumann, 2006; March 1978; Simon, 1955, 1956).

As noted by Aumann (2016), in his letter of recommendation to editors, PBT "fits in very well with the concept of rationality as understood in economics, where a person's behavior is considered "rational" if it under his circumstances, it advances his goals". PBT's idea of rationality is consistent with game theory, in which an optimal rational choice worsens the individual's life conditions, as illustrated in the prisoner's dilemma (e.g., Axelrod, 1980; Hofbauer & Sigmund, 1998).

Reassessment of Medical Models

Theoretical Considerations

German psychiatrists, Arnold Pick (1851-1924) and then Emil Kraepelin (1856–1926) promoted the conception of schizophrenia as a brain disease. Although Freud and his followers (e.g., see Karon, 2008; Robbins, 2002; Silver, 2008) defied this conceptualization, psychoanalysis failed in their struggle against this approach (e.g., Willick, 2002), especially because of its inability to address the genetic-neurological findings, which seemingly support
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the medical models. However, evidence reviewed in Part I indicates that the disease conception of schizophrenia became universally accepted not because the strength of data, but rather because of the weaknesses of psychological theories. Reexamination of the overall findings suggests that medical models reached to a wrong conclusion regarding the etiology of schizophrenia because of an inadequate theoretical interpretation of the relevant data and improper methodological research.

Theoretically, proponents of these models interpreted the correlational studies showing that these patients suffer from neurological impairments as evidence that schizophrenia bizarre behaviors, such as of hallucinations, delusions and disorganized speech, is a direct result of adverse neurochemical changes (e.g., Keshava, Diwadkar, Montrose, Rajarethinam et al., 2005; Nuechterlein, Subotnik, Ventura, Green et al., 2012; Schiffman, Maeda, Hayashi, Michelsen et al., 2005; Tandon, Keshavan, & Nasrallah, 2008). An alternative explanation, which was not considered up to now due to the absence of PBT, is that the neurological impairments result in a handicap personality which exposes these individuals to an extreme level of stress. As elaborate on later, these subjects are characterized by severe attentional deficits, low cognitive abilities and poor social skills, which makes their life extremely difficult. Consequently, they are likely to experience a profound sense of incompetence, where the self is perceived as the core of their miserable situation. Inevitably, an extreme damage to one's self-esteem causes an intolerable level of depression. While some choose to commit suicide, which is quite high among these individuals (e.g., Balhara & Verma, 2012; Bilge, Handan, Rumeysa, & Alp, 2015), many prefer the schizophrenic symptoms, mainly because they enable them to block the accessibility of stress-related thoughts (repression). Examples of the repressive function of schizophrenia are illustrated in the following extracts from two patients:
I start thinking or talking about something but I never get there. Instead, I wander off in the wrong direction and get caught up with all sorts of different things…people listening to me get more lost than I do…

My trouble is that I’ve got too many thoughts. You might think about something, let’s say that ashtray…but I would think of it and then I would think of a dozen different things connected with it at the same time (McGhie & Chapman, 1961, p. 106).

This theoretical position that the major function of schizophrenic symptoms is distraction/repression is consistent with Mendick’s (1958; see also Mendick & Schulsinger, 1968) claim that the schizophrenics' intentional exacerbation of their fragmental thinking comprises a set of conditioning avoidance that enables them to escape anxiety by switching to irrelevant thoughts.

The schizophrenic symptoms are effective also because they allow patients to overcome their deep sense of incompetence by artificially inflating their self-esteem or by attributing the cause for these frustrating emotional experiences to external sources or by falsely inflating their self-esteem through delusions or hallucinations. Patients with lower cognitive level relieve their depression by disrupting their thinking processes through disorganized speech that prevent the accessibility of stress-related thoughts.

Thus, unlike psychoanalysis, PBT fully acknowledges that schizophrenia is strongly linked with neurological impairments. It only objects the medical model's interpretation of these findings that schizophrenic bizarre behaviors are the direct result of adverse neurochemical changes, as physical diseases, such as Alzheimer or Parkinson diseases. Instead, it claims that schizophrenia is a coping mechanism, which individuals adopt in response to extreme level of stress that is largely a direct result of these impairments.
Methodological Considerations

The second major problem, which challenges the validity of the disease model of schizophrenia, concerns the method by which this issue was traditionally investigated. The notion of disease was based mainly on correlational studies, where conclusions derived from these studies were automatically generalized to all cases of schizophrenia, even when there was no evidence for genetic/neurological flaws. Given the weaknesses of psychological theories, which could not adequately explain these cases and integrate findings of neurological/genetic defects in their theoretical framework, researchers took for granted that these cases were also suffer from brain impairments (e.g., Amador & Paul-Odoard, 2000; Nasar, 1998). However, not only medical models did not verify this assumption, but as will be demonstrated later, PBT is the only theory that can explain the underlying mechanism of schizophrenic symptoms in these cases. Moreover, as will be demonstrate we can get a better insight into the underlying causes of schizophrenia by first investigating case studies with no evidence of genetic/neurological flaws and then generalizing this understanding to the controlled studies, rather than vice versa as was traditionally conducted by advocates of these medical.

From the standpoint of medical models the nature of the specific schizophrenic symptoms are meaningless for the understanding the underlying cause of this disorder, as are in Alzheimer and Parkinson diseases. In contrast, according to PBT, which continues Freud's framework of thinking in this matter, these symptoms, and in fact all types of bizarre behaviors, are goal-directed behaviors that often have symbolic meanings, which their understanding may be crucially important for the comprehension of the underlying motivation of the patients' symptoms. To the extent that PBT's assumption in this regard is
correct, controlled study may lead to misleading understanding of these cases. In contest, case study can provide an invaluable insight into the underlying mechanisms of these behaviors by analyzing the unique circumstances of each case that led to the development of a specific symptom. While many evidence reviewed later support of this claim, two examples may be useful to demonstrate this issue. One example is John Nash's delusion that he is "the left foot of God" and the second is the Unabomber's serial killings which were associated with his delusion regarding the corruption of the industrial society. In the absence of PBT, critical issues in these cases would remain mystery, such as why there are so extreme behavioral differences between these two patients, despite the fact that both have the same "illness", and why each developed these rather than other symptoms. The psychological mechanisms that motivate these bizarre behaviors may be so complex that only case studies may shed light on the understanding this phenomenon. As noted by Zaidah (2007),

> The detailed qualitative accounts often produced in case studies not only help to explore or describe the data in real-life environment, but also help to explain the complexities of real-life situations, which may not be captured through experimental and survey research. (p. 4; see also Bowers & Farvolden, 1996; Brewin & Andrews, 1997).

Thus, case study is especially important in the understanding schizophrenia not only because in many cases there is no evidence of genetic or neurological flaws, but mainly because of the complexity of this phenomenon. As theorized above, the examination of these cases may not only refute the universally accepted belief that also in these cases schizophrenic bizarre behaviors are a direct result of brain disease, but challenge this theoretical position also in cases where there is clear-cut data of neurological impairments.
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Theoretical Goals
In order to challenge the validity of the schizophrenic disease model and demonstrate the superiority of PBT, the two theoretical approaches will be compared on a number of cardinal issues, which their resolution seem critical for a genuine understanding of this disorder and madness in general.

1. Diagnostic Criteria: If schizophrenia is indeed a neurological disease, rather than a mad behavior, one would expect, after so many years of research, that medical models would have found neurochemical diagnostic measures for this disorder. At the very least, there should be no common diagnostic characteristics between schizophrenia, criminal insanity, and neurotic disorders any more than between schizophrenia and neurological diseases, such as Parkinson Alzheimer's disease. However, not only did medical models not succeed in identifying neurological diagnostic criteria, but PBT's diagnostic measures, which are purely psychological, are common to all types of mad behaviors and are able to differentiate these behaviors from other deviant behaviors. Moreover, these criteria can more accurately diagnose ambiguous cases of mad behaviors than the current diagnostic system, as will be demonstrated later in reference to two case studies (Mordechai Vanunu and Roni Leibovitch).

2. Etiology of Madness: The second cardinal theoretical goal is to reevaluate the underlying causes of schizophrenia and other types of mad behaviors, based on the same types of data used by medical models. Employing the new research strategy, namely focusing first on the explanation of case studies with no evidence of neurological impairments and then generalizing conclusions driven from these cases to cases where there is clear evidence for neurological impairments, it will be possible to (1) demonstrate PBT's claim that all mad behaviors, including schizophrenia, are coping mechanisms adopted in response to an
unbearable level of stress; (2) challenge the disease model of madness claiming that schizophrenia and neuroses are the consequence of neurological impairments.

3. Individual Differences in Symptomatology: PBT's third theoretical goal is to explain the marked individual differences in symptomatology (e.g., The Unabomber vs. John Nash). As stated above, up to now this issue was completely overlooked by medical models as no psychological theory could challenge the validity of their theoretical suggestions. Moreover, in the absence of PBT, the lack of adequate answers for this and other challenging issues would not bother these models, as advocates would use the slogan that the brain functioning is so complicated that we do not yet know all the answers. As noted by Wakefield (1999), one of the strongest supporters of the medical models,

Mental functioning is an aspect of brain functioning, and the brain operates on many functional levels from the biochemical...to neuroanatomical...to the representational level involving mental functions...Thus, one would expect that there are an enormous number of different ways such functioning can go wrong to yield 'problems at the mental level (p. 969).

Case studies enable PBT to enter this theoretical vacuum, provide reasonable explanation, and thereby expose the spurious scientific status of the medical models.

4. Major Psychological Functions of Madness: The forth theoretical goal concerns the question of whether mad behaviors serve the patients' psychological needs. From the point of view of medical models, none of the bizarre symptoms of these patients, certainly those of schizophrenics, have any psychological value. These are negative behaviors, like Parkinson, Alzheimer's disease and Epileptic symptoms. In contrast, from the standpoint of PBT, mad behaviors, including schizophrenia, serve important psychological needs, which are extremely
important in reducing patients' intolerable levels of emotional distress. The major psychological function of these behaviors is repression, and the specific symptom in each case is determined by the patient's need to exercise control over their stressor and by the principles of availability and cost-benefit analysis.

5. **Freud's Parsimonious Principle:** As stated above, medical models reject Freud's parsimonious principle. From the standpoint of these models, there should be no common components between schizophrenia and these disorders, except that all are diseases that occur as a result of neurological impairments (e.g., see Wakefield, 1999). In contrast, PBT fully agrees with Freud in this matter, and claims that all mad behaviors need to be explained by the same sets of theoretical concepts. Thus, from the standpoint of PBT, schizophrenia is one variety of bizarre behaviors that share the same diagnostic criteria, have similar etiology and the specific symptoms are coping mechanisms that serve the individual psychological needs.

6. **Effects of Socio-Cultures Factors:** As stated above, medical models, and in fact all traditional theories of psychopathology lack adequate concepts that can explain variabilities of mad behaviors as a result of socio-cultural factors. PBT's principles of availability and cost-benefit analysis can integrate this data within its theoretical framework.

7. **Therapy:** Initially the goal was to discuss the issue of therapy solely in Part III, and demonstrate that all therapeutic methods pertaining to schizophrenia and neurotic disorders can be integrated into PBT's theoretical framework. However, since medical models gained their respected scientific reputation due to their widespread conviction that drug therapy is the best intervention, as opposed to psychoanalysis, which is usually considered useless, it seems that these two therapies should be discussed in Part I. Thus, it is important to disclose the limited efficacy of drug therapy, along with the terrible consequences that they may cause to
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the individual's physiological and psychological systems, and thereby further undermine the validity of these models. Additionally, by providing alternative explanations for the fact that psychoanalysis may sometimes result in a complete cure, it will not only reveal once again the problematic state of medical models, but will strengthen the position of PBT even more.

Hypotheses

Based on the above discussion and PBT's theoretical foundations, it can hypothesize that:

1) Schizophrenia, criminal insanity and neuroses meet PBT's five major criteria of bizarreness. In some cases bizarre behaviors may be misdiagnosed due to the lack of one of the five criteria. In these cases, the deviant behavior should be diagnosed as bizarre if it meets the two secondary criteria as well.

2) All types of bizarre/mad behaviors are a response to stress, and the major psychological function of these behaviors is repression.

3) The choice of schizophrenic symptoms, as well as other types of bizarre behaviors, is determined by PBT's three principles of choice of symptoms. This means that the specific symptom: 1) must reinforce the individual's controllability to reduce the stressor; 2) is determined by the patient's available experiences; and 3) will be adopted only if the benefit exceeds the cost, namely if it alleviates the individual's emotional state.

4) At this preliminary stage of investigation, it is difficult to determine the types of stress that motivate individuals to choose schizophrenia or other types of mad behaviors. However, based on clinical evidence to be reviewed later, it seems that usually
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schizophrenia, and often criminal insanity, develops when individuals experience a profound sense of incompetence that severely damages their self-esteem. In contrast, neuroses usually develop in response to environmental stress or unacceptable impulses.

5) The prevalence of the bizarre behaviors among different social groups is affected by PBT's principles of cost-benefits and availability.

6) Given PBT's assumption that schizophrenia is a coping mechanism rather than brain disease, it seems that while drugs may temporary reduce the patient's emotional distress, the chemical substances may cause great harm.

7) Although usually psychoanalysis is unhelpful and may increase the risk of suicide, it may sometime results in complete recovery if it successfully removes the current stressor. This type of data challenges the validity of medical models, as patients recover from their "brain disease" without medications.

Outline of Data Presentation

Data presented in Part I can be organized in three major categories: 1) Case studies of schizophrenia and criminal insanity with no evidence of genetic or neuroglial flaws. This evidence should seriously questions the widely accepted belief that schizophrenia and criminal insanity are the consequence of brain damages both because of the lack of data that patients suffered from genetic/neurological diseases and since only PBT can adequately explains the variability of symptoms in these cases; 2) Reinterpretation of data which seemingly support the medical models in accordance with PBT. This includes new conception
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of the significant relationship between schizophrenia and genetic/neurological flaws, studies relating to hallucinations and findings regarding the therapeutic/damaging effects of drugs; 3) Data supporting PBT's parsimonious explanation of bizarre behaviors. As noted above, medical models were eager to exclude the concept of neuroses from the DSM and undermine the possibility that alternative theory other than psychoanalysis would be able to explain neuroses and other bizarre behaviors by one set of theoretical concepts. Evidence of such type would severely damage the scientific status of medical models as it is impossible that a variety of behaviors with completely different symptoms would have similar etiology. Thus, data supporting PBT's claim that neuroses, schizophrenia and criminal insanity result from stress and that the specific symptoms in these disorders are goal-directed behaviors are strong evidence, even more than the aforementioned two types of data, against the medical models.

Schizophrenia and Criminal Insanity

With No Evidence of Brain Impairments

With exception of Miss. Y.'s case, who is currently under the author's treatment, this section addresses case studies of schizophrenia and criminal insanity that received publicity in the media and research literature. As will be demonstrated all these cases fulfill PBT's diagnostic criteria of bizarre behaviors and are explainable by one set of theoretical concepts suggested by this theory. These cases include the Unabomber, John Nash, Charles Cullen, a hospital nurse, who confessed murdering as many as 40 patients over 16 years by injecting them with overdoses of insulin (Yorker et al., 2006; Wikipedia), Mordechai Vanunu, an Israeli citizen who in 1986 revealed top secret information regarding Israeli nuclear capabilities and was subsequently sentenced to 18 years in prison (see biographical account by Toscano, 1991); Percy King (White,
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1964) a paranoid schizophrenic, who was hospitalized for twenty-eight years; and Mr. X (Karon, 2008), a schizophrenic patient who completely recovered from his behavioral disorder by psychoanalytic therapy. Two additional cases of criminal insanity are Adam Peter Lanza (Derossett, 2013) and Elliot Rodger (Wikipedia, 2014), who murdered innocent people and then committed suicide.

1. The Unabomer--The Genius Schizophrenic Serial Killer: The first example of mad behavior with no evidence of genetic predisposition for madness or neurological impairments is Theodore John Kaczynski, the Unabomer, who had an IQ of 170 and was a professor of mathematics at the University of California, Berkeley. In 1971, at the age of 29, he resigned from the university, moved to a remote cabin with no electricity or running water and began living a hermetic lifestyle. Between 1978 and 1995, Kaczynski mailed bombs to various locations, including to universities and airlines, killing three and injuring 23. Kaczynski sent a letter to the New York Times on April 24, 1995, and promised to desist from the bombings he claimed were necessary to attract attention to the erosion of the human freedom caused by modern technologies. The Unabomer was diagnosed with paranoid schizophrenia, and although he could have pleaded insanity, and thus avoid the death penalty, he vigorously resisted this option. He unsuccessfully tried to fire his court-appointed lawyers who did not adhere to his seemingly irrational request (Graysmith, 1996).

Amador and Paul-Odoard (2000), based on evidence that schizophrenics typically deny their illness, as well as studies indicating that poor insight is linked to frontal lobe dysfunction, arrived at the conclusion that the Unabomer must have suffered from brain damage. Not only is there no direct evidence to support this claim, the authors also overlooked factors mentioned by other researchers as possible causes for the Unabomer's behavior. These include: 1) Severe
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lack of social competence caused by inadequate socialization; 2) Inability to communicate with females, which according to his confession caused an "Acute sexual starvation;" and 3) A deep sense of inferiority and severe levels of depression (e.g., Leeper, Carwile, & Huber, 2002; Magid, 2009; Zuk & Zuk, 2000). Furthermore, denial is not limited to schizophrenia, but is also seen in neurotic disorders, such as anorexia nervosa (e.g., Bruch, 1978; Gottheil, Backup, & Corneilson, 1969; Vandereycken, 2006a), and certain forms of obsessive-compulsive disorder (OCD) (e.g., compulsive cleaners, see Foa, 1979; Kozak & Foa, 1994; Rachman & Hodgson, 1980). Yet, as with the Unabomber, no evidence has been presented that these patients suffer from brain disease. Moreover, as demonstrated in details elsewhere (Rofé, 2000, 2010, 2016), and will be discussed here as well, the phenomenon of denial can be explained by rational processes and more parsimonious concepts.

An additional fundamental problem that is unexplainable by medical models concerns the variability of the symptoms. Even if they would be able to demonstrate neurological impairments, Amador and Paul-Odoard still would have been required to explain which specific impairment could cause the Unabomber's delusion regarding the corruption of the industrial society and his criminal inanity. It seems unlikely that such complicated behaviors could have been caused by neurological impairments, which led Magid (2009) to claim that Kaczynski's transformation into the Unabomber resulted from "conscious choices" rather than from a brain disorder. "Kaczynski extensively planned, prepared, and pondered before engaging in specific attacks, suggesting heightened culpability. His crime was the product of careful deliberation, not uncontrollable impulse or delusion" (p. 20). However, while it is not easy to dismiss evidence suggesting that Kaczynski's criminal behaviors was fully intentional, it is equally difficult to accept Magid's claim that these actions were normal criminal behavior.
Conscious deliberate behavior also characterizes other bizarre criminal incidences, such as Charles Cullen, a hospital nurse who confessed to murdering as many as 40 patients over 16 years by injecting them with overdoses of insulin (Yorker, Kizer, Lampe, Forrest et al., 2006), to be discussed later. Yet, these behaviors seem senseless which requires different explanations than common criminal acts. It seems that PBT provides the most adequate explanation of the Unabomber's case, and that it is consistent with the above five hypotheses.

**First,** unlike medical models, which lack objective criteria to classify this case as a mental illness, **PBT's five diagnostic criteria** enable us to diagnose it as psychosis. The Unabomber's delusion and his criminal behaviors intensively preoccupied his attention and severely disrupted his daily functioning (criterion 1); The onset of his radical behavioral change was in the absence of a specific observable event that is uniquely associated with and can accounts for this effect (criterion 2); Not only was the patient unaware of the underlying cause of his behavior but he was also unaware that his behavior was abnormal (criterion 3); His delusion and criminal behaviors are extremely rare (criterion 4); His behavior was stigmatized as crazy or reflection of illness by psychiatric diagnostic system (criterion 5).

**Second,** this case also confirms PBT's second hypothesis that mad behaviors **develop in response to stress.** Clinical observations indicate that the Unabomber was extremely lonely, which was mainly the result of poor social skills. Dr. Sally C. Johnson, who diagnosed him with paranoid schizophrenia, cited "an almost total absence of interpersonal relationships". Although he gained impressive academic success, he was, in fact, a miserable person. Due to his notable deficit in social skills, he could not maintain a functioning relationship with members of the opposite sex or satisfy his intense sexual desires, leaving him in a constant state of frustration. While genetic factors may be involved in affecting personality tendencies (e.g., Horwitz, Luong, & Charles, 2008; Kandler, 2013; Lukaszewski & Roney, 2013), it seems that the major variable behind the
development of the Unabomber's handicapped personality was his social environment. His mother fixated on the advancement of his intellectual abilities while neglecting to promote development of his social skills. The Unabomber and his brother were not seen outside playing with other children, as their mother kept them inside and encouraged them to study (Leeper et al., 2002). "His parents focused on developing his intellectual and academic abilities at the expense of normal childhood… By the age eight or nine, it was apparent that Kaczynski was not socially accepted by other children of his age. Moreover, his family relocated several times, only compounding the problem" (Magid, 2009, p. 7). Often, schools compensate for parents' mistakes in this respect as they provide a social environment where the individuals can develop adequate social skills. However, the Unabomber missed these social opportunities because his school allowed him to skip the sixth and eleventh grade without taking into consideration the severe negative impact this would have on his social development. Thus, he was deprived of the opportunity to acquire adequate social skills at school and instead learned with much older students who had no interest in him, especially when he was enrolled at Harvard University at the young age of 16. He experienced a deep sense of inferiority and severe levels of depression (e.g., Leeper, Carwile, & Huber, 2002; Magid, 2009; Zuk & Zuk, 2000).

Hence, in terms of social competence, he was a "complete failure," and as revealed by various research (e.g., Uhrlass, Schofield, & Cole, 2009; Williams & Galliher, 2006; Zaitsoff, Fehon, & Grilo, 2009), and case studies (e.g., Derossett, 2013; Rodger, 2014), this factor can severely damage one's self-esteem, lead to depression, and often precede the onset of psychosis and suicide. The Unabomber's grandiose delusion that he could change industrial society and modern civilization provided him with imaginary control over the society he felt had rejected him (see Magid, 2009, p. 8). Simultaneously, it boosted his self-esteem and reduced his likelihood of
committing suicide. Zuk and Zuk (2000) noted that the Unabomber felt he had a messianic mission to share with the world.

It seems reasonable that he assumed the message was one that was legitimate, somewhat messianic, one that would have the support and endorsement of a deity. If it was necessary to threaten the destruction of individuals in pursuit of his messianic mission, he probably felt he had an entitlement. If in the course of effort to inform the world he would be captured and perhaps put to death for murder, he was prepared because his demise would promote a presumed wish to become a martyr (p. 334).

**Third**, in accordance with PBT, the Unabomber's schizophrenic symptoms served two major psychological functions. His continuous engagement in building homemade bombs and planning his next "mission" without being caught, served as **powerful repressive tool**. These bizarre behaviors were also intuitively chosen because they enhanced his controllability over the stress of a deep sense of incompetence by boosting his self-esteem. Hence, in terms of cost-benefit, the Unabomber's schizophrenic symptoms were beneficial as they reduced his unbearable levels of depression. The Unabomber also enjoyed celebrity status and thrived on the attention he received in media, typically seen with serial killers (Haggerty, 2009).

His refusal to confess that he suffered from mental illness, despite the risk of receiving death penalty, can reflect the high benefit which the symptoms yielded. It appears that the Unabomber's denial of his "illness" is due to the high emotional cost that he would have to pay if he confessed that he was mentally sick, as proposed by his lawyers. This would mean not only the abandonment of his coping mechanism and re-exposure to the original unbearable stress, but also an additional blow to his self-esteem, which might have motivated
him to commit suicide. Thus, contrary to Amador and Paul-Odoard's (2000) interpretation of the Unabomber's denial, according to PB this was quite rational decision.

The effect of the principle of availability is reflected by his unique personal experience. One experience was his familiarity with the French philosopher Jacques Ellul, particularly his book, *The Technological Society*, which the Unabomber read six times. Ellul's ideas captivated him, and he became convinced that continued scientific and technical progress would inevitably result in the extinction of the individual's liberty and threaten people's well-being. The second experience, which apparently was affected by Ellul's attitude toward modernity, was his decision to move to a secluded place and become self-sufficient, thereby distancing himself from the modern society that rejected him. He soon realized he could not live that way because industrial development had destroyed the wild land around him. However, "the ultimate catalyst which drove him to begin his campaign of bombings was when he went out for a walk to one of his favorite wild spots, only to find that it had been destroyed and replaced with a road". As noted by the Unabomber:

The best place, to me, was the largest remnant of this plateau that dates from the tertiary age. It's kind of rolling country, not flat, and when you get to the edge of it you find these ravines that cut very steeply into cliff-like drop-offs and there was even a waterfall there. It was about a two days hike from my cabin. That was the best spot until the summer of 1983. That summer there were too many people around my cabin so I decided I needed some peace. I went back to the plateau and when I got there I found they had put a road right through the middle of it... You just can't imagine how upset I was. It was from that point on I decided that, rather than trying to acquire further wilderness skills, I would work on getting back at the system. Revenge (see Kaczynski, 1999).
Another significant experience that might have contributed to his specific choice was witnessing numerous riots and protests, such as the People's Park Riot of May 1969, an extremely violent event at which police officers shot students (Carley, 2013).

2. John Nash—A Masterpiece of Craziness: Another example of schizophrenia in the absence of evidence for neurological impairments is the case study of John Nash, the Nobel Prize winner (Nasar, 1998). Not only do medical models have no evidence that Nash suffered from brain disease, but it is difficult to see how such evidence could help us to understand the sophisticated and meaningful symptoms which he developed and why they were completely different from those of the Unabomber. Moreover, there is no need to assume that Nash suffered from brain damage as PBT's simple concepts can adequately account for this case.

First, Nash's schizophrenia meets PBT's five criteria of madness. The symptoms preoccupied his attention and severely affected his daily activities (criterion 1); The onset of his symptoms were not linked to a specific event that could account for the behavioral changes (criterion 2); He was unaware of the underlying cause of his behavior (criterion 3); His bizarre behaviors were extremely rare (criterion 4), and; His behaviors were stigmatized as the reflection of an illness (criterion 5).

Second, like the Unabomber, his schizophrenic symptoms were a response to an extreme level of stress, as specified below. Thus, despite differences in their schizophrenic symptoms, Nash was in many respects similar to the Unabomber. He too skipped grades, developed poor social skills and felt extremely lonely during childhood, adolescence, and throughout his academic career (Nasar, 1998). While years of social rejection must have caused severe feelings of inferiority, negatively affecting his self-esteem, this was not substantial enough to motivate the
adoption of deviant behaviors. Two women loved Nash, which helped boost his self-esteem. For Nash, "Who had never even known a woman other than his mother and sister" (Nasar, 1998, p. 174), his secret liaison with Eleanor [his mistress] was not only a pleasant sexual experience, but also a highly ego enhancing affair. His wife, Alicia, "A beautiful young physics student who adored him" (Nasar, 1998, p. 15), and of whom he was proud, surely contributed to raising his confidence as well.

Nevertheless, eventually, Nash developed schizophrenia, not because of his poor social skills, though this factor no doubt played a significant role in precipitating his disorder. His breakdown was the consequence of an accumulation of stressors that aggravated a self-loathing he had established earlier, and which had overtime grown to reach an unbearable level. Nasar (1998) noted that schizophrenia might not be the result of a single stressor but rather the consequences of an accumulative effects number of stressors. "Rather than a single trauma, a string of events from childhood through young adulthood produces strains that mount like straws on the proverbial camel's back" (Nasar, 1998, p. 188). Three specific personal stressors dramatically aggravated his already present self-loathing and left him with almost no choice but to adopt schizophrenia as a coping mechanism or, as he sometimes contemplated, to commit suicide (Nasar, 1998, p. 308).

_The first stressor_ concerned Nash's extremely ambitious personality, which was affected by his strong feelings of inferiority resulting from years of social rejection. As noted by Nasar (1998), although "he was told that he had a brilliant future in mathematics…for a teenager who had endured a lifetime of rejection by peers, the warm praise of such professors…was too little…Nash craved a more universal form of recognition…" (p. 44). "Nash was interested that everyone would recognize how smart he was, not because he needed this admiration, but anybody who didn't recognize it wasn't on top of things… He seized opportunities to boast his accomplishments" (p. 67). However, Nash's self-esteem further deteriorated when his need for superiority was denied primarily due to two events.
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1) Nash hoped to get an appointment at Princeton University, but, the members of the mathematics faculty rejected his nomination primarily because of his personality traits. "The thought must have occurred to Nash that he was being rejected less on the basis of his work than on the basis of his personality. It was an even greater blow [to his self-esteem] because the same faculty made it clear that John Milnor, only a junior by this time, would one day become part of the Princeton faculty" (p. 132). His expectation of receiving a promotion and tenure at MIT was not fulfilled, since faculty members felt he was a poor teacher and an even worse colleague. MIT promised to reconsider his promotion once his new article was published. "Nash, however, was furious" (p. 224).

2) Nash was extremely disappointed when he did not receive the Fields Medal, the mathematics' equivalent of the Nobel Prize, or the Bôcher Prize, the only award remotely comparable in terms of prestige to the Fields Medal. Perhaps the best indication of his disappointment in himself regarding his academic achievements can be seen in his statement, "What, thirty already, and still no prize, no offer from Harvard, no tenure even? And you thought you were such a great mathematician? A genius? Ha, ha, ha!" (p. 229).

The second stressor was his bisexual tendencies. Capps (2003, 2004), thoroughly reviewed evidence indicating that Nash had homosexual desires. Based on Erikson and Freud's theories, Capps suggested that Nash's paranoid delusions were mainly the result of acute identity confusion and his efforts to repress his homosexual desires after his marriage to Alicia. It seems that these desires aggravated his negative self-loathing particularly due to his "merciless superego" (Nash's own term, Nasar, 1998, p. 317) and his guilt, which was "directly connected, but not limited, to his feelings about homosexuality" (Nasar, 1998, p. 327). Nash imagined himself as "a religious figure of great, but secret importance" (Nasr, 1998, p. 275) destined to replace the Pope (see Capps, 2004). It seems this delusion is associated with Nash's desire to gain a "gay
liberation” and compensate for his unbearable guilt. As noted by Capps (2004) in regards to Nash's homosexual desires, Nash was seeking "some sort of vindication as a man who had suffered far too much at the hands of his "merciless superego" (p. 211).

The third stressor, perhaps even worse than the previous two, concerned his wife's pregnancy and the death of his father. Nash's breakdown and his hospitalization occurred when his wife, Alicia, was giving birth to their son, John Charles Nash. It seems unlikely that his wife's pregnancy and the birth of his child constituted stressful events, as Nash expressed satisfaction when his mistress, Eleanor, announced her pregnancy five years earlier (Naser, 1998, pp. 175, 235). Moreover, he reminded Alicia when she had suggested waiting a few years before having children, "that the whole purpose of marriage, in his view, was to produce children" (p. 235). Therefore, it seems the expected birth precipitated Nash's psychological breakdown for other reasons. First, the birth reminded him of the trauma associated with his first son's birth and his parent's subsequent discovery of his mistress and son. The shock to his parents was enormous. His father contacted him via a long-distance call, an unusual occurrence as they communicated exclusively by letters, and told him sternly "don't come home… Go right to Boston and make this right. Marry the girl" (Nasar, 208). Soon afterward, his father suffered from a massive heart attack and died. The death shocked Nash, and the possibility that he hastened his father's death bothered him greatly. His mother accused Eleanor of causing her husband's death, and "it is quite possible that she said something similar to her son, or implied as much" (Nasar, 1998, p. 209). Second, Capps (2003) noted that the expected birth was traumatic because it "confronted him with a crisis of commitment… The archaic voice of his father, saying perhaps, 'You are not man enough to assume responsibility for the consequences of your actions" (p. 378). Thus, like the Unabomber, it makes more sense to attribute Nash's schizophrenic disorder to psychological
factors than brain damage. Self-loathing, where he perceived himself as the only one responsible for his inability to cope, motivated the adoption of his schizophrenic disorder.

**Third**, as with other bizarre behaviors, the **major psychological function of Nash's schizophrenic symptoms was repression**—they intensively preoccupied his mind so that the unbearably stressful thoughts became inaccessible. Thus, contrary to claims of the psychoanalytic theorists, such as Capps (2003, 2004), repression did not cause Nash's paranoid symptoms, but vice versa: the paranoid symptoms blocked the accessibility of stress-related thoughts. Further support for PBT’s theoretical paradigm is found in the fact that Nash's repressive efforts were aimed not only towards homosexual desires but also towards other stressful areas, such as the disappointment of his academic achievements, his image as a father and the pain he caused his parents, especially his father.

**Fourth**, Nash's symptoms also **served his need of controllability**. His symptoms boosted his self-esteem and projected his devastating stressors on to external sources. While it is beyond the scope of this book to analyze all of Nash's delusions, which are discussed by both Nasar (1998) and Capps (2003, 2004), a number of examples may be sufficient to illustrate these claims. Before relating to these examples, it is worth noting that the symbolic and complex meanings of these delusions, as well as the clever way by which these meanings were encoded, preclude the possibility that Nash's symptoms were the consequence of brain disease and strengthen PBT's position that these were the result of psychological processes.

One example is when Nash slouched into the common room of Hartley Rodgers, announcing, while pointing to the story on the front page of The New York Times, that

> Abstract powers from outer space, or perhaps it was foreign governments, were communicating with him through The New York Times. The messages, which were meant only for him, were encrypted and required close analysis. Others couldn't decode the messages. He
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was being allowed to share the secrets of the world (Nasar, 1998, pp. 241-242).

Although this delusion appears insane and irrational, in fact, it is exceptionally clever, both in its symbolic meanings and in its psychological repressive and controllability functions. The abstract powers represent his "merciless super-ego," which coerced him to repress his stressful thoughts. These thoughts were labeled as "the secrets of the world" to further distance himself from them, thereby preventing their access. Nash encrypted his anxiety-provoking thoughts the same way a mathematician would encode his knowledge. This delusion also inflated Nash's self-esteem since the "abstract powers" or "foreign government" shared the secrets of the world" with him alone.

Often, his schizophrenic symptoms were insufficient in blocking the stress-related thoughts from his attention. Nash noted, despite the "horror of hospital and illness, these ideas keep coming into my head and I can't prevent it" (p. Nasar, 1998, p. 258). Therefore, he utilized his brilliant mind to create various tricks as additional barriers to prevent him from accessing his "secrets" -- the stress-related thoughts. One example of an ingenious method of distraction is Nash’s decision to focus on Alicia's secrets in an attempt to further distance himself from his own repressed stressors. "He behaved as if she knew some secret but wouldn't share it with him" (Nasar, 1998, p. 248). Nash became so persistent in the delusion that "he threatened to hit her" if she did not tell him (p. 249). As noted by Capps (2003), Alicia suspected that Nash's inquiries into her secrets "were an act designed to deflect attention from himself" (p. 367), to further repress his anxiety-provoking thoughts. He made Alicia part of the conspiracy plot against him, in an attempt to externalize the underlying causes of his psychological difficulties.
Nash was so distressed by his stressful thoughts and his constant battle to repress them that he felt as though his head was "as a bloated windbag, with Voices which dispute within" (Nasar, 1998, p. 328). He invested a vast amount of time and energy in attempts to form a world government (e.g., sending letters to all embassies in Washington, Nasar, 1998, p. 244), seeing himself as the leader of a great movement for world peace, and referring to himself "the prince of peace" (p. 255) or "a religious figure of great, but secret importance" (Nasrar, 1998, p. 275). While these delusions aimed to inflate Nash's self-esteem, they also held significant symbolic meanings. "The prince of peace" may symbolize his wish to establish peace within his psychic by resolving his unbearable psychological conflicts. Similarly, he wished to be "a religious figure" because he was concerned about his bisexuality and believed he could change the laws that forbid such behaviors if he possessed religious authority.

The conflicting symbolic meanings of Nash's delusions are also reflected in Nash's rejection of a prestigious offer from the University of Chicago to be a chair of the mathematics department, stating that he was scheduled to become "Emperor Antarctica." This statement represents his failure to gain the world's respect: Although Emperor is a highly respected position, serving as "emperor of Antarctica," a barren and empty place, is not the most impressive role he could have created for himself, indicating that he did not believe himself worthy of more. In addition, Nash told a student that he was on the cover of Life magazine but that his photograph had been disguised to make him look like Pope John the Twenty-third. He mentioned two signs proving the photograph was of him and not of the Pope: 1) As opposed to Nash, John was not the Pope's given name, but rather a name that he had chosen for himself; 2) The number 23 was Nash's favorite prime number. While this delusion boosted his self-esteem allowing for both comparison between himself and the leader of the Catholic world and the belief that his photograph had been publicized by a well-known magazine, it also reflects Nash’s negative perception of himself that the magazine had to “disguise” his real face due to his disgraceful behaviors and pictures.
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In analyzing Nash's delusional perception of himself as the Pope, Capps (2003) claims that this reflects feelings of guilt and rage over his function as "papa" and his failure "to live up to his obligations as a father to Eleanor's son" (p. 383). However, while delusions may have negative messages, it seems that their central function, which is overlooked by psychoanalytic advocates, is to increase the schizophrenic's self-esteem. In the absence of this idea, it would be difficult to understand not only Nash's case, but also other cases, such as those of the Unabomber and Charles Cullen, which will be discussed later. This claim is also consistent with many studies showing that awareness of the positive symptoms (i.e., hallucinations and delusions) leads to depression, low self-esteem, hopelessness, and suicidal behavior (e.g., Acosta, Aquilar, Ceias & Gracia, 2013; Balhara & Verma, 2012; Crumlish, Whitty, Kamali, Clarke, Browne et al., 2005; Ekinici, Gorkem, Albayrak, Arslan et al., 2012; Lysaker et al., 2007; Melle & Barrett, 2012; Yu-Chen & Yia-Ping, 2011). Accordingly, Nash's positive symptoms were so important to him because of their repressive and controllability values that he believed that "taking away his delusions and hallucinations would be taking away his genius, his most treasured gift (Weuden, 2002).

Nash's contradicting messages are also reflected in his ongoing delusion that "he was the left foot of God and that God was walking on the earth" (Nasar, 1998, p. 258). While there seems to be no higher ranked position than closeness to God, this delusion also implies that he did not perceive himself as important enough to serve as God’s right foot, which indirectly refers to the perception of himself as a failure. Nash's psychological methods to reduce his intolerable level of depression not only included repression and grandiose delusions, but also delusions that aimed to project his failures and immoral behaviors to factors beyond the self. For example, in one of his letters, Nash wrote, "his career was being ruined by aliens from outer space" (Nasar, 1998, p. 243). Similarly, Nash accused one of the mathematical graduate students of MIT of searching through his trash to steal his ideas (p. 243).
Another delusion worth discussing is his belief that he could renounce his American citizenship and replace it with a universal identity card, "one that declared him to be a citizen of the world" (Nash, 1998, p. 271). Later, he also wished to obtain official refugee status. When his efforts failed, he destroyed or disposed of his American passport, so that "in his own mind, Nash was now stateless…” (Nasar, 1998, p. 276). He was so decisive in his efforts that he refused to return to the United States even when the Swiss authorities issued a deportation order and forced him to leave Geneva. His strong desire to disconnect himself from the United States was part of his repressive efforts to detach himself from anything that reminded him of his irreversible past. This may also account for the fact that in a conference at the College he insisted on giving his lecture in what he called "Pidgin French," even though most of the speakers delivered their talks in English. Nash's self-loathing was so painful that he wanted to escape from his own self by establishing a new identity completely detached from any memory of past experiences. This is consistent with Nasar's (1998) statement that Nash was:

motivated by as much as by antagonism to his former existence as by an urge for self-expression, Nash particularly desired to supersede the old laws that governed his existence, and, quite literally, to substitute his own laws, and to escape, once and for all, from the jurisdiction under which he had once lived (p. 271).

Capps (2005) noted that Nash's efforts to gain political asylum abroad might have been associated with his fear to be drafted during the Korean War. However, Nash continued his tremendous efforts to gain a refugee's status, for which he applied to many authorities, including the UN Commission for refugees, even when informed by the American authorities that he was beyond the draft age. Thus, it seems unlikely his insistence to obtain official refugee status had any connection to his fear of being drafted. It is more probable that Nash’s wish to renounce his American citizenship was part of his effort to disconnect himself from his earlier identity. The
refugee delusion symbolically represented his attempts to escape from his own psychological battles, and thereby obtain "a psychological shelter" of serenity.

Nash’s case is also unique due to his relatively large number of symptoms. While this can be interpreted as an additional indication of his exceptional creative ability, it seems there were psychological reasons for this unusual abundance. Unlike the Unabomber and Charles Cullen, Nash did not develop schizophrenic symptoms that could intensively preoccupy his attention for a prolonged period. The mad behaviors of the former patients demanded a vast amount of cognitive and behavioral activity that effectively sealed their attention from infiltration of stress-related thoughts. In contrast, most of Nash’s delusions and hallucinations did not yield intensive behavior and cognitive actions, certainly not for a prolonged period. Moreover, since the symptoms were symbolically associated with his stressors, they could not serve as strong preventative barriers. As a result, he had to produce more symptoms that, together, could intensively occupy his attention. However, eventually, they became insufficient, which may explain his desperate efforts to gain a refugee status, to escape from his original environment that reminded him of his stressors.

Nash's refusal to take medications was interpreted by researchers as sign of irrationality. For example, in an article headed "Why Did John Nash Stop His Medications" Weiden (2002) noted, "Nash would have to be persuaded that his voices and strong beliefs (delusions) were harmful to his intelligence, and those medications, by reducing his preoccupations, would help his concentration and intellect" (p. 390). Not only did Weiden fail to realize the important psychological functions of Nash's schizophrenic symptoms, but recent studies also indicate how fortunate Nash was that he stubbornly refused medications. Research reveals that antipsychotics increase the risk for metabolic syndrome, cardiovascular disease, excessive mortality and significant cognitive damages (e.g., Casey, Haupt, Newcomer, Henderson et al., 2004; Scigliano & Ronchetti, 2013; Yogaratnam, Biswas, Vadivel & Jacob, 2013).
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The simplistic conception of schizophrenia by medical models is evinced also by data indicating that Nash’ choice of symptoms were affected by the principal of availability. For example, one of his prominent symptoms was associated with numerology (e.g., see Nasar, 1998, p. 281), and this symptom is unique to him because "Nash was the greatest numerologist the world has ever seen" (Nasar, 1998, p. 335). Similarly, the fact that mathematics constituted the major focuses of his life may explain why "Nash's delusions and hallucinations often involved mathematics, numbers, and other mathematicians opposing his ideas throughout the height of his illness" (Capps, 2005). Another example of availability concerns his delusion to establish a world government and his tremendous effort to renounce his American citizenship and replace it with a universal identity card, "one that declared him to be a citizen of the world" (Nash, 1998, p. 271). Nasar noted in this regard that

Ideas of world government, and related concept of world citizenship, were at their heyday during Nash's Princeton graduate-school days and permeated the 1950’s science fiction that Nash devoured as a student….Princeton was the center of that movement, largely because of … Albert Einstein and John von Neumann… However, the one-worlder who fired Nash's imagination was a loner like himself, the Abbie Hoffman of the one-world movement. In 1948, Garry Davis, a leather-jacketed World War II bomber pilot, Broadway actor …had walked into the American embassy in Paris, turned in his U.S. passport, and renounced his American citizenship. He then tried to get the United Nations to declare him "the first citizen of the world" (pp. 270-271).

Nash's delusions were often associated with religious themes, and one was directly associated with the biblical story of Jacob and Esau (Nasar, 1998, p. 327). The availability of
these ideas was partly due to his Sunday Bible classes (Nasar, 1998, p. 33), and partly to the fact that he was raised in a traditional religious family.

Traditional theories of psychopathology regard schizophrenic symptoms as extreme reflections of irrationality. Moreover, it is unanimously agreed that they are associated with severe neurological impairments. Professor George Mackey, from Harvard University, formulated this conventional conception in his first meeting with Nash after his remission:

How could you, began Mackey, how could you, a mathematician, a man devoted to reason and logical proof...how could you believe that extraterrestrials are sending you messages? How could you believe that you are being recruited by aliens from outer space to save the world? How could you...? (Nasar, 1998, p. 11)

Nash answered this question by saying, "The ideas I had about supernatural beings came to me the same way that my mathematical ideas did. So I took them seriously" (p. 11). Capps (2005) noted, in reference to this statement, that according to Nash, his schizophrenic symptoms "were just as reliable and real as the logic and math." In the absence of PBT, Nash's answer should have only intensified Mackey's confusion. Capps and researchers of rival theories would probably attribute Nash’s answer to irrational psychological processes, resulting from his madness.

However, Nash was correct in his answer, and moreover, his symptoms can be seen in terms of rationality as “a masterpiece of craziness.” As indicated above, schizophrenia is a rational coping mechanism, which provides a powerful repressive tool and decreases the patient’s sense of incompetence or self-loathing, thus alleviating an intolerable level of depression. In no other case did the schizophrenic symptoms reach as high a level of sophistication as those of Nash. Although Nash’s symptoms appear bizarre, careful
examination reveals that they comprise a masterpiece of metaphors of his psychological condition, a masterpiece that only a genius such as Nash could invent.

Some examples of these beautiful metaphors are: 1) Nash’s perception of himself Emperor of Antarctica, which apparently represented both his aspiration to be famous and as the his feelings of failure; 2) His belief that he was the left foot of God, symbolizing his desire to be great, but also his image of himself as limited by his weaknesses; 3) His claim that extraterrestrials were sending him messages, which seems to refer to anxiety-provoking thoughts elicited by his merciless super-ego; 4) His conviction that the photograph of Pope John on the cover of Life magazine was actually a disguised photo of him, which again refers to his disappointment in himself for failing to earn recognition; 5) His reference to himself as "the prince of peace," which may reflect his wish to settle his psychological conflicts and thus live in peace; 6) The title of ABSOLUTE ZERO, on his notebook which he carried around, which may represent his perception of himself as a total failure. It is difficult to see how suggestions of brain impairments or other rival theories can explain these extraordinary metaphors.

3. Mordechai Vanunu--The Crazy Nuclear Spy: In 1986, Vanunu, an Israeli citizen, revealed classified information regarding Israel’s nuclear capabilities and was subsequently sentenced to 18 years in prison (see biographical account by Toscano, 1991). While Vanunu claimed that ideological reasons had motivated his behavior, which gained the sympathy of various notable people around the world including Nobel Laureate and American astronomer, Carl Sagan (Toscano, 1995, p. 291; see also Sapiro, 1990), the Israeli Supreme Court (1990) attributed his behavior primarily to a wish to take revenge and gain publicity. This case also important because the current diagnostic system lacks objective criteria to diagnosis
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schizophrenia or criminal insanity. From PBT's standpoint, this case resembles the case of the Unabomber and to some extent Nash as well. It meets all of PBT's criteria of bizarre behaviors and should have been diagnosed as schizophrenic rather than as normal criminal.

Several months earlier, at the age of 31, he resigned from the Israeli nuclear center, after he learning that he would be fired after eight and a half years working in a low rank position. Vanunu lacked the qualifications to be promoted to position elsewhere. Although he had earned a degree in Greek philosophy and was studying for a master's degree, career opportunities were scarce. He was even denied work as a nude model due to his nervousness. His early discharge from the nuclear center may have been particularly frustrating as it reminded him of his earlier failure to graduate from Tel-Aviv University with a physics degree. He also experienced chronic social alienation due to his extremely poor social skills (see Toscano, 1991, pp. 37, 55). He was a part time student at Ben-Gurion University in Beer-Sheiva, where he failed to establish satisfactory relationships with other Jewish students. "Arabs soon became the only friends Vanunu could find" (Toscano, 1991, p. 37). Vanunu also had difficulty forming relationships with women, and he admitted to still being a virgin (Toscano, 1991, p. 67). The Israeli Supreme Court (1990) noted, with reference to his personality, that Vanunu was "an introverted person, egocentric and lonely, his personality structure is complex and problematic and from his life it seems that he did not find his place in the Israeli state and society" (p. 3). Vanunu's disappointment with himself is reflected in a diary he kept. In August 1982 he wrote,

What have I achieved until now? ...Why am I not relaxed and settled, satisfied with something or enjoying something? I have never been ready to take responsibility for myself... Once I thought if you aren’t ready, commit suicide and be released from the job given to you, from miseries you see in life.... I am a failure in life. I don’t want contact with anyone in society. What will be in the future? ... What is my path
Similarly, the Israeli Supreme Court (1990) noted that Vanunu made tremendous efforts to earn a more respectable position than his parents and other family members. "Unfortunately, he did not succeed; he did not create a family of his own, and at quite an advanced age he was still wandering the paths of life. His routine work as a factory technician [in the nuclear center], with no hope – perhaps no chance for promotion in this job ... brought him to the conclusion that he had accomplished nothing in his life." (Supreme Court, 1990, p. 3).

Subsequent to his dismissal, Vanunu visited a number of Eastern European and Asian countries before finally arriving in Sydney where he decided to settle. Soon after his arrival, he visited a church, and in less than two months he converted to Christianity and changed his name to John. This was a very significant behavioral change since Jewish religious law, of which Vanunu must have been aware due to his Orthodox religious upbringing, treats a convert as if he were dead. Psychologically, this may not be viewed as deviant behavior, as it did not disrupt Vanunu’s adjustment in his new environment. Nevertheless, this spontaneous behavior seems to have been motivated by an intense need for distraction and may represent, similar to John Nash, a wish to escape from his old identity and establish a new self.

The fact that Vanunu "never evidenced much interest in Christianity, certainly nothing strong enough to trigger such an important move in the space of a few months" indicates that Vanunu’s conversion was indeed a coping strategy, rather than an ideological decision (Toscano, 1991, p. 75). Conversion was an effective coping tool, since the new identity enabled him both to disassociate himself from his past, managing "a simple life doing simple
work” (Toscano, 1991, p. 75; Vanunu was employed as a cab driver), and to provide an effective distraction. As noted by Toscano (1991), "Vanunu spent virtually all his free time at the church or with the parishioners" (p. 67).

However, Vanunu’s major coping mechanism was not conversion but rather the treason with which he became obsessed ever, since he had taken photographs of the nuclear site before leaving Israel. As noted by Tosacano (1991), "The Dimona photographs preoccupied Vanunu from the moment the ferry steamed out of Haifa harbor" (p. 63). For example, when he met the daughter of a British television reporter, after leaving Israel, he "spilled the Dimona story to a stranger and asked whether she could arrange a meeting with her father" (p. 64). In fact, Vanunu "reached a point where he could not rest or relax as a result of his quandary over an appropriate moral response to Israeli nuclear policy" (P. 67). Thus, just like the Unabomber, believing that ideological reasons motivated his behavior, Vanunu’s criminal act boosted his low self-esteem and acted as an additional barrier against the accessibility of stress related thoughts.

Vanunu met all of PBT’s five criteria of madness. His behaviors, both his treachery and his religious conversion, fulfill the first criterion as they intensively preoccupied his attention and severely disrupted his daily functioning. With respect to the second criterion (mode of onset), the stress of losing a job does not account for Vanunu’s behavior. While the desire for revenge, publicity and recognition may have played a part in the selection of the behavior, as claimed by the Supreme Court (1990), it does not seem to be a sufficient explanatory cause. Usually people will not take such extreme measures, such as committing treason, after losing their job. Additionally, financial or ideological motives cannot account for Vanunu’s behavior. As noted by Toscano (1991,) the possibility of making money never crossed Vanunu’s mind (p. 72). Indeed, as confirmed by the Israeli Supreme Court (1990) there was no evidence that Vanunu received any significant amount of money for his betrayal. Instead,
he justified his actions on ideological grounds, saying, "In a democracy ... the people should decide the nuclear issue. He wanted to give Israelis the opportunity denied to them by their government" (Toscano, 1991, p. 120). However, Vanunu’s pretension that he was motivated by concern for the Israeli public seems ludicrous in light of the fact that he totally abandoned their society and faith, and adopted actions that "in the minds of many Israelis ... threatened the very existence of the Jewish state" (Toscano, 1991, p. 120). Furthermore, the Israeli Supreme Court, rejecting Vanunu’s ideological explanation, noted that no indications in Vanunu’s personal diary found that his actions "stemmed from strong ideological motives" (p. 4). Thus, it seems that Vanunu’s behavior also meets PBT’s second criterion. Further, the fact that Vanunu provided an untenable explanation for his behavior indicates that he was unaware of his true underlying motives and that he chose the strategy of denial to preserve his unawareness (criteria #3). This use of denial is similar to that of patients with anorexia nervosa or OCD (e.g. compulsive cleaning) as well as the Unabomber. It was certainly extremely rare behavior (criteria #4) as "Vanunu had committed the most heinous act of betrayal possible in Israel" (Toscano, 1991, p. 300). The fifth criterion, which refers to the stigmatization of the behavior as a reflection of physical or mental illness, is not fulfilled because people were led to believe that Vanunu's insane criminal behavior was motivated by ideological reasons.

The psychological condition of Vanunu was quite similar to that of the Unabomber. Both were socially incompetent, socially isolated, sexually deprived, and both had deep feelings of inferiority. The condition of the Unabomber was somewhat better as, he at least achieved impressive academic success, as opposed to Vanunu, who failed in almost every sphere of his life, including his academic performances Yet, the medical community or general society did not see Vanunu as insane, because his delusional grandiose by which he rationalized his
insane criminal behavior accidentally fitted the pacifists' ideology which viewed him as hero thereby strongly boosting Vanunu's self-esteem.

Availability affected Vanunu in two ways: 1) He was involved in extreme left wing politics and frequently protested against the government. Accordingly, similar to anorexics and OCD patients who exaggerate their available behavioral repertoire to a bizarre level, Vanunu chose to increase his opposition to the government and the entire Jewish culture to a bizarre criminal level; 2) The nuclear center from which he was discharged became salient in his attention. Before he left Israel, Vanunu took the photographs of the nuclear site. As noted by Tosacano (1991) these "photographs preoccupied Vanunu from the moment the ferry steamed out of Haifa harbor" (p. 63). Hence, like to Charles Cullen who utilized the hospital setting and drugs to build his unique insane coping mechanism, as discussed below, Vanunu used his secret knowledge about the nuclear center to construct an effective coping mechanism that enabled him to achieve the same goal: overcoming his overwhelming emotional distress. It may be important to note that one may still argue that Vanunu was motivated by ideological reasons, similar to Magid's (2009) claim with regard to the Unabomber. However, this seems less likely possibility.

4. Charles Cullen—The Insane Criminal Nurse: Cullen was a hospital nurse, who confessed to murdering as many as 40 patients over 16 years by injecting them with overdoses of insulin. Cullen had a prolonged history of difficult life conditions. He attempted suicide multiple times, beginning as early as age nine, felt lonely, teased people, got divorced and suffered severe levels of depression (Graeber, 2013). While repression, i.e., blocking the accessibility of stress-related thoughts, played an important function in reducing his emotional distress, it seems that one major factor that affected him
to choose this type of madness, rather than other coping measures is controllability: By killing others, he inflated his self-esteem to such a high level that he no longer felt miserable and suicidal. Indeed, in an interview with CBS' "60 Minutes," Cullen noted, regarding his suicide attempts, "I tried to kill myself throughout my life because I never really liked being who I was. I didn't feel I was worthy of anything." While, officially, he was just another hospital nurse, practically, in his new position as a murderer, he was God-like, making life and death decisions. Furthermore, some of Cullen's attempts to kill his patients granted him the opportunity to reinforce his professional status in the hospital. As noted by Graeber (2013) "Cullen was the first to respond to the screaming "code blue" and start resuscitating a failing patient. Because he had administered the cocktail of drugs that sent the victim into trouble, Cullen seemed almost magically prescient when he knew what drugs to administer to undo the damage and save the day.

Another factor that affects the choice of criminal behavior is availability. As illustrated above with regard to Vanunu, people may utilize their professions or work places for criminal acts if these are suitable for their coping aims. This is also demonstrated in Cullen's case. As a nurse he could conceal his serial killings for many years particularly because he used medications normally employed to save people's lives. Drugs like digoxin, commonly used to help regulate heart rhythm, can become deadly when employed in large enough doses and injected into a patient’s IV port. It was especially lethal to patients with a history of heart problems. Insulin was another drug Cullen frequently used, sending patients into spiraling diabetic comas and generally stressing their already fragile systems. The role of one’s profession or work place in choosing a specific criminal act to carry out is also seen in the case of Andreas Lubitz, the 27-year-old co-pilot of German wings flight 9525, who intentionally crashed into the French Alps on 24 March 2015 (Wikipedia, 2015).
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Additionally, Cullen had a history of violent behavior prior to his serial killings. His wife filed two domestic violence complaints against him and requested a restraining order that was not granted. Further, in March of 1993, Cullen broke into the home of a co-worker, whom he once dated, while she and her young son slept, but he left without waking them. After, he began contacting the co-worker frequently, leaving numerous messages, and following her at work and around town, the woman filed a police report. He was arrested and then tried to commit suicide. Cullen pleaded guilty to trespassing and received one year's probation. Thus, the idea of killing became salient in Cullen's mind through his ability to administer drugs in a professional capacity along with his strong aggressive tendencies that were aggravated by his extreme level of depression.

This case meets all five of PBT's diagnostic criteria. Thus, the killing behavior intensively preoccupied his attention and severely disrupted his daily life (1); the dramatic change in his behavior could not be explained by any observable event (2); the patient was unaware of the underlying causes of his criminal behaviors. When asked about the reasons for his criminal acts, he first said he thought he was helping people by ending their suffering. However, Cullen told a different story when reminded of the fact that some were not close to death or suffering from great pain. He said there was "no justification" and that he "felt overwhelmed at that time." When pressed by the interviewer from "60 Minutes," for an explanation for the families of his victims, he said "...It felt like I needed to do something and I did. And that's not an answer to anything." (3); his serial killings were undoubtedly rare (4); and his behavior was diagnosed as reflection of madness (e.g., see Graeber, 2013) (5).
5. L. Percy King -- The Creative Paranoid Patient: White (1964, pp. 76-84) described a case study of a paranoid schizophrenic, L. Percy King, who was hospitalized for twenty-eight years. King attributed all his misfortunes and weaknesses, including his long hospitalization, compulsive masturbation, and homosexual desires, to a group of invisible pursuers who had been chasing him since he left his home state thirty years earlier. The patient ascribed ocular powers to this group, believing they controlled his mind and body. He described in detail their supernatural abilities, special controlling methods, terrifying immoral acts, and danger to other people. "These mind-reading pursuers can ruin or disgrace anyone. I do not believe anyone’s life is safe with some of them around!" (White, 1964, p. 77).

Although few details are given regarding King's life history prior to the onset of his symptoms, the evidence suggests that he had a personality profile similar to that of the Unabomber, Nash, Vanunu and Cullen. In reference to what other people think of him, King noted, "I am odd and queer… I am a masturbator… I need a woman to straighten out my sex life, but I cannot get one… I follow the handsome young women around, but I am so shy, bashful, sedate and reserved that I am afraid to approach such young ladies to make dates for petting and necking parties" (p. 81). White noted that remarks from King's letters revealed that

He finds so unbearably contemptible in himself: his masturbation, his lack of manliness, his failure to prove his sexual adequacy….In King's case the threat to his inflated self-esteem was intolerable. All the contempt he was accustomed to direct upon others threatened to come showering back to him if he really possessed such a grave flaw in his manhood. It was easier to believe that the world persecuted him out of sheer malice than admit his own vulnerability (pp. 81-82).
White noted that, through projection King "protected his self-esteem from an unbearable blow." The controllability effects of King's delusion in inflating his self-esteem can be described in his own words:

> When the public finds out that some of these helpless women [who were sexual victims of the invisible pursuers] make the writer talk…his photo and write-up will be published in every important newspaper and magazine on earth. These helpless women and he will receive so many tones of fan mail that the post office will have to employ extra mail trucks to handle it. …He and they would be invited to appear before the State Assembly, in special session, and will be invited to the State House…” (p. 83).

Hallucinations and delusions of grandeur diminish the sense of incompetence, and, as noted by White, King became far less disordered and less distressed when he entered the hospital. This is consistent with other data that delusions and hallucinations constitute effective barriers against depression (e.g., Hogarty, Goldberg, & Collaborative Study Group, 1973; Siris et al., 1984; Van Putten et al., 1976). Paranoid delusions were described as "a mechanism employed by individuals to ward off a breakthrough into consciousness of depressive thought and its accompanying painful affective concomitants" (Zigler & Glick, 1984, p. 57). Indeed, research shows that schizophrenic people with active delusions appear less depressed and more content than those who have recovered and abandoned their delusions (e.g., Roberts, 1991). Also low or unstable self-esteem is consistently associated with persecutory delusional ideation (e.g., Green, Garety, Freeman, Fowler et al., 2006). Thus, apart from the powerful repressive function that significantly reduced his level of depression, King's psychotic symptoms enabled him significant controllability over the major source of his stressor: It protected his self-esteem and allowed him to discharge his sexual tension without experiencing guilt over his homosexual desires and masturbation.
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Not enough information is given to determine the effect of the principle of availability on King's symptoms. Two available experiences that apparently effected the development of his unique delusion were sexual sensations and strong feelings of guilt, which resulted from his unacceptable sexual desires. It seems likely that King utilized these two experiences, along with imaginative abilities, to create a delusion of pursuers who were endowed with "astounding, unheard of, utterly unbelievable occult powers" (White, 1964, p. 76). This delusion enabled him both to satisfy his sexual desires and to relieve his guilt by attributing his arousal to external sources. One of the pursuers

Often makes a practice of keeping persons awake nights tickling their erogenous zones. There must be a stop to this. He must made to refrain from tickling married women's teats and from tickling them between their legs…. This pursuer persists in the tickling for such long times, and the tickling feels so unbelievable strong that is enough to drive a person frantic. It feels good to certain mind-reading pursuers to have patients masturbate…. sometimes present they are having coitus with male pursuers (White, 1964, p. 77).

"Once he adopted his central hypothesis about pursuers, he found it possible to admit the presence of masturbatory and even homosexual desires" (White, 1964, p. 82).

King's symptoms also meet all of PBT's five major criteria of madness: 1) The symptoms intensely preoccupies his attention and severely disrupts his daily functioning; 2) There is no specific variable that is uniquely associated with his deviant behavior and can explain his unique symptoms; 4) His deviant behaviors are certainly rare; 5) His symptoms are stigmatized as reflection of mental illness by the very fact that he was hospitalized in mental institution.
6. Mr. X—Self-Loathing Duo to Failure of Meeting the Mother's Expectations:

Typically, self-loathing is strongly associated with deficiency of coping abilities, as demonstrated in the above case studies. However, as verified in the following two cases, environmental stress, like family or military events, may motivate the adoption of the schizophrenic coping mechanism, to the extent that they induce intense feelings of self-loathing. The first case refers to a 31-year old, married, university lecturer, diagnosed as schizophrenic. Psychiatrists deemed him incurable after several years of unsuccessful medical treatment (Karon, 2008). The patient was not eating, not sleeping, and continually hallucinating. Electro-convulsive therapy (ECT) was strongly though pessimistically recommended. His wife ceased this treatment and directed him to psychoanalytic therapy, which resulted in a dramatic change in his behavior. He began eating after three days and began working at an intellectually demanding job after four months. He remained in treatment for a total of 14 years, and over 20 years later, after the treatment was completed, the patient sent the therapist a note thanking him for "giving me my life back" (Karon, 2008; see also Silver, 2008).

Mr. X was a Jew who married a non-Jewish woman and "his mother literally told him, like the apocryphal Jewish mother stories that he did not have to worry about the wedding because she would not be there. She would commit suicide. Right up to the wedding, he was terrified that she would carry out her threat" (p. 15). Psychological evaluations revealed that Mr. X experienced "extreme feelings of inadequacy, guilt, and worthlessness" (p. 15), which was apparently due to his feelings that he failed to meet his parents' expectations. The schizophrenic symptoms occurred right after he received his Ph.D. and took a job at a prestigious college.
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Karon noted that Mr. X "held together by the fantasy that if only he were good enough, then his parents would accept him". When this did not happen…"his defenses unraveled" (p. 14). Thus, it seems that the patient's self-esteem was extremely dependent upon his parents' approval, especially his mother. The mother's disappointment of his marriage to non-Jewish woman damaged his self-esteem. However, he succeeded to maintain normal functioning because of his conviction that his mother would accept him as soon as he got his Ph.D. When this did not occur, he felt a profound sense of failure, which motivated him to adopt the schizophrenic coping pathology. Psychoanalytic therapy, to be discussed later, succeeded in curing the patient primarily by focusing on childhood events which destroyed the mother's idealized image. Once the therapy succeeded in disconnecting the patient's self-worth from meeting his mother's expectations, he fully recovered. This case challenges the validity of medical models both because: 1) It demonstrates that schizophrenia may be solely as result of environmental stress, without assuming neurological impairments; and 2) Since recovery occurred by psychological means, whereas medical intervention worsened the patient's condition.

7. Miss. Y. The Manufacture of Self-Loathing/Schizophrenia in a Military Setting: Miss. Y, a 46-year old, single woman has been suffering from schizophrenia for the last 27 years. Prior to her psychological breakdown, Miss. Y was exceedingly intelligent, with high academic scores in high school and psychometric tests. Additionally, unlike typical schizophrenic patients, she had adequate social skills as she had good interpersonal ties. Based on the Israeli Army selection processes, she was accepted for a special program in the army, to which only a third of the selected applicants are accepted. However, believing she
could be more of an asset to the army by utilizing her talents, she decided to leave shortly after the beginning of the course. She was told by her officer that if she would regret, she would be able to restart the course. Miss. Y was assigned as a secretary in a security prison in the Gaza Strip, a dangerous and socially isolated location. She became intensively depressed, once realizing that the army is unwilling to keep its promise.

Miss. Y was referred by her unit physician to the Army Mental Health Center with a letter of recommendation to resume the course, but the military psychologist dismissed her application. Moreover, the psychologist interpreted Miss. Y's desperate reaction to this decision as evidence that she was mentally sick. She was administered psycho-diagnostic tests to examine this matter. Her suffering was then diagnosed as a psychotic breakdown, and she was given the option either to be hospitalized in a mental hospital, in which case her her application would be reconsidered, or permanently be discharged from the Army for the reason of mental inadequacy. Since discharge with such a diagnosis would socially stigmatize her and would have been disgraceful to her family and friends, Miss. Y was left with no better choice than to accept the hospitalization resolution. She stayed at the locked inpatient unit for 5 days and discharged after 10 days. Not only the psychiatrists found no evidence for psychotic symptoms, but they diagnosed her as healthy person. Moreover, they recommended that she be allowed to restart the course she left or to nominate her to an intellectually demanding duty.

Despite the hospital recommendation, after a short vocation, the psychologist at the Mental Health Center refused Miss. Y's application. Furthermore, interpreting Miss. Y's insistence as a sign of mental illness, she was requested once again to be re-hospitalized or parentally discharged from army. A reexamination of Miss. Y by the hospital psychiatrists arrived to the conclusion that she is healthy person and that there is no change in her
condition since her previous diagnosis. Nevertheless she remained a few days hospitalization, and then she sent home.

The health center psychologists made a telephone call to Miss, Y’s parents asking them to come to the hospital. They were told that the army decided to discharge her daughter from the service because of mental illness. When asked which behaviors the psychiatrists found abnormal, they answered that she danced publically in the hospital. The mother explained that her daughter trained for many years to be a dancer, that she frequently danced in public for this aim, and that the dance in the hospital was part of her training to be accepted in a dance band to which she applied. She intended to be active in this band in the case that her service would be close to home. Indeed, shortly afterward, she was accepted to the special dance band, where the accepted rate is quite low. This, however, did not change the hospital's diagnosis.

Despite the parents’ protest and the hospital recommendation to reconsider the discharge decision, the army committee decided to dismiss Miss. Y from the army for mental illness. The discharge was made without mercy as the patient was handed an official document indicating that she is discharged for mental illness. The traumatic impact of this humiliating decision is reflected in a letter that Miss. Y wrote to herself immediately afterward, before making appeal to change the discharge decision,

I never felt so useless…almost superfluous,,
Where to go? What to do?
The devil is sitting in Serifin [The Medical Center] and discharge people
People were discharged but remained people.
Want to do, to contribute, but they don't want you,
Unneeded, superfluous, remainder,
Life goes on, everybody busy…
And I left aside…
Unemployed…
Even fence to seat on is lacking…
They get rid of me…garbage…
Motivation does not help,
Rubbish
Go to sleep late and get up early
Burn time

Miss. Y's total breakdown occurred when her appeal was rejected and her dismiss was finalized.

The patient's schizophrenic symptoms consisted of a variety of behaviors, such as refusal eating and washing, disorganized speech, meaningless writings, and a delusion that she is the Messiah who has the ability to resurrect the dead. It seems likely that spiritually she perceived herself as dead person which only miracle can revives her. Except for short period of about 3 months, where she was in a mental hospital after discharge from army, the patient is at home. Initially she stayed with both of her parents until the death of her father 6 years ago. Miss. Y never goes out alone and when the mother leaves she locks the door.

Like Mr. X, this case challenges the validity of the medical models as there is no case of schizophrenia in her family. Neither there was evidence of brain impairments. Moreover, unlike typical cases of schizophrenia, she had competent social skills, so she did not have vulnerability to develop deviant behaviors, as in the case of Unabomber, John Nash, Mordechai Vanunu, and Adam Lanza. This case indicates that a normal person may develop schizophrenia if the social environmental is extremely stressful in resulting in intense self-loathing. This case is consistent with PBT also with regard to several other cardinal issues. First, the schizophrenic symptoms provided the patient with powerful repressive tool and served her controllability demands of relieving the stress as they falsely enhanced her self-esteem, such as her delusion of being the Messiah who has the ability of resurrection, and by getting full control over her parents. Second, in accordance with PBT's availability principle, it seems likely that some of her specific symptoms were suggested to her by the military
forced hospitalization. This is consistent with data reviewed later that in some cases patients develop specific bizarre behaviors following suggestions given by the therapist (e.g., see Read & Lindsay; 1994; Spanos, 1996; Spanos & Burgess, 1994). Third, like the aforementioned cases, this case meets all PBT's diagnostic criteria of madness: The symptoms intensively occupied her and severely disrupted her daily functioning; there was no observe event which could rationalize the dramatic change in her behavior; the patient was unaware of the underlying causes for the sever behavioral change; her symptoms were extremely rare and her behaviors were diagnosed as a reflection of mental illness.

8-10. The Crazy Motive of Suicide-Criminal Insanity to Gain Eternal-Life: This section discusses three case studies, Adam Lanza, Elliot Rodger, and Andreas Lubitz, who killed innocent people and immediately afterward committed suicide. These behaviors appear to be even more senseless than the aforementioned cases of schizophrenia since they seemingly did not reap any benefit except of relief of depression. However, closer examination indicates that similar to the above cases of schizophrenia, they are rational endeavors that aimed to enhance the individual's self-esteem. These murderers suffered from an extreme level of depression, they highly intelligent with low social skills, lonely or had unsatisfactory social relationships. Most importantly, they experienced self-loathing and profound sense of incompetence. While the act of violence and suicide was stimulated by depression and the need to relieve their suffering, they were also goal-directed behaviors that aimed to enhance their self-esteem. They need to be diagnosed as mad or insane, as they meet PBT's criteria of madness, as will be specified below.

Adam Peter Lanza, a 20-year old man, on December 14, 2012, fatally shot his mother, twenty children and six adult staff members at the Sandy Hook Elementary in Newtown,
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Connecticut (Derossett, 2013). Although Lanza was diagnosed with Asperger’s syndrome at the age of five (e.g., Lysiak, 2013), this cannot account for his bizarre criminal behavior. As noted by Lysiak "Most in the medical community believe there is no linkage between autism and acts of violence...Autism did not commit this horrible act" (pp. 212-213). "The aggression that Adam displayed during this rampage is not typical of someone who has autism" (Derossett, 2013, p. 153). The autopsy did not reveal abnormality or tumors in his brain that might have triggered his behaviors (Derossett, 2013, p, 167). Similar to the above cases of schizophrenia, Lanza was highly intelligent, achieved exceptional academic successes and lacked social skills. A fellow classmate, who sat next to Lanza in the back of their sophomore-year honors math class, said Lanza barely spoke a word all year but earned high marks. He was shy, introverted and lacked any close friends (Derossett, 2013). Lanza's mother removed him from the Newtown public school system because she was unhappy with the school district's plans for her son. He did not have any social interactions at home, since his mother was reluctant to let others into her house. A group of neighbors with whom Lanza’s mother played a weekly dice game said she always managed to avoid hosting the get-togethers, despite having been an active participant for over fifteen years (Derossett, 2013). As noted by Lysiak (2013):

Adam was nineteen, he had withdrawn almost completely and become a virtual shut-in, spending hours playing the first-person shooter game Call of Duty. In the months that preceded the shooting, Adam began to isolate himself in his bedroom, surrounded in all day and night by violent images (p. 211).

Lanza was also at the late adolescent age at which he assumedly had an intense sexual drive that he could not satisfy.
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Elliot Rodger displayed similar insane criminal behavior and psychological profile. He murdered six people and wounded 14, on May 23, 2014, in Isla Vista, California (Wikipedia, 2014). Like Lanza, Rodger (2014) was highly intelligent, as evidenced in his cleverly written manifesto, with very poor social skills. He repeatedly mentioned his loneliness, and, particularly, his desperate and unsuccessful efforts to establish relationships with women. He described himself as shy, quiet and incapable of making friends. Experiencing loneliness, social rejection and strong feelings of inferiority, Rodger began:

To act weird and annoying to people just to get attention... people started to make fun of me, but I don't care.... I was extremely unpopular, widely disliked, and viewed as the weirdest kid in the school... I never knew how to gain positive attention, only negative... I told everyone that I wanted to commit suicide... I sank into major depression. My feelings of inferiority were intensified... I realized how hopeless everything in my life was... The loneliness was torturing me so intensely... I sank into one of worst depressions of my life... (Rodger, 2014, pp. 41, 42, 54, 57, 93, 105).

The aggression and suicides of both Lanza and Rodger are consistent with numerous studies indicating that depression, particularly when accompanied with social isolation, is a risk factor for general aggression, intimate partner aggression, and suicide (e.g., see review by Dutton & Karakanta, 2013; Heinrich & Gullone, 2006). In addition, both sought revenge: Lanza because the school offended him (see Lysiak, 2013, p. 212), and Rodger for his social rejection, particularly by women.

They treated me like an insignificant little mouse, but on the Day of Retribution, I would be a God to them. They will be the
mice, and I will be the predator… All of the suffering, loneliness, rejection, and humiliation I had to experience… (Rodger, 2014, p. 32).

Although revenge was an important motive in triggering Lanza and Rodger's criminal behaviors, it seems this factor alone is insufficient in explaining their unusual criminal acts. It appears that, like all aforementioned cases, the major factor behind their insane behaviors was severe damage to their self-esteem. Both Lanza and Rodger suffered an intense level of self-loathing, as they could only blame themselves for their social rejection. This similarity in social and personal backgrounds raises the question regarding the variability of their deviant behaviors. Why both Lanza and Elliot became brutal mass murderers and committed suicide? Which benefit could they get from their criminal acts, if immediately afterward they ended their life?

Lanza "researched mass shooting extensively, he had a 7 by 4-foot spreadsheet that had the names of shooters, the weapons they used, the number of killed or injured and more… Lanza researched more than 500 shootings in all" (Derossett, 2013, p. 17-18). Neither depression nor the desire to take revenge can explain why Lanza invested so much time and energy researching previous acts of murder. It seems likely that Lanza searched for an unusual and criminal act, manifested by no one before, because he wanted to immortalize himself, a goal that raised his self-esteem during the planning stages. As noted by Haggerty (2009), in his analytic article of the etiology of modern serial killers, while attention seeking is a major motivating factor for these behaviors, "Fame also offers citizens the prospect of surviving beyond death" (p. 174). The motive of self-enhancement can also explain the fact that Rodger invested a significant amount of energy and time in writing his 140 pages manifesto. In the absence of this motive, it would be difficult to understand why an extremely depressed person
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who intended to commit suicide would invest so much energy in writing such a long and detailed manifesto. Rodger formulated a clear expression of this need in the following statement:

I would be a God to them…In order to completely abolish sex, women themselves would have to be abolished… In order carry this out, there must exist a new and powerful type of government, under the control of one divine ruler, such as myself (Rodger, 2014, pp. 110, 136).

Thus, despite the fundamental differences in the aforementioned cases (the Unabomber, Charles Cullen, Vanunu, Lanza and Rodger), each was motivated by a profound sense of incompetence and desire to inflate self-esteem, even after death.

**Lubitz's criminal** act, the 27-year-old co-pilot of German wings flight 9525, who intentionally crashed into the French Alps on 24 March 2015 (Wikipedia, 2015), seems to be motivated by the same extreme level of depression and similar psychological need. Lubitz grew up dreaming of flying and of one day becoming a pilot. Klaus Radker, the club's chairman, said: "It was his dream to fly from an early age and it was a dream he began to fulfil here, so when he went on to gain his commercial license and fly planes like the Airbus he was very happy and proud." (The Telegraph, 2015). Lubitz descent into suicidal depression appears to have begun when he stared experiencing blurred vision in December 2014 (The Telegraph, 2015). He was concerned of losing his eyesight, possibly because of a detached retina - with his vision already restricted to 30 per cent (Mail Online). According to medical records, Lubitz was taking medicines to treat depression, anxiety disorders and panic attacks. He was reportedly on medication so strong that patients are advised not to drive a car. During their search of Lubitz's
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apartment, detectives found a letter in a waste bin indicating he had been declared unfit to work by a doctor (The Telegraph, 2015). Motivated by the fear that blindness would cause him to lose his pilot's license, he began conducting online research about methods of committing suicide before deciding to crash Flight 9525 (Wikipedia, 2015).

An additional stressful event that may have facilitated his suicidal act was his breakdown with his girlfriend. "Investigators believe his eyesight problems - coupled with a breakdown in his relationship with his long-term girlfriend - triggered the ‘madness’ that ended in mass murder" (Daily Mail, 2015).

While there is no much information about his childhood background, it is worth nothing that a neighbor whose brother was in the same year as Lubitz at the high school, indicated: "I didn't know him well, but to me he seemed very private, perhaps a little bit withdrawn. But who would have guessed at something so shocking happening?" (The Telegraph, 2015).

Thus, it is likely that like the aforementioned cases, Lubitz experienced a profound sense of incompetence and a strong blow to his self-esteem. This motivated him not only to committee suicide, and thus to relieve his unbearable level of depression, but to take additional actions to enhance his self-wort by an unusual criminal act. This may explain his extremely unusual and terrifying suicide act and his statement to his ex-girlfriend: "One day I will do something that will change the whole system, and then all will know my name and remember it" (The Irish Times, 2015, see also Daily Mail, 2015).

An additional factor which affected Lanza, Rodger and Lubitz is the principle of availability. Lanza's choice of bizarre criminal behavior was affected by the following three factors: 1) The availability of weapons in his home; 2) His intensive training in shooting administrated by his mother (e.g., often she took her sons to the range to target shoot with
various firearms, Derossett, 2013); and 3) His exposure to a variety of cases of mass killings in
the media. As noted by Derossett (2013), Lanza extensively researched mass shooting and
even composed a 7 by 4-foot spreadsheet that contained the names of shooters, the weapons
they used, the number of people they killed or injured, and more. "Lanza researched more than
500 shootings in all" (Derossett, 2013, p. 17). He comprehensively studied the 2001 Norway
shooting and the 2006 Amish school shooting in Nickel Mines, Pennsylvania. Police also
found a gun safe in one of the bedrooms of the house containing 1,400 more rounds of
ammunition along with other firearms, such as a 45 caliber Henry rifle (Derossett, 2013).
Additionally, he spent a significant amount of time playing an aggressive video game named
Call of Duty.

Availability is also demonstrated in Rodger's (2014) criminal acts: 1) In line with
studies demonstrating that aggression is directed toward the frustrating objects (e.g., see
Berkowitz, 1993; see also Blair, 2010; and Marcus-Newhall, Pedersen, Carlson, & Miller,
2000), Rodger harbored extreme anger toward females to whom he attributed his chronic
sexual deprivation (see Rodger, 1914). One example that illustrates this effect is when
Rodger saw a young couple behaving intimately in public, about which he noted:

I was absolutely livid with envious hatred…I wanted to do
horrible things to that couple. I wanted to inflict pain on all
young couples. …I was capable of killing them…I wanted to kill
them slowly, to strip the skins off their flesh…. The males
deserve it for taking the females away from me, and the females
deserve it for choosing those males instead of me (p. 87).

2) Rodger (2014) was continuously exposed to video games containing high levels of
aggression. One such game, with which he was intensively preoccupied from the age of 13
to the age of 19 was World of Warcraft (WoW). The following statements illustrate his addiction to this game:

I only saw school as something that took time away from WoW… I planned to spend the whole time on WoW, leveling up my character and forgetting about my horrible school life… I fully indulged myself in my addiction to WoW… I just couldn’t handle the anguish in my life anymore, and I needed a break, no matter how unhealthy and time-consuming WoW would be for me… The loneliness was torturing me so intensely that I even started up my WoW account and played constantly for the month of September… (pp. 41, 42, 49, 71, 93).

Although Rodger's obsession with this game temporarily distracted him from his stressful thoughts, it ultimately increased his aggressive thoughts, hostile attitude, and violent behavior (e.g., see meta-analysis study by Anderson, Shibuya, Ihori, Swing et al., 2010; Huesmann, 2010). Additionally, Rodger was the son of the British filmmaker, Peter Rodger, the assistant director of The Hunger Games, a notably violent film. The film contains gratuitous scenes of teenagers killing one another for sport. Rodger saw the film with his father at the red carpet premier. Further, Rodger's grandfather was a famed British photojournalist who took photos of Jewish survivors and mass graves at the liberated concentration camps in the final weeks of World War II. Thus, Rodger was continuously exposed to violent scenes that must have affected his decision to take aggressive measures in response to his intolerable emotional distress.

3) Rodger (2014) underwent training in shooting (p. 109) and saved $ 5000 to purchase various weapons for the "Day of Retribution" (pp. 116, 113). Easy access to weapons gave him greater opportunity to violently express his frustration, which would have been less possible in countries where there is higher gun control.

Availability apparently affected Lubitz's horrible criminal act as well. Just like Charles Cullen who used medications that were available in his work place for killing purposes, and Vanunu who
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took photographs of the nuclear site in his work place, Lubitz utilized his position as a co-pilot to commit murder-suicide. An additional source of availability is the car crash in which he was involved in the year prior to his deliberate air crash.

One may argue that the fact that all three murderers committed suicide is incompatible with PBT's cost-benefit principle. However, as noted previously, research indicates that when individuals are confronted with an extreme level of emotional distress, cost-benefit considerations are determined by the individual's immediate needs to relive tension (Shiv & Fedorikhin, 1999, 2002). Additionally, rationality is defined in terms of optimum solution, within the boundaries determined by information available to individuals at the decision-making stage, together with psycho-physiological and environmental constraints (e.g., Aumann, 2006; March 1978; Simon, 1955, 1956). Thus, while others may view suicide as an irrational decision, this can be seen from the standpoint of the individual's judgment as rational choice. This is consistent with Lester's (1988a, 1997, Lester & Yang, 1996) rational choice theory of suicide.

All three, Lanza, Rodger and Lubitz, meet PBT's five criteria of madness. All were intensively preoccupied with their killing and suicide intentions and this severely disrupted their daily life (criterion 1); There was no specific event that was exclusively associated with their unusual criminal act that can explain these behaviors (criterion 2); Although it is not possible to assess their level of awareness, it seems plausible that they were unaware of the underlying motive of their actions, which according to PBT is the need to enhance their self-esteem (criterion 3); Their unusual criminal actions were extremely rare (criterion 4); It seems obvious that their behaviors would be stigmatized as crazy, mad and reflection of illness (criterion 5). Further, all cases three meet PBT's two secondary criteria of stress and depression.

Conclusions: Case studies reviewed in the above section, provide strong support to PBT's four hypotheses with regard to schizophrenia and clinical insanity. These include the validation
of: 1) PBT's diagnostic criteria; 2) The idea that stress, especially the suggestion that a profound sense of incompetence, is the usual motivational cause of both schizophrenia and criminal insanity; 3) The new conception of repression as an active distraction and the idea that madness causes repression, rather than vice versa; and 4) PBT's three principles of choice of symptoms.

These cases challenge the validity of medical models as they seem unable to account for the variability of their behaviors, even if all these patients would have brain impairments. These models are also problematic because they lack objective criteria for the diagnosis of schizophrenia and criminal insanity. There seem to be no large difference between the Unabomber, Cullen and Vanunu with regard to the level of bizarreness, and yet only the Unabomber was diagnosed as a schizophrenic. The other two were diagnosed as either compulsive criminal (Cullen) or normal/ideological criminal (Vanunu). If schizophrenia is truly a brain disorder, medical models should have been able to provide medical diagnostic criteria.

Nevertheless, this evidence would not be sufficient in refuting the medical models' claim that schizophrenia is a brain disease. Proponents may argue that while schizophrenia may be a coping mechanism, as demonstrated above, in most cases schizophrenia is a direct result of neurological impairments. Hence, in order to dismiss this argument, it is necessary to demonstrate that PBT's concepts are also applicable to cases of schizophrenia where there is solid evidence that they suffer from genetic/brain flaws.
Schizophrenia with Genetic/Neurological Flaws

As was demonstrated, medical models are incapable of explaining any of the aforementioned cases of schizophrenia or criminal insanity. PBT is the only theory that can adequately diagnose schizophrenia and integrate these cases into one theoretical framework. Moreover, PBT claims that there are no fundamental differences between schizophrenia with or without brain impairments. Patients with either form suffer from severe stress and both blame themselves for their inability to resolve their stressors. The main difference between the two is concerned with the source of their self-loathing: While in atypical schizophrenia (schizophrenia with no evidence of brain impairments), the inability to cope with basic life demands stems from experiencing an inadequate social environment, in typical schizophrenia this inability stems mainly from severe neurological impairments.

Typical schizophrenics seen in clinics suffer from significant neurological damage from early childhood caused by genetic (e.g., Keshava, et al., 2005; Nuechterlein, et al., 2012; Schiffman et al., 2005; Tandon, et al., 2008) and sometimes by obstetric complications (e.g., Kunugi, 2003). Neurological abnormalities were also observed when magnetic resonance imaging (MRI) was employed (see Martin, Dzafic, Robinson et al., 2016; Shenton, Dickey, Frumin et al., 2001). As a result, these individuals have the potential to develop an incompetent personality profile, particularly when the social environment, especially the family, is pathogenic.

Indeed, typical schizophrenics suffer, prior to the development of their disorder, from severe cognitive dysfunctions (e.g., Morgan, Croft, Valuri et al., 2012; Nuechterlein et al., 2012), manifested as attention deficits (e.g., Cornblatt, Dworkin, Wolf, & Erlenmeyer-Kimling, 1996; Cornblatt, Obuchowski, Roberts, Pollack, & Erlenmeyer-Kimling, 1999; Freedman, Rock, Roberts, Cornblatt, & Erlenmeyer-Kimling, 1998; Oner & Munir, 2005), low IQ levels (e.g.,
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Byrne, Hodges, Grant, Owens, & Johnstone, 1999; Cosway, Byrne, Clafferty, Hodges et al., 2000), and poor performance in intellectual and executive functioning (e.g., Byrne, et al., 1999; Davidson et al., 1999; Ozan, Deveci, Oral, Karahan et al., 2010). Additionally, the typical schizophrenic patients are often raised in pathogenic home environments. Parents tend to be hostile, critical, domineering, over-emotionally involved, deviant communicators, and frequently impervious to the feelings and needs of others (Lukoff et al., 1984; Olin & Mednick, 1996; Rund, 1994; Tienari et al., 1993; Velligan et al., 1996; Ver Eecke, 2003). As described by Colman (1984), schizophrenics’ parents are

Deficient tutors’: they create a family milieu inappropriate for training a child in cognitive abilities essential for categorizing experience, thinking coherently, and communicating meaningfully. Coupled with feelings of inadequacy and other damage to the child’s emerging self-concept, this may help explain the later cognitive distortions, communication failures, difficulties in interpersonal relationships, and identity confusion that commonly occur in schizophrenia (p. 378).

Inevitably, due to these severe cognitive deficits and pathogenic social environments, the typical schizophrenics feel incompetent in all areas of their lives. This is consistent with studies revealing that high-risk children exhibit poor adjustment to the cognitive and social demands of school (Ayalon & Merom, 1985; Beckfield, 1985; Beisser, Glasser, & Grant, 1967; Cannon et al., 1997; Grubb & Watt, 1979; Lewine, Watt, & Fryer, 1978; Nagler & Glueck, 1985; Nagler & Mirsky, 1985; Olin & Mednick, 1996; Olin et al., 1998; Parnas & Jorgensen, 1989; Parnas et al., 1982; Rolf, 1972; Rolf & Garmezy, 1974; Schulsinger, 1976; Sohlberg & Yaniv, 1985; Spring & Coons, 1982; Watt, 1978; Watt & Lubensky, 1976; Watt, Grubb, & Erlenmeyer-Kimiling, 1982; Weintraub, Liebert, & Neale, 1975). These children also have disciplinary problems and
remote relationships with their teachers. They are emotionally unstable, exhibit difficulties in controlling their impulses, and are prone to anger and depression.

Inadequate social skills, the most severe personality features of typical schizophrenics are observable from an early age. As with atypical schizophrenics, this seems to be the major cause for their profound sense of incompetence (e.g., Bellack, Morrison, Wixted, & Mueser, 1990; Cornblatt, Carrio, Addington, Seidman et al., 2012; Davidson et al., 1999; Dworkin, Lewis, Cornblatt, Erlenmyer-Kimling, 1994a, 1994b; Hans, Marcus, Henson, Auerbah, & Mirsky, 1992; Hans et al., 2000; McClellan & McCurry, 1999; Matheson, Vijayan, Dickson, Shepherd et al., 2013; Munk-Jorgensen & Mortensen, 1992). While a poor social environment also plays a role in social deficiency, the major contributing factors seem to be neurological impairments. As noted by Cornblatt et al. (1996), the schizophrenics’ pre-morbid attention impairment predisposes them to poorer social competence, which in turn makes communication with others difficult, and inhibits their interactions with their peers.

Despite their shortcomings, in the vast majority of cases, the family and school systems do provide minimal support and security, enabling pre-morbid individuals to cope with their stress. Upon the approach of adolescence and young adulthood, a stage characterized by the need to make appropriate adjustments towards independence (e.g., breaking away from the family, choosing a vocation, and seeking a partner), high-risk individuals are likely to experience complete helplessness. Though most young people are reasonably optimistic and feel that they can exercise control over their future (Mussen, Conger, Kagan, & Huston, 1984), for the high-risk population the prospect of "the future" is more likely to induce feelings of despair, anxiety, and depression. Perhaps the most frustrating aspect for a high-risk adolescent is an inevitable intensification of social alienation at the very age when peer-group support is critical. Mussen et al. (1984) noted that emotionally unstable adolescents
Are likely to meet with rejection or indifference. In turn an awareness of not being accepted by peers and a lack of opportunity to participate in and learn from peer group activities further undermine self-confidence and increase a sense of social isolation (p. 398).

Overall, typical schizophrenics display poor premorbid adjustment over the course of childhood, adolescence, and adulthood (Gureje, Aderibigbe, Olley, & Bamidele, 1994; Hans, Auerbach, Asarnow, Benedict, & Marcus, 2000; Levitt, Shenton, McCarley, Faux, & Ludwig, 1994).

Thus, PBT agrees with medical models that genetic predispositions cause severe brain damage and that it often precedes the development of schizophrenia. A further point of agreement is that in many cases stressful life-events precede and may facilitate the onset of schizophrenia (see reviews by Phillips, Francey, Edwards, & McMurray, 2007; Lukoff et al., 1984; Teague, Drake, & Bartels, 198; Walker & Diforio, 1997). However, PBT claims that these negative personality traits (e.g., poor social skills and attention deficits), termed in literature as negative symptoms (e.g., see Buchanan, 2007; Moller, 1995; Skodlar, Henriksen, Sass, Nelson et al., 2013), are equivalent to the personality deficits of atypical schizophrenics that cause the sense of incompetence. Just like the defected personality characteristics of the atypical schizophrenics, these negative symptoms are the major stressors that cause severe depression and motivate these individuals to adopt schizophrenic behaviors as a coping mechanism. In other words, this personality profile is the major cause of stressors that motivate these people to adopt the schizophrenic symptoms of delusions, hallucinations, or disorganized speech, termed in the literature as positive symptoms (e.g., see DSM-5, 2013).

It should be noted that structural changes may occur in schizophrenic patients in the course of the disorder (e.g., Guo, Palaniyappan, Liddle, et al, 2016). These changes, however, appear to be
be the result of adverse effects of antipsychotic drugs (e.g., Fusar, Smieskova, Kempton et al., 2013; Keedy, Reilly, Bishop, Weiden et al., 2015; Torres, Portela, Borgwardt et al., 2013). Even if structural changes do occur during the course of the disorder independent of treatment, this does not invalidate PBT's claim that brain impairments are the major cause for patients' inability to cope and that the positive symptoms, such as delusions, hallucinations and illogical verbalization, are not the consequences of neurological changes, but rather coping mechanisms in response to extreme levels of stress.

In accordance with this claim, it seems likely that severe brain damages that characterize typical schizophrenics would be more common in people with intellectual disabilities than the general population. This is consistent with data indicating that schizophrenia was almost twice as common as affective disorders in relatives of propends with intellectual disability (Greenwood, Husted, Bomba et al., 2004). Intellectual disability is also linked with impairments in general abilities, adaptive functioning across social and practical domains, low self-esteem, depression, loneliness and the risk for behavioral disorders, which is three to four times greater than those with no intellectual disability (American Psychiatric Association, 2013; Crnic, Neece, McIntyre, et al., 2017; Dagnan & Sandhu, 1999; Emerson, McCulloch, Graham, et al., 2010; Garaigordobil & Pérez, 2007; Gilmore, & Cuskelley, 2014; McGillivray, McCabe, 2007; Einfeld, Piccinin, Mackinnon, et al., 2006). Accordingly, it is not surprising that schizophrenia is at least three times more prevalent among individuals with an intellectual disability than those without this disability (Greenwood et al., 2004; Morgan, Leonard, Bourke et al., 2008; Welch, Lawrie, &Muir, 2011). Most of the intellectually schizophrenic patients were assessed as borderline, and the basis of their disability was less likely to be the result of genetics of known biomedical origin, including metabolic or teratogenic effects or birth defects (Morgan et al., 2008).
Additionally, patients with intellectual disability displayed substantially greater negative symptoms (e.g., unchanging facial expression, decrease spontaneous, inappropriate affect, speech deficiency, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking and attention deficit) than those with an average IQ (Faraone, Ghirardi, kuja-Halkola et al., 2017, Thapar, 2017; Welch et al., 2011).

**Sally**: A case study of a patient named Sally (Mayer & Weaver, 2013, pp. 83-89), with a genetic predisposition to schizophrenia, can illustrate PBT's claim that stress, particularly due to poor social skills, may lead to self-loathing and motivate the adoption of schizophrenia. Sally had some genetic vulnerability to schizophrenia as her maternal grandfather was known in the family as eccentric, and was seen by others as "crazy." Her parents had a marriage filled with conflicts and even separated for 10 months when Sally was 2 years old. Although they reunited, the marital conflicts continued. Sally was of above average intelligence, but her performance was only average or lower in most subjects. She had occasional friends but did not form any deep friendships. She was a quiet, mildly shy child and developed odd mannerisms, which "served to further distance her socially" (p. 84). Upon graduation from high school, Sally lived in the dormitory at a nearby college she attended, where she developed her schizophrenic disorder. She started talking to herself, and her assigned roommate quickly moved to another room. The dorm counselor found Sally sitting in a chair, staring at the floor. She was unresponsive, and her limbs could be moved about as if she were plastic doll. Medical models would attribute Sally's schizophrenic symptoms to adverse neurochemical changes, which were supposedly triggered by environmental stress. In contrast, PBT claims that her symptoms were purely the result of an intolerable level of stress. Self-
loathing, where she perceived herself as the core for her inability to cope, motivated her to adopt the schizophrenic symptoms.

The fact that Sally's schizophrenic breakdown coincided with a stressful social environment is consistent with a follow-up study that found that an improved social environment, such as a kibbutz, which places high value on social interaction (e.g., Sohelberg, 1985), facilitates the development of schizophrenia (Mirsky, Silberman, Latz, & Nagler, 1985). Not only does social interaction become more difficult and frustrating the more successful the peers are, but social comparisons by which people determine their worth, becomes more painful (see Wills’ downward social comparison theory, 1981).

Sally's symptoms are much less sophisticated repressive measure than those of the aforementioned cases, seems to be primarily due to her low cognitive abilities. Her symptoms served the controllability demands, as they immediately caused her frustrating roommates to leave her room and eventually it distanced her from the stressful school environment. Regarding availability, not enough information is given, but it may be that indifference and talking to oneself are spontaneous reactions that enable one to block the accessibility to stress-related thoughts.

It is worth mentioning that Sally meets all PBT's five criteria of madness. While it is redundant to specify all criteria, it should be mentioned that the patient's symptoms occurred in the absence of events that could account for the behavioral change. Although medical models claim that schizophrenic symptoms are direct consequences of adverse neurological changes, they cannot demonstrate these effects with specific cases, such as the case of Sally.

Jennifer Plowman: Jennifer was genetically vulnerable to schizophrenia, as her biological mother was schizophrenic. The onset of her symptoms occurred during late adolescent years, following several stressful events (see Schwartz, 2000, pp. 370-411). At age 13, Jennifer found
out that she was adopted. At this time, she also learned that, after giving birth to her at age 16, her biological mother had spent the next 10 years in and out of mental hospitals and eventually died from an overdose of her medication mixed with alcohol. Several years after learning of this tragic news, Jennifer graduated from high school and began university, where she continued to do well in her studies. A few years later, her father ran into financial problems and sold his business and their house. Sometime afterwards, he died of a heart attack. Jennifer found a job as a file clerk but lost her job when she became forgetful and sloppy in her work. Shortly afterwards, she developed schizophrenic symptoms.

Jennifer's stepmother admitted her to a hospital where she underwent a 3-day evaluation. Although Jennifer did not answer most of the questions on the mental status examination, she was not silent. She kept up a constant chatter in which she jumped from one topic to another and often laughed unexpectedly. Her mother noted that Jennifer gave up showering, would laugh unexpectedly and would talk to herself when she was alone in her room. On one occasion when Jennifer was alone in her room, her mother heard her say, "Stop laughing. I am not funny." Jennifer refused to leave the house and claimed that people could read her mind. The excerpt below, recorded during intake interview illustrates Jennifer's impaired informational processing:

"Men need sex. I have sex 10,000 times. That window is in the room because you want patients to know the color of the world. I know the president. He lives in town … Where are the mikes and cameras hidden? Is this logomouth here to get me nervous? My father died last year, leer, jeer, tears on my pillow, pain in my heart over you, what can I do? There is nothing wrong with me, you know. I don't know why I am here. I'm fine (Schwartz, 2000, p. 373)

Jennifer's disorganized speech can be seen as a deliberate coping mechanism aimed to alleviate her intolerable emotional distress. She was subjected to a series of stressors that
caused her to experience a deep sense of incompetence. The major source of her stressors, which is associated with a genetic predisposition to schizophrenia, was her negative personality traits, especially attention impairments and poor social skills. These stress-producing characteristics, together with several environmental stressors (learning that her biological mother was in and out of mental hospitals and died of a drug overdose, the bankruptcy and death of her stepfather, and her dismissal from work), elevated her emotional distress to an intolerable level. The deliberate disruption of her perceptive and thinking processes, which did not require any sophistication, enabled her to both block the accessibility and inhibit the production of thoughts relating to self-loathing, thereby alleviating her extreme level of depression.

**Childhood Schizophrenia: The Case of 5 1/2-Year-Old-Girl:** Childhood schizophrenia is extremely rare, affecting 1 in 10,000-30,000 children, and refers to schizophrenic symptoms that their onset are before 12-13 years of age (Baribeau & Anagnostou, 2013; Foster, Swartz & de jager, 2006). Essentially, these patients display the same type of symptoms as Jennifer and Sally (see pp. 62-63). Disorganized speech and disorganized behaviors are common features, hallucinations and delusions are less complex than in adults, and visual hallucinations are more prevalent. Although genetic risk and brain impairment are strongly associated with this disorder (Baribeau & Anagnostou, 2013; Sporn, Greenstein, Gogtay et al., 2003), just like typical schizophrenia, its etiology remained mystery. Similar to typical schizophrenia, these children lack social skills and have severe cognitive deficits that produce a profound sense of inadequacy. Usually the family and the social environment of high risk children at early ages are not highly stressful, to the extent that it makes the child's life intolerable, as seen in the above cases of Jennifer and Sally. However, sometimes these situations may be so extremely stressful, that it leaves the high-risk child no better option than to employ extreme measures that psychologically disconnect him/her from the pathogenic social environment. In these cases, the child may adopt the schizophrenic
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simplistic and unsophisticated symptoms to relieve the unbearable emotional distress, as seen in the case study below.

The case refers to a 5 1/2 year-old girl who had shown bizarre behavior and speech during the past three months (Coskun & Zoroglu, 2008). She was talking to herself, alternating crying and laughing without any reason, and showed an increased level of hyperactivity. This period lasted for one month. Then, she started to say "there is a grave", my friend died, somebody killed her with a knife". She begun to lick her palms and swear frequently in an unusual way without any reason. For ten days, she did not talk to anyone or respond to any comments. She lost interest in her toys and continued to be aggressive to her younger brother. She was not eating or dressing herself. At the first interview, she did not respond to any attempt at communication and there was little eye contact, with empty and meaningless looks. She did not have any meaningful words. She was talking to herself silently and was sometimes smiling or using other facial expressions as she was speaking with someone.

Although the patient had a family history of schizophrenia, medical and neurological examinations showed normal cranial MRI, normal sleep EEG, and no significant abnormalities. While this data reduced the possibility that the patient's bizarre behaviors were a direct result of brain disease, there seemed to be little doubt that undefined brain impairments played a major role in shaping a handicapped personality structure with poor coping abilities, such as difficulty in maintaining relationships with her peers. A more significant stressor that precipitated her bizarre behaviors were marital conflicts between the parents, and "a history of physical abuse and neglect, as the father sometimes physically punished the child before and during the illness" (p. 144). Her bizarre behaviors can be seen as a rational coping mechanism as they blocked the accessibility of stress-related thoughts and enabled significant control over the stressful environment both in soliciting attention and in stopping the father's physical abuse.
Hallucinations

Hallucinations, especially auditory hallucinations, are a cardinal feature in schizophrenia and occur in 70-80% of patients (Aleman, 2008). Medical models may argue that hallucinations are mediated through biological mechanisms that are out of the patients' control. However, despite tremendous research, the mechanisms that control these symptoms remain controversial (see a review by Jones, 2010; Tracy & Shergill, 2013). The common explanation for auditory hallucinations suggest that they are caused by inner speech or traumatic memories (Allen, Aleman & McGuire, 2007; Jones, 2008; Laroi, Sommer, Blom, Fernyhough et al., 2012; Tracy & Shergill, 2013; Waters, Allen, Aleman, Fernyhough et al., 2012). The inner speech model proposes that these experiences result from self-monitoring deficits, where inner monologues erroneously perceived as an autonomous, non-self-voice. Hallucinations are viewed as a subjective phenomenon of talking to oneself and developing an auditory-articulatory image of speech, or as talking to oneself in the form of thinking in words. Indeed, research that examined cerebral activation using a fMRI (functional magnetic resonance imaging) found that brain areas which linked to speech production, such as the right homologue of Broca's area, become activated during auditory hallucinations (see Allen et al., 2007; Sommer, Diederen, Blom, Willems et al., 2008). In contrast, the memory model claims that auditory hallucinations are the result of the unintentional activation of traumatic, abuse experiences or the failure to inhibit these memories.

These models have a number of shortcomings that question their validity (see Jones, 2008; Hugdahl, 2009; Waters et al., 2012). For example, it has been argued that the claim of a self-monitoring deficit is inconsistent with the fact that 71% of schizophrenic patients reported that their auditory hallucinations' accent differed from their own. Similarly, since only about 10-20% of those are voices linked to memories of trauma, it is hard to see how the memory model
can account for other hallucinations, such as benevolent voices (e.g., when patients experience listening to angels or music). Accordingly, Waters et al., (2012) claimed that these models "Do not provide a comprehensive account of the phenomenological diversity of AH [auditory hallucinations]" (p. 684). Likewise, Jones (2008) concluded "It is worth considering an alternative view, namely that neither of these models is correct" (p. 570). Instead, Jones suggested that the underlying mechanism of auditory hallucinations might be neurological, such as stimulation of the temporal cortex. However, he noted, "It gives no clear reason why many AVHs [auditory verbal hallucinations] tend to be focused on everyday activities, and directed at the voice-hearer. Furthermore, such a model would also appear to predict that the content of AVHs should be highly repetitive. This is the case in some, but by no means all AVHs" (p. 571).

The main problem with these explanations is that they neglect to integrate studies and clinical data suggesting that hallucinations have an important psychological function in reducing the individual's emotional distress. As mentioned before, extinguishing hallucinations and delusions tend to increase depression, low self-esteem, hopelessness, and suicidal behavior (e.g., Acosta et al., 2013; Balhara & Verma, 2012; Crumlish et al., 2005; Ekinici et al., 2012; Lysaker et al., 2007; Melle & Barrett, 2012; Yu-Chen & Yia-Ping, 2011). This may explain Nash's statement that "taking away his delusions and hallucinations would be taking away his genius, his most treasured gift (Weuden, 2002). Additionally, an explanation of these experiences would be incomplete without addressing the symbolic meanings that these behaviors may have, as shown, for example, in the case of John Nash.

Accordingly, while a genuine understanding of auditory hallucinations must consider the bulk of research indicating that this experience is associate with inner speech (Allen et al., 2007; Jones, 2008), it is also necessary to integrate the aforementioned research and clinical data suggesting that both hallucinations and delusions are coping mechanisms which serve the
individual's psychological needs. As discussed before, in addition to their powerful repressive tools, these symptoms enable patients to cope with frustrating feelings of low self-esteem and deep sense of incompetence. Although these behaviors are intentional, they are perceived as beyond the individual's conscious control, just like other types of bizarre behaviors, due to the psychological processes involved in producing the unawareness of the knowledge of self-involvement (KSI) and self-deceptive beliefs, as will be discussed in Part II.

For example, Percy King, who as noted before suffered from paranoid schizophrenia, developed delusions of invisible pursuers who had been after him since he left his home thirty years ago (White, 1964). In one occasion, when walking in an unfamiliar part of New York City, King heard someone exclaiming twice: "Shoot him!" Thinking that gangsters have mistaken him for someone else, he rushed from the spot, trying to disappear in the crowd. However, the gangsters pursued him: "I knew they were pursuing me because I still heard their voices as close as ever, no matter how fast I walked" (White, 1964, p. 79). It appears that by intensively focusing both on his inner speech and the pursuing delusion, King could not be aware of his KSI in the deliberate production of the inner speech.

The significant relationship between intrusive thoughts and hallucination (e.g., Morrison & Baker, 2000), may be because the symptoms are not always effectively blocking the accessibility of stress-related thoughts. For example, Nash noted, despite the "horror of hospital and illness, these ideas keep coming into my head and I can't prevent it" (p. Nasar, 1998, p. 258) and that his head was "as a bloated windbag, with voices which dispute within" (Nasar, 1998. P. 328). The insufficiency of his positive symptoms to block the accessibility of stress-related thoughts was facilitated by stimuli of his old environment. As stated, his difficulty to repress stress-related thoughts may explain his stubborn refusal to return to the USA, even when the Swiss authorities forced him to leave Geneva (Nasar, 1998). In line with
this evidence, Morrison et al., (2000) reported that "for both anxiety-related and depression-related intrusive thoughts it was found that patients experiencing auditory hallucinations found such intrusions more worrying and more difficult to remove and disapproved of such intrusions more than both control groups" (p. 1104).

Gender Differences

While earlier studies reported that the prevalence of schizophrenia is the same for men and women, in recent years more controlled studies show that the rate for female-males is about .41-.92 vs. 1 (Ochoa, Usall, Cobo, Labad et al., 2012). In addition, research has consistently reported that the age of onset of schizophrenia is younger among males; a recent meta-analysis shows that on average the onset of schizophrenia among males is 1.63 years earlier than females (Eranti, MacCabe, Bundy, & Murray, 2013). Since both men and women schizophrenics usually have very low social ties, it seems unlikely that the cost of social embarrassment can account for these differences. Although other explanations were suggested (e.g., Blanz, Scmidt, Detzner, & Lay, 1994; Donoghue, Doody, Murray et al., 20014; Patton, Riecher-Rössler, & Häfner, 1994), this variability might be partly due to the poor work ability of the high risk population and their chances to be integrated within the working force (Cohen, 1993; Terzian, Andreoli, Oliveria et al., 2007). Thus, since social pressure to work is greater for men than for women (e.g., Terzian et al., 2007; Shankar, Kamath, & Joseph, 1995; Thara & Joseph, 1995), and high-risk individuals have poor working skills (e.g., Salokangas & Stengar, 1990; Thara & Rajkumar, 1992), high-risk men either might not find suitable jobs or fail to keep them if they do. Consequently, it is expected that the onset of schizophrenia will be at an earlier age for men, and that the rate of this disorder among them will be higher. While in neurosis, the cost of inability to work prevents the adoption of these behaviors among men, in psychosis the stress resulting from the inability to work precipitates the onset of
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schizophrenia among high-risk men. This may be advantageous for men as they can attribute their failure to their illness.

Conclusion

The above data supports PBT's claim that schizophrenia is a coping mechanism in response to a profound sense of self-inadequacy. They intuitively feel that these symptoms are the best way to relieve their intense levels of depression. As noted by Robert Laing (1964), the Scottish existential psychiatrist:

The experience and behavior that gets labeled schizophrenic is a special sort of strategy that a person invents in order to live in an unlivable situation…the person has come to be placed in an untenable position. He cannot make a move…without being beset by contradictory pressures both internally, from himself, and externally, from those around him. He is, as it were, in a position of checkmate (p. 187).

While there are different ways that individuals may reach this state of "checkmate", either through a pathogenic social environment, as in the case of the Unabomber and Nash, or via severe neurological impairments, as in typical schizophrenia, the underlying motivational cause remains the same: An extreme level of self-loathing. The advantages of this theoretical position, compared to the traditional medical models' explanation, are in its ability to: 1) integrate schizophrenic cases in which there is no evidence for genetic or neurochemical impairments together with studies that found solid data of genetic flaws and brain damage; 2) account for the large variability of symptomatology of this disorder; and 3) unify psychoses and neuroses, as will be demonstrate below, under one theoretical framework. In considering these advantages, it is important to consider the fact that current explanations of schizophrenia are "still in controversy and remain unsatisfactory to researchers and
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clinicians. The central roadblock to progress in this field is the lack of a cohesive, integrated model that incorporates the known facts of the illness” (Keshavan, Nasrallah, & Tandon, 2011, p. 3).

Neurotic Disorders

Research Findings

Numerous studies confirm the significant relationship between current stressful life-events and neurotic disorders. Examples include agoraphobia and panic disorder (e.g., Michelson, June, Vives, & Testa, et al., 1998; Milrod, Leon, & Shear, 2004; Scocco, Barbieri, & Frank, 2007; Venturello, Barzega, Maina, & Bogetto, 2002; Wardle, Hayward, Higgitt, Brewin et al., 1997), OCD (e.g., de Silva & Marks, 1999; Gershuny, Baer, Radomsky, Wilson et al., 2003; Sasson, Dekel, Nacash, Chopra et al., 2005), conversion disorder (see review by Rofé & Rofé, 2013), dissociative fugue (e.g., Glisky, Ryan, Reminger, Hardt et al., 2004; Ishikura & Tashiro, 2002; Masserman, 1946), eating disorders (e.g., Beckman & Burns, 1990; Chesler, 1995; Okon, Greene, & Smith, 2003; Rabe-Jablonska, 2003), and DID (see review by Dalenberg, Brand, Gleave, Dorahy et al., 2012).

In order to illustrate the effect of stress in the etiology of neuroses and that PBT's concepts are also applicable to neuroses, a number of case studies of neurotic disorders will be presented. These cases are divided into two major types of stress: Environmental stress and unacceptable impulses. In addition, this section will review studies which show that the choice of a specific symptom is affected by the individual's available experiences, such as medical conditions,
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family, peer group and mass media. A review of both the above studies and clinical data weaken further the theoretical position of medical models and strengthen PBT's claim that all bizarre behaviors share similar etiology.

Case Studies

Environmental Stress

William Ellery Leonard (1927): This case has special importance as it demonstrates the superiority of PBT upon traditional theories, but also the disadvantage of the psychoanalytic concept of repression. An additional importance of this case is that it illustrates the inadequacy of behavior-cognitive theories in accounting for the development of bizarre phobia, such as panic and agoraphobia. This case is an autobiographical account of Leonard (1927), a poet, writer, and professor at the University of Wisconsin, who suffered from agoraphobia. As described below, Leonard experienced a sudden panic attack, while standing alone on a bluff overlooking a quiet lake, in the absence of any environmental factors that could justify the dramatic shift in his behavior,

Then on the tracks from behind...comes a freight train, blowing its whistle. Instantaneously diffused premonitions become acute panic. The cabin of that locomotive feels right over my head, as if about to engulf ... My sub-consciousness knows what the torture is; and makes my voice shriek, as I rush back and forth on the bluffs: My God, won’t that train go, my God, won’t that train go away!’ (Leonard, 1927, pp. 304-307).

The panic had such a dramatic impact on Leonard that he stated when he was taken to his parents' home, "Father and mother, this looks like the end. I guess I am dying" (p. 308). As a result of his "illness", Leonard could not go a hundred feet beyond his parents' home.
In the morning, though feeling strangely weak in body, I start out on a little walk down the street. Within a hundred feet of the house I am compelled to rush back, in horror of being so far away... a hundred feet away... from home and security. I have never walked or ridden, alone or with others, as a normal man since that day (p. 308).

Later, when the university authorities threatened to dismiss him due to his long absence, Leonard moved with his parents to an apartment across the street from the university (pp. 328-329). In his self-hypnosis, conducted more than ten years after the onset of his symptoms, Leonard recalled a childhood trauma at the age of two when he was almost run down by a thundering train. Both Leonard, who had extensive knowledge of psychoanalytic theory, and psychoanalysis' advocates (e.g., Allport, 1929; Culler, 1930; Taylor & Culler, 1929, 1931; White & Watt, 1981), attributed Leonard's symptoms to repression of the train trauma.

However, it is difficult to accept this interpretation for the following reasons. First, a large number of studies show that people remember rather than forget their childhoods and current traumas (e.g., Piper et al, 2008; Rofé, 2008). Second, the train episode was recorded in a diary Leonard's mother started keeping for him three days after the incident. She noted that Leonard was "Talking a great deal about it ever since" (p. 16), which means that he remembered the event, rather than repressed it. The fact that he contemplated the traumatic event is inconsistent with the psychoanalytic assumption that repression is an involuntary, unconscious mechanism causing the immediate removal of the threatening experiences from the individual's conscious (e.g., Alexander, 1932; Cramer, 2001; Fenichel, 1946; Wilson & Dunn, 2004). Third, Leonard continued to travel by trains afterward, so even if a fear originally developed, it should have been extinguished through repeated exposure to locomotives. Leonard himself testified that he "Developed no
specialized fear of locomotive... on the contrary, trains became a childish passion" (p. 24).

Fourth, even if Leonard was subconsciously affected by the train episode, he should have developed a train phobia not agoraphobia. Fifth, a thorough review of controlled research shows no significant relationships between repressed traumas and specific neurotic symptoms (see review by Rofé, 2008).

Contrary to the psychoanalytic position, PBT claims that Leonard deliberately adopted the panic-agoraphobic symptoms as a coping mechanism, an idea that occurred to him intuitively upon seeing the freight train. The panic attack occurred at the age of 36, soon after his wife, the daughter of a highly respected family, committed suicide. The community regarded Leonard as demanding and self-centered and almost unanimously blamed him for her death. Leonard became extremely miserable, he was extensively preoccupied by the death of his wife, and it seems that the major function of his neurotic disorder was repression. Instead of being engaged with stress-related thoughts, such as self-criticism of his role in his wife's death, he chose to make himself the victim of a serious disease. The intensive preoccupation with his symptoms enabled him to block the accessibility of stress-related thoughts and relieve his intolerable level of depression. Additionally, the symptoms enabled him to distance himself from his ostracizing community, who blamed him for his wife's suicide, and avoid potential rejection by colleagues at the university. Subsequently, when the university authorities threatened to fire him for his absence (p. 328)—when the controllability demands changed—he moved closer to the university to resume his teaching obligations. Leonard also adapted his agoraphobic symptoms in accordance with his unique personal needs; he was able to ride his bicycle and purchase merchandise downtown (pp. 343, 346) and even travel twice to Chicago and once to New York to meet his fiancé. He
rationalized this violation of his "illness" by saying he could control his phobia because "the speed of the bicycle magnified my beat" (p. 343).

Leonard's panic disorder was affected by the principle of availability as well. Given the above evidence concerning traumatic events, it seems likely that he consciously remembered the childhood incidence, when he saw the freight train. Thus, considering his strong belief in psychoanalytic theory (see Leonard, 1927, pp. 323-324), he intuitively chose to develop panic and agoraphobic symptoms both because they served his psychological needs and as it enabled him to deceive himself that they were beyond his conscious control, as will be elaborated on later.

Regarding PBT's diagnostic criteria, Leonard's panic disorder fulfills both the five major and the two secondary criteria. The behavior intensively preoccupied his attention and disrupted his daily functioning (criterion 1); the radical change in his behavior cannot be associated with a specific factor that is exclusively linked with his symptom (criterion 2); he was completely unaware of the underlying causes for the dramatic change in his behavior (criterion 3); his disorder is extremely rare (criterion 4); and Leonard himself stigmatized his behavior as reflection of mental illness (criterion 5). Additionally, his symptoms fulfill the secondary criteria, as they developed following a stressful life-event and he was extremely depressed.

**Brady and Lind (1961):** Freud, who coined the term conversion disorder (Breuer & Freud, 1895), believed that the repressed energy of trauma or conflict somehow "converted" into physical ailment by damaging the individual's voluntary motor (e.g., paralysis and seizures) or sensory system (e.g., blindness). However, the underlying causes of this disorder remain a mystery that has only become more complicated as studies that
refute the existence of the Freudian repression (e.g., Piper, Lillevik, & Kritzer, 2008, Rofé, 2008). Moreover, recent neurological findings seemingly indicate that this behavior is controlled by biological mechanisms (Van Beilen, Vogt, & Leenders, 2010). Accordingly, researchers suggested changing the name of conversion disorder to "Functional Neurological Disorder" (e.g., Stone, Lafrance, Brown, Spiegel, et al., 2011), which DSM-5 accepted to some extent (American Psychiatric Association, 2013). However, these findings complicate the understanding of this disorder (see Kanaan, Carson, et al., 2010; Row, 2010; Stone, Vuilleumier, & Friedman, 2010). In a review article, it was demonstrated that PBT is the only theory that adequately integrates research and clinical evidence pertaining to the development and treatment of conversion disorder into one theoretical system (Rofé & Rofé, 2013). As in psychoanalysis, PBT preserves the concept of "conversion," since preoccupation with the stressor is replaced with symptom-related thoughts. In Freudian terms, the repression of psychological energy (i.e., contemplation of stress-related thoughts) is converted into preoccupation with a fictitious physical ailment.

A clinical example of conversion disorder is the case of a 40 year-old man who developed hysterical blindness in response to an unbearable level of stress (Brady & Lind, 1961). The patient, described as immature and irresponsible, left school early (eighth grade) and had trouble keeping even simple jobs. He depended greatly on his wife, whom he described as "often nervous and upset," and was under almost constant harassment by her and his mother-in-law. Shortly after his marriage, at the age of 23, the patient was drafted into the army and served three years. While in the army, the patient developed an eye infection that resulted in partial loss of vision in one eye. Consequently, he received a medical discharge and a small pension. Over the next twelve years, the patient held several
simple jobs, none of which lasted more than a year, and he largely depended on aid from relatives and public assistance. During this period, he suffered a recurrence of his eye infection. He requested an increase in his pension, but was refused because his visual acuity had not decreased.

On one occasion, while grocery shopping with his wife and mother-in-law, suddenly, without any immediate precipitating event, the patient became completely blind in both eyes. This blindness occurred at a time when his wife and mother-in-law were unusually demanding, requiring him to perform various chores under their supervision. It seems that the stress became intolerable as his wife and mother-in-law became more demanding and critical, and the preoccupation with his blindness enabled him to cope with his unbearably stressful life. The patient’s attention was further occupied with extensive medical examinations (which failed to find a physiological cause for his blindness), prolonged, unsuccessful psychiatric treatment, and behaving like a blind person (e.g., attempting to learn Braille). Thus, like the former case, this case demonstrates the advantage of PBT's concept of repression compared with psychoanalysis, which also enabled the preservation of the name of conversion coined by Freud for this disorder. The hysterical blindness also met the patient's controllability demands as it successfully stopped the constant demands and criticisms of his wife and mother-in-law. The patient chose this specific behavior because of its availability where he exaggerated his eye infection to blindness.

This case also reinforces the usefulness of PBT's diagnostic criteria of madness. The symptoms heavily preoccupied the patient's attention and severely disrupted his daily functioning, which meets the first criteria. The sudden onset of his symptom occurred in the absence of any event that is exclusively linked with and can account for this behavioral
change (criterion 2); The patient was unaware of the cause of his symptom and he was completely unaware of the underlying causes for the dramatic change in his behavior (criterion 3); his disorder is extremely rare (criterion 4); and his blindness was stigmatized by his behavior as reflection of mental illness (criterion 5).

**Brandt and Mackenzie (1987):** This case refers to a 26-year-old woman who developed an intrusive fear of contamination from rat germs. After she discovered that her husband engaged in an extramarital affair, she began to compulsively wash her hands. The symptoms were exacerbated during her pregnancy and she "would not allow her husband or daughter to touch her" (p. 362). These behaviors intensively occupied her and thereby significantly reduced the accessibility of stress-related thoughts. They also increased her controllability over the stressor by transferring all her household duties to her husband. The effect of availability is associated with the fact that as a child she saw a rat in her family's garage while being sexually abused by her brother. Years later, at age twenty-six, when she found the extramarital relationships of her husband, she chose to alienate herself from the painful situation by directing her feelings of disgust toward the available symbolic representation of her past abuse—the rat. These behaviors intensively occupied her and thereby significantly reduced the accessibility of stress-related thoughts. They also increased her controllability over the stressor by transferring all her household duties to her husband.

Another example of neurotic disorders following stressful life-events concerns possession syndromes, which meet all of PBT's five criteria, where patients believe spirits control their body (see Adityanjee et al., 1989; Ravenscroft, 1965; Seltzer, 1983). Patients utilize their available cultural experiences of spiritual possession to develop bizarre behaviors that meet
their repressive and controllability demands. Adityanjee et al. (1989), in discussing the frequency of this psychiatric syndrome in India, noted,

The ‘possessing spirit,’ through the patient, makes various demands on the surroundings, usually on close relatives who humbly comply with them. This sometimes ends a single episode of possession, although the accompanying reinforcement ensures a recurrence in the event of a stressful situation. In these cases, the symptoms of spirit possessions... help in the release of strangulated affects. Such behavior focuses the attention of the family on the individual, valuable time is gained, and the resulting structural realignment of forces within the family often improves the precipitating condition (p. 1609, see also Akhtar, 1988; Claus, 1979; Grisaru & Witztum, 1995; Mischel & Mischel, 1958).

For example, a forty-year-old mother of four children who lost her husband to a sudden illness and managed to live reasonably well for seven years until she faced a crisis in her business (Wijesinghe, Dissanayake, and Mendis, 1976). Subsequently, the spirit of her late husband possessed her. During the trance state, the spirit called out to friends and relatives, imploring them to help the subject in her distress. There was a good response to this appeal and her relatives rallied around relieving her of much of her financial burdens. This led to a gradual decrease in the frequency of attacks. (p. 137).

**Helen's Case of Anorexia Nervosa:** Money, Davies, and Tchanturia (2011) reported a case of a 19-year-old, Helen, suffering from anorexia nervosa. Helen experienced a difficult childhood, during which she witnessed her father abuse her mother. Her parents separated when she was young. Her mother's second partner also acted violently, and they separated shortly after Helen was first admitted to an adolescent inpatient unit for anorexic patients.
Helen was a successful athlete and began competitive gymnastics at the age of seven. She trained four to five times a week and described this as a way of avoiding her problems at home, described by PBT as normal repression (see Rofé, 2000, pp. 105-106). At the age of 14, Helen suffered an injury preventing her from participating in any sport for 6 weeks. During this time, she began to lose significant amounts of weight. From then on, she spent the majority of her time in inpatient wards. The authors noted,

Until this point, athletics had been Helen's means of escape from home life and the difficult feelings this created, alongside giving her a sense of being in control of an aspect of her life. Exercise had become a way of managing her feelings of anxiety. Without it, Helen needed an alternative way to gain a sense of control in a chronic home life. This became the function of her [anorexia] (p. 115; for additional case study of anorexia see Karbasi, 2010).

Money et al., noted that in addition to a means of distraction, the patient "perceived the AN [anorexia] as a means of gaining attention from her mum and protecting her from further violence… AN became a means to manage difficult feelings and ensured that she was looked after. It enabled her to move away from the caring role she felt toward her mother. She craved stability, warmth, and guidance from her mum and found this was more present when she became unwell" (p. 115).

Thus, Helen was subjected to difficult life conditions during her childhood, where she used her athletic skills to block the accessibility of stress-related thoughts (i.e., normal repression). When she lost this coping mechanism, as a result of injury, and apparently experienced intensification in her level of stress, she adopted anorexia nervosa. This pathological coping mechanism enabled her to both repress stress-related thoughts and to shape her stressful environment to serve her psychological needs.
**Childhood Dissociative-Identity Disorder (DID):** Dissociation is a normal distractive mechanism which enables the child "to avoid the pain of psychological surrender" (McElroy, 1992, p. 839) by imagining that "the event [is] happening to someone else" (Fahy, 1988, p. 602). As noted by Young (1987), "The dissociation into personalities is thought to begin in childhood as a defensive operation, protecting the patient from the intolerable experiences associated with the early abuse" (p. 249). Although this coping response usually remains within the boundaries of normal behavior, in some extreme cases, children may sometimes develop DID. This is illustrated in a case study reported by Spitzer et al. (1983). As a child of nine, the patient’s father placed her in an orphanage, where she suffered severe mistreatment by the staff members. Complaints to her father did not help, and in fact they made the situation worse. As a measure of coping, the girl developed an imaginary friend that she named "Ellen", which enabled her to bear the suffering. Unlike her dominant personality ("Sue-Sue"), which was very timid and took her punishment stoically, Ellen was able to resist her abusers. "Ellen frequently yelled at and hit back at her tormentors when they tried to touch her" (Spitzer et al., 1983, p. 39). The girl ceased to practice this behavior at the age of 9, after her father got remarried and she left the orphanage.

**Roni Leibovitch:** As demonstrated above, usually low self-esteem or feelings of inferiority are associated with psychotic symptoms, namely mad behaviors that contain delusions, hallucinations, or disorganized speech. Nevertheless, in some rare cases, when the individual's self-esteem is damaged as a result of a specific stressful event, he/she may use neurotic disorder to inflate his/her self-worth. This mode of coping is illustrated in the case study of Roni Leibovitch, which received a large amount of publicity in Israel (see a biographical account by Maron, 1995). Leibovitch, a 30 year-old married man, robbed 22 banks between February 1989 and October 1990. He would arrive at the bank on his motorcycle, threaten those
present with a pistol, and rob the cashier of an average of $4,000 each time. He led the police on a wild goose chase, and despite significant police efforts, it took nearly two years to catch him.

Although the initial robberies appeared to be normal criminal acts, the expected low benefit compared with the extreme high risk, which continuously increased, questions the initial impression. Indeed, in a study in which 50 students and 50 prisoners evaluated Leibovich's behavior with regard to the first five robberies, 80% of the students diagnosed him as normal and 20% as abnormal, as opposed to 36% and 64% respectively in the criminal group. However, both students and prisoners (94% and 92%, respectively) diagnosed Leibovitch as abnormal when they evaluated his behavior with regard to the last two robberies, for which the risk became extremely high (the entire police and the public made every effort to catch him), compared to the small financial gain.

Not only do Leibovitch's behaviors appear senseless, but like all the above cases, he too was unaware of the underlying motive for his conduct. The lack of awareness is evident in his confession to the police when he said, "I made a terrible mistake... I still have not begun to absorb it. What foolishness. I do not know what got into me all of a sudden. A shame, what a shame" (Maron, 1995, p. 233). Likewise, in a letter to his father after his arrest he wrote that he does not know the reasons for his behavior, saying, "Even between me and myself I cannot provide exact answers [for the underlying causes]" (Maron, 1995, p. 251). As noted by Raine (1994), "Despite Leibovitch's attempts to explain his motives in numerous monologues, the credibility gap remains" (p. 10).

Unlike the aforementioned cases, Leibovitch had successful adjustment records prior to his insane criminal act. He lacked a criminal record, succeeded in high school, graduated university, completed the Israeli army as a Major, and married (Maron, 1995). Nevertheless, he was similar
to the aforementioned case studies in terms of a deep sense of failure and strong feelings of inferiority. He was the son of a wealthy industrialist family but after a few years in the family business, his father relieved him of nearly all managerial duties in favor of his brother and nephew. Consequently, as testified by Leibovitch himself (Maron, 1995, pp. 29-34), he became heavily preoccupied with extremely painful thoughts relating to his self-perception as a failure and his animosity towards his family, whom he blamed for his unfortunate situation. Leibovitch remarked, "From the day my father and brother joined in the conspiracy against me, the matter became more difficult, sevenfold... I was hurt, surrounded by feelings of anger, humiliation, and a wish to take revenge, to mend, to pay them back in kind" (Maron, 1995, p. 29). He was extremely depressed and not only did therapy fail to help him but he viewed his "turning to a therapist as admittance of [his] weakness, downfall and [his] total lack of self-worth..." (Maron, 1995, p. 35).

The principle of controllability affected the choice he made to rob banks due to the following three factors: 1) Increasing debts; 2) A desire to humiliate his respectable family, particularly his father, whom he blamed for his failures (Maron, 1995, p. 36). Leibovitch was infuriated with his family to the point that he did not care if he was arrested, since it would humiliate his family; and 3) A need to boost his self-esteem. The public became amused with Leibovitch’s brazen success, and he was "portrayed by the press as something between a national hero and a latter-day Robin Hood, who coolly carved his way through the security of 22 banks" (Raine, 1994, Jerusalem Post, December 16, p. 10). The media’s enthusiastic acceptance of the Biker Bandit’s success in fooling the police enhanced Leibovitch’s very low self-esteem. No less important in boosting his self-esteem was the high regard which, according to Maron (1995), Leibovitch received from his son (p. 120), wife (p. 147, 182) and friends (pp. 181-182), before his arrest. Thus, Leibovitch's insane criminal behavior provided him a powerful repressive measure and enabled him to have significant control over his stressors, mainly his deep sense of incompetence.
Liebovich's decision to become the "Biker Bandit" was affected by two main available experiences: 1) His strong attraction to motorcycles since childhood, which motivated him to purchase one at the age of sixteen. Several weeks before his first bank robbery, when he experienced intense depression but no criminal aspiration, he bought a new motorcycle, despite the objections of his wife. As noted by Leibovitch, it "constituted some comfort for days of darkness and despair which came to me" (Maron, 1995, p. 36); 2) the availability of the pistol he had purchased for protection, as his family's factory was located in the occupied territories (Maron, 1995, p. 37). However, Leibovitch would not use the specific type of mad behavior if this would not serve his unique controllability need. The third principle that affected his intuitive decision to use this type of bizarre behavior was cost-benefit principle. Although he regretted his actions after his arrest, this was not the case during the long period when he executed the robberies. These behaviors repressed the stress-related thoughts, helped him pay his debts, boosted his self-esteem, and thus significantly reduced his level of depression.

It is also important to note that Leibovitch met all of PBT's five major criteria of madness. The robberies intensively preoccupied his attention and severely disrupted his daily life (1); The onset of the senseless behaviors was not associated with specific observable event which uniquely associated with this behaviors (2); As specified above, Leibovitch was unaware of the underlying cause of his behavior (3); His persistent criminal behaviors, despite low prospect for monetary rewards and the extremely high risk of arrest, is an extremely rare phenomenon (4); Although the public was impressed by his exceptional success and portrayed him as a national hero, in retrospect after his arrest they would describe him as mad or bizarre, as were the subjects in the aforementioned study.
Unacceptable Impulses

Neurotic symptoms are not only employed to force a desirable change in the environment, but also to control highly stressful inner feelings resulting from unacceptable aggressive or sexual impulses. While ordinary stressful life events may result in depression and/or anxiety, in some cases, as suggested by the frustration-aggression theory (e.g., Berkowitz, 1988, 1989; Dill & Anderson, 1995; Gustafson, 1989), it may also cause strong feelings of hostility. Consequently, an unbearable fear of losing control and guilty feelings may be produced. These reactions are particularly likely when the individual has both a rigid value system and his/her inhibitory forces towards aggression are weak. In some cases the unacceptable impulse is so strong that the individual unable to restrain its manifestation. In both situations different neurotic disorders may be used to relieve the emotional distress, as described below.

Restraining the Impulse via OCD

An example of an unacceptable impulse is a strong, conflicting, love-hate feeling towards a close relative. One type of mad behavior that is usually associated with such unacceptable impulses is OCD (e.g., Hollander, 1999a, 1999b; Horowitz, 2004; Miller, 1983; Stein & Hollander, 1993; Stein, Hollander, DeCaria, & Trungold, 1991; Whiteside & Abramowitz, 2005). OCD can reduce the chance of uncontrolled, impulsive behavior by offering one of two coping mechanisms, which psychoanalysis termed "reaction formation" and "isolation" (see Fenichel, 1946; A. Freud, 1936; Freud, 1905, 1926). In reaction formation, the individual becomes preoccupied with obsessive thoughts and compulsive acts of love. In isolation, the
individual develops extreme obsessive, hostile thoughts that are void of anger. PBT incorporates both of these concepts into its theoretical framework but conceptualizes them as intuitive-deliberate reactions.

**Karen:** This case, reported by Neale et al. (1982), illustrates the employment of reaction formation as a coping mechanism in response to unacceptable impulses. The patient, Karen, was a 30 year-old married woman and the mother of four children who was subjected to two sources of stress: a chronically unhappy marital relationship and disciplinary problems in managing her children. Her husband became physically debilitated due to a serious heart condition. Karen took all the responsibility for the household chores and family errands. "Her days were spent getting the children dressed, fed, and transported to school; cleaning; washing; shopping; and fetching potato chips, dip, and beer whenever Tony [her husband] needed a snack" (p. 2). Karen resented her children due to their difficult disciplinary problems, which she had to cope with alone, and particularly because they constituted an obstacle in fulfilling her desire to leave the marriage. Karen became increasingly depressed by her living conditions.

Karen began to experience intrusive, repetitive thoughts related to her children’s safety. Often she imagined that a serious accident occurred, and was unable to keep these thoughts out of her mind. Her daily activities became seriously disrupted by an extensive series of counting rituals. For example, Karen believed that if she purchased the first product on the shelf, something horrible would occur to her oldest child. If she selected the second item, a disaster would come to her second child, and so on for all four children. Additionally, the patient attributed significant meaning to the children’s ages. Her compulsive rituals were
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generalized to several other activities, such as the pattern in which she smoked cigarettes
and drank coffee (e.g., if she smoked one cigarette she continued to have at least another
four in a row, believing that one of her children would be harmed if she would not do so).
It seems that counting rituals enabled her to repress stressful thoughts relating to her
marital life and that she intuitively chose these symptoms primarily because they reduced
her fear of losing control over her unacceptable feelings of hostility toward her children.
As noted by Neale et al. (1982), "instead of injuring the children, she spent a good deal of
time every day performing irrational responses aimed at protecting them" (p. 12). Further,
although Karen’s bizarre rituals did not physically distance her from the original stressors
(i.e. husband and children), they were time consuming enough to provide temporary relief.
As noted by Neale et al. (1982), the symptoms ensured that she would be away from her
home for extended periods of time. If she went to her neighbor’s house for coffee, she
would be gone for at least 2 hours before she could consume enough cups and smoke
enough cigarettes to satisfy the rituals. Grocery shopping, which she did by herself, had
also turned into a long, complicated process. (p. 13).

Another factor which affected her specific choice was availability of rituals in her
"premorbid" state. "Her family was deeply religious, and she was raised to be a devout
Roman Catholic…The formal rituals of the church played an important role in her life" (p.
3). The high prevalence of OCD among religious subjects (e.g., Abramowitz et al., 2004),
and the excessive religious themes in their obsessive thoughts and compulsive rituals (e.g.,
Greenberg & Witztum, 1994; Raphael, Rani, Bale, & Drummond, 1996; Rasmussen &
Eisen, 1992; Steketee, Quay, & White, 1991), can be viewed as a deliberate exaggeration
of the available behavioral repertoire for purposes of pathological coping purposes.
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Some indication that she was satisfied with her intuitive choice is reflected by her statement that she acknowledged the irrationality of her behaviors, but nevertheless felt much more comfortable when she observed them conscientiously. Similarly, when a patient like Karen performed compulsive counting rituals to protect her parents from injury was pressed, "She agreed that her rituals did not afford them direct protection but felt that the rituals were helpful in the same way prayers are. She concluded that her rituals were irrational only to the extent that prayers are irrational" (Rachman & Hodgson, 1980, p. 19; See also a case study by Rofé, 2010).

This case also meets PBT's criteria of madness: (1) the OCD symptoms heavily occupied her attention and severely disrupted her daily functioning; (2) onset was spontaneous, in the absence of an event that could account for the severe behavioral change; (3) although the patient rationalized her behaviors as protective measures for her children, she was clearly unaware of the underlying causes of her symptoms; (4) her symptoms were obviously rare (the total prevalence of all OCD is less than 2%); (5) regarding social judgment – the mental health system would have classified her as “bizarre”, which is also the case with OCD symptoms (e.g., see Erdelyi, 1985; Shevrin &Dickman, 1980). Additionally, the patient's symptoms were preceded by stress and she suffered from an intense level of depression.

McAndrew’s Case (1989): In isolation, patients obtain controllability over their unacceptable impulses by deliberately preoccupying themselves with the "hate" component of the "love-hate" conflict: Extreme obsessive, hostile thoughts that lack feelings of anger become dominant. Lewis (1981) noted that Freud was puzzled by the fact that while
obsessive patients perceive their forbidden thoughts as "crazy," they remain powerless to stop them from penetrating the conscious. However, while psychoanalysis considers obsessive neurosis irrational, PBT views it as a rational coping mechanism by which patients consciously produce obsessive thoughts that reduce feelings of guilt and the risk of harmful consequences.

Obsessive neurosis increases controllability over the unacceptable impulse for the following reasons: 1) Given the artificial production of the obsessions and the lack of a suitable emotional base (e.g., anger), these cognitions are less likely to motivate impulsive behavior than the original emotionally charged thoughts; 2) Obsessive thoughts intensify patients' self-awareness that they may cause harm to others. Consequently, patients will take appropriate preventative measures in order to reduce the likelihood of inflicting harm, such as removing potentially harmful objects, or even sharing their anxiety-provoking thoughts with close family members so that they will supervise their behavior; 3) Obsessive thoughts should reduce guilt, since, unlike the emotionally-charged impulse that dominated prior to the neurosis, they are experienced as foreign to the self. This feeling of alienation stems from the absence of corresponding emotions and the patient's unawareness of his conscious involvement in producing the obsessive thoughts.

The utility of isolation as an effective control tool is demonstrated in the case study of obsessive-compulsive disorder by McAndrew (1989). A 26 year-old woman was greatly frustrated, as she was dissatisfied with her husband and three children and felt distant and alienated from others. The husband was "very strict, aggressive… insensitive to her needs… [and] physically abused her" (p. 317), and her difficult children frustrated her as she lacked adequate disciplinary skills. The patient was in fact in a state of helplessness,
feeling "stuck in a bad marriage" (p. 314). Consequently, she not only experienced severe depression, but intense anger directed at her husband and children as well, which was presumably accompanied by a fear of losing control and guilt. In response, the patient chose the coping style of isolation, which enabled her to satisfy both her needs for distraction and controllability. Bizarre aggressive cognitions detached from their appropriate affect heavily dominated her attention. "I’m having terrible thoughts about stabbing my children. (crying). That’s terrible - isn’t it? I’ve been having thoughts of hurting others too... I love my kids. How could I have these horrible thoughts of hurting them?" (McAndrew, 1989, p. 312, 316).

The high distractive value of the obsessive symptoms was reflected by the patient’s inability "to force them out of her head" (p. 312). She noted that, when she tried to suppress these cognitions, "the thoughts get worse and I get a headache or my heart starts pounding" (p. 312). Nevertheless, the patient reinforced her distractive measures even more by adopting compulsive bizarre behaviors as well. "I have to keep busy all the time... check things... clean my house very often. I’m meticulous and very slow doing things" (p. 316). The bizarre and emotionally detached obsessive cognitions (i.e., isolation) enabled the patient to be unaware of her emotionally loaded hostile impulses.

At the same time, the symptom provided her a measure of control. The obsessive thoughts heightened the patient’s self-awareness of the potential for being dangerous. As a result she was motivated to take appropriate preventative precautions, hence reducing the danger of losing control. As noted by the patient

I can't look at violence on TV because I feel I could do something... I have to check things and make sure I know everything is all right. I
The obsessive thoughts also motivated her to express concern and love, which further minimized the possibility of dangerous impulsive behavior. The patient was distressed, explaining, "I love my kids. How could I have these horrible thoughts of hurting them?" (McAndrew, 1989, p. 316). The patient's symptoms were also aimed at increasing the supervision of others. For example, she stated that, "I had my sister and my mother stay with me so I wouldn’t do anything... I must call or be around other people. Someone would intervene if I was about to hurt my kids" (pp. 313-316).

The absurdity of these thoughts, and the sense that they were alien to the self, enabled the patient to attribute them to sources beyond her control, thereby alleviating guilty feelings that she experienced ("I feel guilty and think I am a bad person" p. 312). The patient raised the possibility that her symptoms might be due to "premenstrual syndrome" (p. 312), craziness (I usually think I’m going crazy", p. 312), or devils ("someone like the devil must be making me have these thoughts", p. 313).

Moreover, although the concentration on the obsessive thoughts increases one’s level of anxiety, this emotional discomfort is readily reduced by distractive/neutralizing activities (e.g., forming a counter image, ritualized internal dialogue, and reading) which patients perform soon after the concentration act (see Freeston et al., 1997; Rachman, 1976; Salkovskis & Westbrook, 1989). Thus, although obsessive thoughts are emotionally and cognitively disruptive, like other cases of symptom adoption, the overall resulting experience is not as highly disruptive as the original state before adopting the symptom. In
The absence of the bizarre coping mechanism, anxiety and depression would be so intense as to be beyond the patient’s tolerance level.

The principle of availability apparently affected the choice of OCD’s coping mechanism of isolation as well. As noted by Rachman and De Silva (1978) unacceptable obsessive thoughts are not unique to neurotic patients but characterize a large majority of normal people. However, while normal people disregard their sporadic unacceptable obsessive thoughts spontaneously triggered by their impulses (see Rachman, 1976, p. 438), patients who have a need to repress and control their anxiety-provoking impulse, concentrate on these available cognitions and exaggerate them to an absurd bizarre level. Yet, although this may be the most common form by which isolation is adopted, clinical evidence indicates that the patient may create obsessive thoughts on the basis of other personal experiences, such as films (e.g., lurid death scenes; see case 1 Salkovskis & Westbrook, 1989) and reading materials (e.g., see case study by Bevan, 1960). Almost simultaneous with the adoption of these thoughts, the patient becomes unaware of his or her self-involvement in the deliberate exaggeration/production and maintenance of these thoughts due to sophisticated self-deceptive processes (see Part II). Consequently, since the unacceptable thoughts lack genuine emotional basis due to their artificial production, and the patient's unawareness of their underlying causes, they appear bizarre, irrational and foreign to the self.

**Other Forms of Impulse-Restraint**

OCD is not the only coping measure that patients employ to cope with unacceptable impulses. For example, Abse (1959, p. 282) described a case of conversion disorder concerning a man who became a paraplegic after his wife left him for another man. The
patient had a strong impulse to pursue his wife and kill both her and her lover, but his symptoms prevented him from carrying it out. In a similar case study (Carson et al., 1988, p. 203), a female subject, who physically attacked her father using her right arm, developed a marked tremor and partial paralysis in that same right arm and hand. Carson et al. (1988) suggested that the paralysis represented a symbolic punishment of the "guilty party," while preventing reoccurrence of the aggressive behavior. Subjects may also turn to unusual phobias to cope with unacceptable impulses. For example, a 24-year-old male patient, who experienced anxiety-provoking homosexual fantasies while having sexual relations with women, developed a morbid fear of syphilis, inhibiting him from having any sexual relations (Coleman, 1964)

**Implementation of Unacceptable Impulses**

Sometimes subjects may not have sufficient restraint to control their unacceptable impulses. In such cases, they may develop DID, a rational coping mechanism that absolves them of their responsibility and guilt. Spanos, Weekes and Bertrand (1985) explain, in their socio-cognitive model of DID, that this disorder "provides a viable and face-saving account for personal failings and problems" (p. 364; see also Spanos, 1996; Spanos et al., 1986). For example, Spitzer et al. (1983) described the case of a 37-year-old married woman suffering from DID. Approximately one afternoon per week, she would shift into another personality named Ellen, meet a stranger at the bar in a neighboring town, and spend the afternoon with him in a motel. Typically, she would disparage his performance afterwards and would always refuse to meet him again. Occasionally she would even fantasize about killing the man after sexual intercourse. She would then become uneasy, shift back to her dominant personality and hurry home to cook dinner. The patient felt guilty and was angry at "Ellen"—who on several
occasions, manifested herself at home and told her husband about her affairs. While psychoanalytic advocates would attribute this seemingly uncontrolled sexual behavior to the unconscious, according to PBT, the woman consciously adopted the role of madness, which enabled her to act upon her impulse while transferring the responsibility for her actions to forces beyond her control. In agreement with the socio-cognitive model, DID may also be used as a vehicle to implement violent acts, including burglary, murder, or rape (e.g., see Moskowitz, 2004a, 2004b; Perr, 199; Steinberg et al., 1993), while attributing the cause to sources beyond the individual's conscious control.

Sometimes the individual implements the unacceptable impulse but uses bizarre ritual behaviors, which reduce the guilt over the anxiety provoking behavior. Sherman (1938, pp. 226-227) described a 14 year-old boy who washed his hands frequently during the day and often stayed in the bathtub for two or three hours. On a number of occasions he daubed iodine on his hands and face, telling his parents that he had scratched himself and wanted to prevent infection. The boy refused to play ordinary games with other children because he did not want to soil his hands. During therapy, it was discovered that the boy experienced excessive guilt over masturbation, which according to Sherman was the consequence of a rigid upbringing (e.g., his parents told him that masturbation could result in a terrible disease). The boy described the masturbation behavior as "a dirty habit", which may account for his choice of excessive cleaning as a measure of coping with feelings of guilt and anxiety.

Implementation of anxiety-provoking impulses may also manifest in psychotic disorders, such as filicide mothers who claimed they heard voices telling them to kill their children (Valenca et al., 2011). The mothers' explanations clearly show these criminal acts were goal-directed behaviors that improved their quality of life. One mother said, "My husband dropped
me out and left me on my own to look after the children…I thought I would not be able to bring up the three children without a father” (Valenca et al., 2011, p. 552). The second mother confessed, "I don't know what happened…I just did it…it occurred to me that the suffering of bringing up a child with difficulty had just begun…I thought that I would not have money enough to pay for schooling and that at school they would mistreat my child…I thought that they would abuse him because he was dark skinned” (p. 552). While it is true they heard voices telling them to kill their children, one needs to consider findings demonstrating that visual (e.g., Mintz & Alpert, 1972) and auditory (e.g., Hoffman & Hoffman, 2012; Jones, 2008) hallucinations are the consequence of vivid imaginations and self-talk, respectively, as discussed previously.

**Principle of Availability**

As was shown, the principle of availability affects the individual's choice of symptoms, the same as purchasing a specific product. Additional evidence supporting this claim is reviewed below.

**Medical conditions**

Clinical evidence suggests that subjects may utilize their current or past injuries or illnesses to develop a neurotic disorder which can meet their pathological coping needs. For example, a high prevalence of some initial organic illness or physical injury was reported among patients who subsequently developed conversion disorder (e.g., Carden & Schramel, 1966; Jones, 1980; Merskey & Buhrich, 1975; Miller & Forbes, 1990; Spierings, Poels, Sijben, Gabreels, et al., 1990;
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Volkmar, Poll & Lewis, 1984; Whitlock, 1967). Volkmar et al. (1984) found that children with conversion symptoms had a significantly higher prevalence of hospitalization than a control group in the year prior to their psychiatric evaluations. Conversion symptoms are "commonly placed in some organ that was the site of previous injury or disability" (White & Watt, 1981, p. 216; see also Mucha & Reinhardt, 1970; Weinstein, Eck, & Lyerly, 1969). For instance, Ironside and Batchelor (1945) reported that a significant number of military aircrew members, who developed ocular hysteria had a prior history of eye trouble. Similarly, Brady and Lind's (1961) patient developed hysterical blindness rather than other conversion symptoms, because, while in the army, he developed an eye infection that resulted in partial loss of vision in one eye. Likewise, as noted by Merskey and Buhrich (1975), "Patients who have epileptic fits may learn the pattern of their attacks and, when it is convenient to solve a conflict with this technique, they may use their knowledge of organic fits in order to develop hysterical ones" (p. 65).

Utilization of physical symptoms as a coping mechanism is also observed in other neurotic disorders, such as hypochondriasis (e.g., Noyes, Watson, Carney, Letuchy et al., 2004). As noted by Salkovskis and Warwick (1986), "It is significant that past experience of true organic disease in self or a family member has been identified as a predisposing factor for hypochondriasis" (p. 597; see also case study by Davison & Neale, 1986, pp. 148-150). Availability may also account for the significant relationships between panic disorder and both pulmonary diseases (e.g., Brenes, 2003; Mikkelsen, Middelboe, Pisinger & Stage, 2004; Nascimento, Nardi, Valença, Lopes et al., 2002; Roy-Byrne, Craske & Stein, 2006; Shavitt, Gentil, & Mandetta, 1992 Valença, Falcão, Freire, Nascimento et al., 2006) and mitral valve prolapse, which similar to panic disorder, is characterized by non-angina chest pain, palpitations, dyspnea, light-headedness, and anxiety (e.g. Gorman, Goetz, Fyer, King et al., 1998; Hamada, Koshino, Misawa, Isaki & Geyjo, 1998).
Behavioral repertoire

Patients may intensify their available behavioral repertoire to pathological levels for copying purposes. Accordingly, it seems likely that increased dieting practices in recent years have motivated people to transform this behavior into eating disorders. The widespread encouragement of dieting has also been shown to be significant in the dramatic increase of these disorders (e.g., see Lucas, Beard, O'Fallon, & Kurland, 1991; Polivy & Herman, 1987). Kaffman and Sadeh’s (1989) study of anorexia nervosa in the kibbutz movement in Israel demonstrated such a phenomenon. They related the 800% increase of the disorder within the kibbutz, over a period of 25 years, to the growing emphasis placed on the kibbutz women’s external appearances. The authors noted, "a change in the norms regarding the importance of feminine sliminess and beauty...Today, in nearly every kibbutz the cosmetician, the hairdresser, the beautician, as well as the dietitian play an important part in the life of the woman" (pp. 34-35). Similarly, the higher prevalence of eating disorders among women has been explained by the fact that women are more preoccupied with weight and dieting than men (e.g., Stice, 1994). Studies also suggest that due to the higher value placed on their appearance, homosexual males, and males whose occupation requires strict weight control and a thin appearance - such as dancers, actors, models, and athletes - are more likely to develop eating disorders than other males (e.g., Carlat, Camargo & Herzog, 1997; Stice, 1994).

The escalation of a normal behavioral repertoire to pathological levels occurs in OCD as well. For example, the high rate of compulsive cleaning among women was attributed to the fact that "in our culture most women are responsible for running the household (i.e., cleaning)" (Emmelkamp, 1982, p. 167). Similarly, the high prevalence of OCD among religious subjects (e.g., Abramowitz et al., 2004), and the excessive religious themes in their obsessive thoughts
and compulsive rituals (e.g., Greenberg & Witztum, 1994; Raphael, Rani, Bale, & Drummond, 1996; Rasmussen & Eisen, 1992; Steketee, Quay, & White, 1991), can be viewed as a deliberate exaggeration of the available behavioral repertoire for purposes of pathological coping. This theoretical approach may also account for the high proportion of washing symptoms reported among Hindus suffering from OCD, as their culture's religion emphasizes purity and cleanliness (Khanna & Channabasavanna, 1988).

Studies show that among the general population, a large number of individuals experience one or more panic-like attacks that do not meet the criteria for panic disorder (Brown & Deagle, 1992; Telch, Brouillard, Telch, Agras et al., 1989; Whittal & Goetsch, 1995). The emotional and behavioral characteristics of these cases, such as dizziness, palpitations, shaking and sweating, although similar to those of panic patients, are of a lesser magnitude. From PBT's standpoint, when the need to adopt a pathological coping mechanism arises, these individuals are at a higher risk for developing panic disorder (see Whittal & Goetsch, 1995), as they will choose to inflate their behavioral repertoire of intense arousal (i.e., panic-like attack) to a neurotic level.

**Family**

Modeling after family members is an important factor in the availability of neurotic symptoms. Effects of modeling do not have to be displayed immediately following the observation of the deviant behavior. Rather, a child may latently learn a behavior (e.g., Campanella & Rovee-Collier, 2005) and utilize it later, when the need for a pathological coping mechanism arises. This is consistent with findings that show 70% of conversion disorder patients had parents who suffered from illnesses in the same organs that were affected by their hysterical symptoms (Mucha & Reinhardt, 1970; see also Koon, 1983; Siegel & Barthel, 1986; Volkmar, Poll, & Lewis, 1984). Similarly, Dell and Eisenhower (1990) reported that 73% of patients with DID
had at least one parent who suffered from a diagnosable dissociative disorder, and 36% of the patients' mothers suffered from DID. Likewise, 17%-19% of parents of OCD patients suffer from the same disorder (see Placentini & Graae, 1997). Although these findings are often attributed to genetic factors, they can equally be accounted for by the principle of availability.

Individuals may be predisposed to choose certain neurotic disorders by observing their familial environment, even if family members themselves do not display the disorder. For example, families of eating disorder patients were more likely to be excessively preoccupied with foods and dieting than the general population (e.g., Kaffman & Sadeh, 1989; Stice, 1994). As indicated by Kaffman and Sadeh (1989), "Excessive preoccupation with food and diet – whether for reasons of health or esthetics – was noted among 73% of the mothers of the anorexics" (p. 40). Likewise, OCD patients were often raised in families characterized by super-cleanliness and over-meticulousness (e.g., see Hoover & Insel, 1984). Thus, it seems likely that when these individuals were confronted with intolerable levels of stress, they copied or exaggerated familial behaviors, i.e. dieting or cleaning, to a neurotic level. As stated before, it seems likely that the paranoid disorder of Nash's younger son was modeled after his father's behavior. As noted by Nash with regard to his son's psychiatric disorder, "of course, I've been a bad example" (Nasar, 1998, p. 382).

Peer Group

Peers displaying neurotic behaviors may also serve as models for imitation when their symptoms satisfy the individual's coping needs. For example, in their investigation of contagious hysteria among West Bengali women, Nandi, Banerjee, Bera, Nandi et al. (1985) reported that a husband's violence towards his wife usually precipitated her episodes of hysterical seizures. As soon as the victim fell into a fit, other women suffering from similar stressors began to have hysterical seizures as well (for additional examples, see Stevens, 1969,
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pp. 34-35; Ullmann & Krasner, 1975, pp. 253-254). Similarly, various studies indicate that the effect of peers on the selection of symptoms, expressed through modeling or suggestion, may play a significant role in the development of eating disorders (see reviews by Polivy & Herman, 2002; Stice, 1994). Accordingly, Striegel-Moore, Silberstein, and Rodin (1986) pointed out that "a college woman who purges almost always knows another female student who purges, whereas a woman, who does not purge, rarely knows someone who does" (p. 256).

Mass Media

In the last few decades, there has been a dramatic increase in the prevalence of eating disorders in western society (e.g., Hoek, 1993; Hoek & Van Hoeken, 2003; Lucas et al., 1991; Pope, Hudson, & Yurgelun-Todd, 1984; Shisslak, Crago, Neal, & Swain, 1987; Striegel-Moore et al., 1986; Willi, Giacometti, & Limacher, 1990). Moreover, the risk of these disorders, which were once rare among the lower classes (e.g., Bruch, 1973, p. 13; Garfinkel & Kaplan, 1986, pp. 270-271; Nagel & Jones, 1992) and in non-western countries (e.g., Hoek, van Harten, Hermans, Katzman et al., 2005; Keel & Klump, 2003), spread equally to all ranks of society (see Culberg & Engström-Lindberg, 1988; Mitchell & Eckert, 1987; Pope, Champoux, & Hudson, 1987; Whitaker, Davies, Shaffer, Johnson, et al., 1989) and is increasing in the non-western world (e.g., Miller, 2006; Pate, Pumariega, Hester, & Garner, 1992).

One of the central reasons for the increasing risk of developing eating disorders is the influence of mass media (e.g., Calogero, Davis, & Thompson, 2004; Lucas, et al., 1991; Murray, Touyz, & Beumont, 1990; Polivy & Herman, 2002; Spettigue & Henderson, 2004; Striegel-Moore et al., 1986) which increases awareness of these disorders. As a result, individuals are enabled to choose these behaviors when they are suitable for their coping needs. As noted by Striegel-Moore et al. (1986),
The bestseller *Beverly Hills Diet Book* . . . advocated a form of bulimia in which binges are 'compensated' by eating massive quantities of raw fruit to induce diarrhea... In addition to the mass media making available what one might call manuals for 'how to develop an eating disorder,' females more directly teach each other how to diet and how to binge, purge, and starve (p. 256).

Accordingly, Murray et al. (1990) found that mass media was the major source of knowledge about anorexia and bulimia nervosa. Similarly, upon examining the underlying causes of sex differences in eating disorders, Andersen and DiDomenico (1992) reported that women's magazines contained 10.5 more articles and advertisements regarding weight loss and anorexia nervosa than men's magazines. The effect of mass media has also been observed in non-western countries, where westernization increased the prevalence of eating disorders (e.g., see Elal, 2003; Miller, 2006).

Some investigators undermine the effect of mass media on the development of eating disorders, claiming that only a small minority of those who are exposed to the media develops these disorders (e.g., see Kaye, Strober & Klump, 2002; Polivy & Herman, 2002). However, as with advertisements, which only persuade people who need and are willing to pay to buy the advertised product; only those who have a need for pathological coping mechanisms, and are ready to pay the cost involved, will be affected by the "commercial."

As with eating disorders, a marked increase in the incidence of DID has occurred in recent years (e.g., Lilienfeld, Kirsch, Sarbin, Lynn, et al., 1999; Mai, 1995; Merskey, 1995; North, Ryall, Ricci, & Wetzel, 1993; Uchinuma & Sekine, 2000). Although some researchers deny an actual increase (e.g., see Fahy, 1988; Kihlstrom, 2005; Piper, 1994), there seems to be enough evidence to reject this claim (e.g., Spanos, 1994, 1996; Uchinuma & Sekine, 2000). In accounting for these findings, Spanos et al. (1985) noted that
Popular movies and television shows like 'The Three Faces of Eve' and 'Sybil,' and a number of popular biographies like 'Sybil' ... provide detailed examples of the symptoms and course of multiple personality. Moreover, these sources usually make the role of multiple personality appear relatively attractive ... (p. 363).

Soon after the publication of 'The Three Faces of Eve,' the authors were "inundated with telephone calls and letters from people who had diagnosed themselves as multiple personalities and who presented themselves in terms of this diagnosis" (Spanos et al., 1985, p. 364). Similarly, evidence reviewed by Spanos (1996) reveals that 53% of DID patients read books or articles, attended lectures, or watched movies about this diagnosis. "In short, the notion of DID and the symptoms associated with this disorder are well known in our culture" (Spanos, 1996, p. 242). Mai (1995) also reported that a substantial majority of members of the Canadian Psychiatrists Association agreed that publicity affected the prevalence of DID. These findings shed light on the rarity of DID in non-western societies (e.g., Adityanjee et al., 1989, Varma, Bouri, & Wig, 1981) and indicate that westernization is likely to increase the prevalence of these disorders (e.g., see Uchinuma & Sekine, 2000).

**Suggestions**

Individuals preoccupied with intolerable levels of stress may be coaxed into choosing a particular neurotic disorder as a coping mechanism. For example, DID may develop through suggestions given by a therapist (e.g., Ganaway, 1995; Jaroff, 1993; Read & Lindsay; 1994; Spanos, 1996; Spanos & Burgess, 1994). Accordingly, Spanos et al. (1985) reviewed clinical data indicating that, "therapists sometimes encourage patients to adopt the multiple role, provide them with information about how to enact that role convincingly, and, perhaps most importantly, provide 'official' validation for the different identities that their patients enact" (p.
Likewise, Read and Lindsay (1994) referred to evidence indicating that "on average patients eventually diagnosed as having DID receive 6 to 7 years of mental health care before that diagnosis is made" (p. 420).

The suggestions of other authoritative individuals may have similar effects. Fenichel (1934, pp. 160-163) described a seventeen-year-old man, who developed an unusual avoidance phobia. His pastor delivered a sermon, in which he advised young men to avoid contact with those who masturbate. Soon afterwards, he began avoiding boys whom he knew to do so, particularly a certain boy, whom he knew to do so a great deal. The patient developed a phobia towards meeting the boy and named him "The Avoided," using this nickname in order to avoid using the boy's real name. The phobia later spread and gradually came to necessitate avoidance of the boy's family and friends. An additional example of suggestion, reported by Dollard and Miller (1950), concerned a woman with marital problems, who developed compulsive counting of heartbeats and breaths shortly after a conversation with her aunt, who told her about her own fear of heart trouble.

**Unique Personal Experiences**

Patients tend to adopt symptoms with which they are familiar with through various channels of information (e.g., media and family). In some cases, however, people utilize their personal experiences to create idiosyncratic symptoms. For example, Emmelkamp (1982, p. 161) described a 22-year-old woman who suffered from obsessive thoughts of choking. When the subject was 11 years old, she nearly choked to death on a piece of candy. Five years later, she developed a compulsive ritual of checking objects that she might swallow. Emmelkamp, who rejected the conditioning theory of OCD, attributed the patient's behavior to "some serious difficulties in her work" (p. 161) at the onset stage, as there was no other observable event that could plausibly account for the sudden behavioral change. In some cases, patients may use
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their unique experiences to create psychological disorders that symbolically represent their stressors, as was demonstrated with the previously reviewed case by Brandt and Mackenzie (1987).

Another example refers to a woman who developed an extreme chocolate phobia which expanded to any object or place associated with it (Rachman & Seligman, 1976). The onset coincided with the death of her mother, upon whom she was extremely dependent. Her behavior, which was highly resistant to extinction, could not be accounted for by any environmental event. The patient noted that a bar of chocolate was present in the room that contained her mother's dark coffin, and this "may have contributed to the association which she had between death and chocolate" (p. 336). While the color of the chocolate may have been a factor in the development of the phobia, it seems that chocolate was also selected as the trigger because of its symbolic meaning. Prior to her mother's death, the patient enjoyed eating chocolate and derived pleasure from it. It may well be that the "loss" of chocolate, which was available in the room, symbolically represented the loss of the beloved mother.

Conclusion

The significant amount of research and clinical evidence reviewed in this section provides strong support to PBT's claim that, as with consumer-decision making processes, the choice of a specific bizarre behavior is determined not only by the individuals' needs, but also by his or her unique personal experiences. Various channels of information, such as mass communication, medical history, behavioral repertoire, peer group, suggestions, professions, unique personal experiences, and genetically determined deficits influence availability. This principle is a major theoretical contribution to the understanding of the variability of mad behaviors according to gender, socioeconomic classes, and across different periods.
The new understanding of psychological disorders has important implications for therapy, which will be discussed in detail in Part-III. However, one specific issue that needs to be addressed in this context concerns the efficacy of drug therapy. A reference to this topic is important because it became widely accepted that this medical intervention is the most effective and the only useful therapy for schizophrenia, which indirectly serves the myth that this is a brain disease. Furthermore, in recent years this ideology is generalized also to neurotic disorders, which, as stated, are seen as the result of neurological impairments (e.g., see Wakefield, 1999). The discussion on this issue will be focused on antipsychotics, which serve as the main type of drug for the treatment of schizophrenia, and antidepressants, which are used mainly for neurotic disorders, and theoretical and practical implications.

A brief discussion will also be made with regard to the efficacy of psychoanalytic therapy in order to demonstrate that, contrary to medical models, a complete recovery of schizophrenia can be obtained without medication. At the same time, this data can strengthen PBT, as it is unexplainable by psychoanalytic terms.

Antipsychotics

Antipsychotics have been widely recognized as the core treatment for schizophrenia and they are recommended by the American Psychiatry Association (2004), the Schizophrenia Patient Outcomes Research Team (PORT) (Lehman, Kreyenbuhl, Buchanan, Dickerson et al., 2003), and the National Institute for Clinical Excellence (2002). This recommendation needs to be evaluated in reference to the efficacy of these drugs and their harmful effects.
Efficacy: Research indicates antipsychotics primarily reduce schizophrenics' positive symptoms (i.e., delusions and hallucinations), and have little or no effect on the negative symptoms, which as stated before, constitute the source of patients' stresses (e.g., Artaloytia, Arango, Lahti, Sanz, et al., 2006; Miyamoto, Miyake, Jarskog, Fleischhcker et al., 2012). Although some researchers reported that antipsychotics also affect negative symptoms, such as avolition-apathy and alogia (Subotnik, Ventura, Gretchen-Doorly, Hellemann et al., 2014), these outcomes do not include social and cognitive deficits that are the core problems of schizophrenia. Antipsychotics alone or adjunctive antidepressants have no effect on problem solving, social competence or social cognition (e.g., Bellack, Shooler, Marder, Kane, et al., 2004; Kucharska-Pietura & Mortimer, 2013; Sergi, Green, Widmark, Reist, et al., 2007; Vernon, Grudnikoff, Seidman, Frazier at al., 2014; Usall, Lopez-Crrilero, Iniesta, Roca et al., 2014). Accordingly, researchers concluded, "the results do no engender optimism for the possibility that antipsychotic drugs can specifically facilitate social recovery" (Kucharska-Pietura & Mortimer, 2013, p. 335).

Regarding recovery, psychiatrists tend to be pessimistic about the prospect of recovery in schizophrenia (Ng, Pearson, & Chen, 2008). Research that examined the efficacy of antipsychotics after three years of treatment, found that 33% achieved long-lasting symptom remission, 13% long-lasting functional remission (a positive effect on occupational/vocational functioning, living independently, having active social interaction), 27% long-lasting adequate quality of life, and only 4% achieved recovery, defined as simultaneously achieving long-lasting symptomatic functional remission and an adequate quality of life (Novick, Haro, Suarez, Vieta et al., 2009). When patients were treated with antipsychotics in conjunction with psychosocial interventions, 36%
maintained the full symptom remission for 6 months, while the rate of recovery was 10%. However, after a period of one year, symptom remission was reduced to 22% and only 1% met the criteria of recovery (Ventura, Subotnik, Guzik, Hellemann et al., 2011). Antipsychotics had a small impact on the schizophrenics' overall satisfaction of life (Fervaha, Agid, Takeuchi, Foussias et al., 2014), and in some cases, prolonged drug therapy aggravated the individual's psychological state. A twenty-year longitudinal study shows that patients who were not taking antipsychotics for prolonged periods, were less psychotic and experienced more periods of recovery than those who were on medications continuously (Harrow, Jobe & Faull, 2012; see also Harrow & Jobe, 2013).

**Harmful Effects:** Even if antipsychotics would have a significant recovery effect, it is doubtful whether this benefit would be worth the heavy cost that patients would have to pay, as they cause serious harmful consequences on one's psycho-physiological systems. These effects include Akathisia and sexual dysfunction (e.g., Kane, Fleischhacker, Hasen, Perlis, et al., 2009; Olfason, Utтаро, Carson, & Cafesse, 2005; Peluso, Lewis, Barnes, & Jones, 2013), and increased risk for metabolic syndrome, comprising obesity, dyslipidemias, glucose intolerance, insulin resistance (or hyperinsulinaemia) and hypertensions, which contribute to cardiovascular disease (e.g., Casey, Haupt, Newcomer, Henderson et al., 2004; Mittal, Goncalyes, Harripaul, et al., 2017; Scigliano & Ronchetti, 2013; Yogaratnam, Biswas, Vadivel & Jacob, 2013), and the risk of sudden cardiac attack death (Ray, Chung, Murray, Hall et al., 2009).

The harmful impact may be even greater, considering the fact that a high percentage of patients (42.2%- 57.7%) are treated by multiple medications (Faries, Ascher-Svanum, Zhu, Correll, et al., 2005; Suokas, Suvisaari, Haukka, Korhonen, et al., 2013), which increase
the adverse effects of drugs. These include mortality, decrease in cognitive functioning, especially with prolonged use (e.g., Elie, Poirier, Chianetta, Durand et al., 2010; Jari, Jaana, Jaana, Jari, et al., 2012; Wolf, Leucht & Pajonk, 2017; Xiang, Weng, Leung, Tang et al., 2007), decline in verbal learning and memory, poorer cognitive performance, difficulty in thinking and concentration (e.g., Fakhoury et al., 2001; Husa, Rannikko, Moilanen, Haapea et al., 2014).

Long-term treatment of antipsychotics is also correlated with smaller brain tissue volumes and larger cerebrospinal fluid volumes (e.g., Ho, Andreasen, Ziebell, Pierson et al., 2011; Fusar-Poli, Smieskova, Kempton, Andreasen ea al., 2013; Torres, Portela-Oliveira, Borgwardt, & Busatto, 20143; Veijola, Guo, Moilanen, Jaaskelainen et al., 2014). Adverse alterations of brain structure and decreased cognitive functioning associated with antipsychotics were also observed in animals (Konopaske, Dorph-Petersen, Pierri et al., 2007; Konopaske, Dorph-Petersen, Sweet, Pierri et al., 2008; Terry & Mahadik, 2007). Thus, "although antipsychotics relieve psychosis and its attendant suffering, these drugs may not arrest the pathophysiologic processes underlying schizophrenia and may even aggravate progressive brain tissue volume reductions" (Ho et al., 2011, p. 8). Some researchers also found that antipsychotics, widely used for patients with severe depression, might be associated with alteration of cerebrospinal fluid amyloid-B and total tau that are thought to be predictive of Alzheimer's disease (Clarke, Hartmann, Jones, Ballard et al., 2011).

It may be a worthwhile to note, that while some researchers reported that negative effects of antipsychotics were more prominent with first generations of antipsychotics (Kiviniemi, Suvisaari, Koivumaa-Honkanen, et al., 2013), others found that the second
generation was associated with a greater frequency of metabolic and cardiovascular
disturbances (Peluso et al., 2013; Scigliano & Ronchetti, 2013). Some found that both
types of drugs have a similar effect in increasing the risk of sudden cardiac attack death
(Ray, Chung, Murray, Hall et al., 2009) or other side effects in general (Leucht, Cipriani,
Spinelli, Mavridis et al., 2013).

Antidepressants
Efficacy: Antidepressants have beneficial effects on nearly all neurotic disorders,
including panic disorder and agoraphobia (e.g., Furukawa, Watanabe, & Churchill,
2006; Mavissakalian & Ryan, 1998; Westenberg, 1996), OCD (e.g., Abramovitz, 1997;
Cottraux, Bouvard, & Maud, 2005; Dell'Osso, Nestadt, Allen, & Hollander, 2006;
Dougherty, Rauch, & Jenike, 2004), DID (e.g., Kluft, 1987; Loewenstein, 1991; Putnam &
Loewenstein, 1993; Miller, 2000) eating disorders (e.g., Bacaltchuk, Hay, & Mari, 2000;
Ferguson, & Pigott, 2000; Vaswani, Ramesh, Kalra, & Sagar, 2005), and conversion
disorder (e.g., Cybulska, 1997; 2005; Pu, Mohamed, Imam, & El-Roey, 1986; Voon,
2006; Voon & Lang, 2005).

Discontinuation of antidepressants (e.g., Doyle & Pollack, 2004; Mavissakalian & Guo,
2004; Mavissakalian & Perel, 2002; Mavissakalian & Ryan, 1998) or anti-panic
medication (see review by Taylor, 2000) increases the risk of relapse among panic and
agoraphobic patients. Similar effects were found regarding the discontinuation of drug
therapy for OCD patients (e.g., Bystritsky, 2004; Koran, Bullock, Hartston, Elliot et al,
2002; Pato, Murphy, & DeVane, 1991; Ravizza, Maina, Bogetto, Albert et al, 1998; Marks
& O'Sullivan, 1988) and bulimic patients (see Kotler & Walsh, 2000). In a similar fashion,
continuous use of antidepressant medication among panic disorder (Mavissakalian & Perel, 1999), OCD (e.g., Fineberg, Pampaloni, Pallanti, Ipser et al, 2007; Ravizza et al, 1998), and bulimics (e.g., Kotler & Walsh, 2000; Peterson & Mitchell, 1999) reduced the risk of relapse.

A variety of studies show that the same drug may be effective for disorders of different symptomology. For example, clomipramine, fluoxetine, fluvoxamine, monoamine oxidase inhibitors and tricyclic antidepressants are effective in the treatment of both obsessive-compulsive disorders (e.g., Abramovitz, 1997; Demal et al., 1996; Park et al., 1997; Piccinelli et al., 1995; Van Balkom et al., 1994), agoraphobia and panic disorders (e.g., Alexander, 1991; Black et al., 1993; Burrows et al., 1993; Gelder, 1992; Klerman, 1992; Westenberg, 1996). Similar results were reported for eating disorders (e.g., Hoffman & Halmi, 1993; Wolfe, 1995).

**Harmful Effects:** Drug therapy has much less harmful effects for neurotic patients. The main harmful effects of antidepressants which are the major medical intervention for these patients are weight gain and sexual dysfunction (e.g., Bet, Hugtenburg, Penninx, et al., 2013; Bijlsma, Chan, Olivier, et al., 2014; Rothschild, 2000). It seems likely that the harmful effects of these drugs could have been much worse if the patients would have taken these drugs as intensively as in mental hospitals.

**Theoretical and Practical Implications**

Historically, medical intervention in cases of schizophrenia became universally accepted, despite their disastrous consequences, mainly because of the strong conviction that this disorder is the result of brain disease. The horrible outcomes of lobotomy (e.g., DE mille,
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1962; Hakola, Puranen, Repo, & Tiihonen, 1993; Mashour, Walker, & Martuza, 2004) and shock insulin (e.g., Doroshow, 2006), did not stop this mode of therapy, but only motivated advocates of medical models to search for a seemingly safer therapy. Therefore, the aforementioned data regarding the serious damage caused by antipsychotics to patients' cognitive and physiological systems would not be sufficient in stopping this type of therapy. It may be that PBT, which questions the notion of brain disease, along with the vast amount of research which demonstrates the horrible consequences of antipsychotics, will provide a theoretical and scientific platform for a social movement that will stop or at least minimize the enrichment of the drug companies.

It seems likely that drug therapy reduces patients' bizarre behaviors, such as hallucinations and delusions in schizophrenia, and specific symptoms in neurotic disorders, because both antipsychotics (e.g., DeBattista & Hawkins, 2009; Kasper & Akimova, 2013; Kato & Chang, 2013; Philip, Carpenter, Tyrka, & Price, 2009) and antidepressants (see a review by Rofé, 2000) reduce patients' level of depression. Consequently, patients tend to abandon their pathological coping mechanisms as they can manage without them. Additionally, antipsychotics damage certain cognitive and motor faculties that disrupt patients' abilities to manufacture the positive symptoms. As specified above, the production of auditory hallucinations requires the ability to produce internal speech and creative thinking to develop delusions and hallucinations that can serve the patient's unique psychological need. However, as indicated above, antipsychotics pose difficulties in controlling internal movements, which may even cause Akathisia, and they disrupt the individual's thinking and ability to concentrate. These disturbances may explain Nash's complaint, "If I take drugs I stop hearing the voices" (Nasar, 1998, p. 321).
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At any rate, whatever the reason for the reduction of the positive symptoms will be, patients pay a very high cost that seriously endangers their life. Moreover, increasing patients' insight into their "illness", which is required for motivating patients to take drugs, leads to depression, low self-esteem, hopelessness, and suicidal behavior (e.g., Acosta, Aguilar, Ceiás & Gracia, 2013; Balhara & Verma, 2012; Crumlish, Whitty, Kamali, Clarke, Browne et al., 2005; Ekinici, Gorkem, Albayrak, Arslan et al., 2012; Lysaker et al., 2007; Melle & Barrett, 2012; Yu-Chen & Yia-Ping, 2011). Can all these horrible consequences, justify the "benefit" of being free of the positive symptoms?

Clinical Examples

John Cronholm (Leon (1990) vs. Mr. X (Karon, 2008)

In order to demonstrate the totalitarian power of the medial system and the horrible damages which antipsychotics can inflict, two case studies of schizophrenia are presented below. While in the first case, the patient was helpless and could not prevent the harmful outcomes, in the second case the patient was more fortunate as his wife discontinued his hospitalization and referred to psychoanalytic therapy.

The first case, reported by Leon (1990), concerns a 28 year old schizophrenic man, John Cronholm, who was hospitalized a number of times since he was 19 years-old. John attended university and did well academically for about one semester. He stopped going to class during the second semester, and later he progressively became schizophrenic. After several years of unsuccessful drug treatment, Cronholm’s condition deteriorated and the patient refused both medication and continued hospitalization. Nevertheless, he was hospitalized against his will and forced to take medication. As a result, the patient developed a variety of dysfunction in his extrapyramidal motor system, including tremors,
motor restlessness and pacing, and muscle spasms of the limbs that caused his arms and legs to twist to one side. Although lower doses of antipsychotics reduced these harmful effects, he did not recover from his "illness".

A happier ending was seen in the case of Mr. X, which was discussed previously. This case refers to a 31-year old, married, university lecturer, diagnosed as schizophrenic which psychiatrists deemed incurable. His breakdown occurred due to his mother's disappointment of his marriage to non-Jewish woman. The patient was not eating, not sleeping, and continually hallucinating. Electro-convulsive therapy (ECT) was strongly but pessimistically recommended. "He had been held together by the fantasy that if only he were good enough, then his parents would accept him". However, when he realized that his intellectual achievements as a Ph.D. and a lecturer at a prestigious college did not please his parents, "his defenses unraveled" (p. 14). An additional contributing factor was "fear of punishment for his sexuality and intensely guilty about masturbating, feeling that "his body and his penis really did not belong to him" (p. 15). The major components of the therapy that enabled Mr. X to recover from his psychological problems were as follow:

1. **Therapeutic Alliance and Support of the Wife:** The therapist was supportive and optimistic, and told the patient that he could telephone him at any time. In emphasizing the importance of this issue, Karon noted, "the therapist must create a therapeutic alliance by becoming helpful, tolerating incoherence, tolerating not understanding, and being realistically optimistic" (p. 4). An additional important support that contributed to his recovery, was the support of his wife. As noted by the patient "when I needed her, she saved my life. The doctors said, 'Shock him'. My
family said, 'Shock him', but she had the courage to defy them and see that I got real
treatment" (p. 21).

2. **Behavior Therapy**: In order to motivate Mr. X to eat, Karon scheduled a few
sessions at "an all-night restaurant". Initially, Mr. X only watched the therapist eat,
then in the next session he took some coffee, and finally he ate *breakfast*. Similarly,
in order to overcome his complaint of not being able to read and his sexual
inhibition, he was asked to buy a copy of Playboy and try to read it. The therapist
then talked with him about the normality of sexual curiosity and interest. Within few
sessions, he was able to read, while protesting that it was a terrible "pandering
magazine".

3. **Lifting of Repression and Removal of Stressors**: Therapy focused on increasing the
patient's awareness to his *current* stressors and strengthening his abilities to resolve
them by rational means. These effects were obtained by the following actions:

   a) **Distorting the Mother's Idealization**: The therapist encouraged insight especially
   with regard to the harmful effects of his mother on his feelings of inadequacy, guilt
   and worthlessness and encouraged an antagonistic attitude toward her. Thereby, he
   was motivated to disconnect his self-worth on meeting her expectations. Three
   examples demonstrate the therapist's systematic efforts to smash the mother's
   idealization. One example is the patient's recollection that his mother used to dress
   him in white clothes when he was five years old and sends him out to play and then
   punish him for getting dirty. He felt that this was correct because it was his fault.
   However, the therapist utilized this experience to portray a negative image of the
   patient's mother. He noted that
Of course, any parent knows that if you put a little boy in all white clothes in a hermetically sealed room, he would still manage to get dirty in an hour or less. I pointed out how his mother set him up for this, that any child would get dirty, and that she probably enjoyed punishing him (p. 16).

A second example concerns the therapist's inquiry regarding a scar on the patient's hand. Mr. X said that his mother held his hand in the burner to teach him not to steal after he took a toy from a store when he was five years old. After that session, Mr. X's hallucination of burning in hell disappeared. Thus, it seems that the hell hallucination symbolized Mr. X's fear of punishment for violating his mother's expectation by not marrying a Jewish woman. The negative portrait of the mother in the toy episode and other occasions had curative effects as this smashed his idealization of his mother.

A third example demonstrating the therapist's effort to sabotage the mother's image relates to a hallucinating experience that occurred after the third year of therapy. The patient's upper lip became swollen for no apparent reason. He experienced "something big and white" in his mouth that felt good but also suffocated him. Karon utilized this experience to further destroy the positive image of the patient's mother. He told Mr. X that the white big thing was his mother's breast that felt good, "but almost smothered him. She didn't seem to know enough to make sure he could breathe. It felt like she nearly killed him and might the next time." (p. 20). The hallucination disappeared, and shortly afterward so did the lip swelling.

Mr. X was fully recovered, as he returned to work at his intellectually demanding job four months later. Twenty years later, he sent the therapist a note thanking him for "giving me my life back" (Karon, 2008; see also Silver, 2008). Not only does this case
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challenge the validity of medical models, as it is hard to see how they would be able to explain his full recovery if he did suffer from brain disease, but it also discloses their faulty therapeutic intervention. Had his wife not intervened while he was in the hospital, he might have the same unfortunate faith as John Cronholm.

Although the recovery was obtained by psychoanalytic therapy, this by no means supports psychoanalysis. First, as stated, studies refuted Freud's concept of repression, including the idea that the lifting of repression is a necessary condition for a genuine recovery (e.g., see a review by Rofé, 2008). Second, psychoanalysis is unable to explain schizophrenia, both because it attributes its cause to early fixations that produced defects in ego and because of its inability to address the neurological findings that this disorder is seemingly a brain disease. As noted by Willick (2002)

There is perhaps no better example of a psychoanalytic theory that has turned out to be incorrect than the once prevalent theory regarding the etiology of schizophrenia. This theory, or perhaps I should say conviction, about the cause of schizophrenia had three components. It was believed, first, that the damage to the ego and its functioning took place primarily in the first one or two years of life; second, that the major cause was to be found in profoundly inadequate caretaking; and, third, that in most cases there was no fundamental organic process responsible for the illness (p. 28).

Thus, it seems that the therapeutic success of Mr. X was not the result of the psychoanalytic therapeutic method, which supposedly uncovers repressed childhood traumas. Rather, this effect seems to be the result of stress management, where the therapist increased the patient's awareness to his current stressor and confronted him with evidence that neutralized the stress. As will be elaborated later in Part III, PBT uses the term lifting of repression whenever a therapeutic procedure increase patients'
awareness to their current stressors, which counteracts the distinctive value of the symptom.

While the issue of therapy will be discussed in much more detail in Part III, two additional comments should be made in this context. 1) Psychoanalysis is usually ineffective with schizophrenic patients, and may even increase the risk for suicide (see review by Mueser & Berenbaum, 1990). In line with these findings, the Schizophrenic Patient Outcome Research Team (PORT) concluded, "there is no evidence in support of the superiority of psychoanalytic therapy to other forms of therapy, and there is a consensus that… [It] can be harmful to persons with schizophrenia (Lehman, Steinwachs, & Co-Investigators (1998, p. 13). Psychoanalysis may be harmful, especially with patients who suffer from significant cognitive defects and severe lack of social skills, which usually results from genetic flaws. Under these conditions, insight-oriented therapy that increases patients' awareness to traumas, real or fictitious, can aggressates their emotional state, as they are inherently unable to cope with this situation. 2) A full recovery was also obtained by therapeutic methods that enhance schizophrenics' ability to cope with their current stressors, other than psychoanalysis. As described in Part III, Bradshaw (1998) reported a case study of a 26-year single female, with a similar background to John Cronholm, who fully recovered by cognitive therapy that addressed the patient's current stressful situation.

In conclusion, medical models used the outcomes of drug therapy as one of their strongest evidence in their campaign to demonstrate that schizophrenia is a brain disease. Moreover, in the recent years they also expanded this faulty method to neuroses. However, first it is difficult to see how the disease model can integrate
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findings of full recovery in the absence of drugs. In this regard it is also worth mentioning the famous cases of Joanne Greenberg, the bestselling author of *I Never Promised You A Rose Garden*, and Catherine Penney, a mental health nurse (who fully recovered without medications (see the documentary movie by Daniel Mackler, *The Broken Wings*). Second, not only does the evidence of drug therapy not support their theoretical claims, but in fact it, acts as a boomerang against this conception, particularly when combined with the large amount of research and clinical studies that were reviewed above, regarding their serious harmful effects.

Nevertheless, it is important to note that PBT does not totally object the use of drugs, provided that: 1) Drugs are given at a very low dose when the patient's level of depression is extremely high, just as when people are given paracetamol when they have high temperature; 2) It is agreed that drugs do not have curative effects. If this new understanding of drug effects would have been taken into consideration by the medical system in the University of Harvard, it seems probable that it would have prevented the Unabomber's criminal acts. In addition to drugs, actions had to be taken to address the patient's psychological difficulties, particularly his loneliness and his sexual frustration, when he initially applied to asking for help during his academic studies. As noted by the Unabomber (1995), in his 35,000 words manifesto,

Instead of removing the conditions that make people depressed, modern society gives them antidepressant drugs. In effect, antidepressants are a means of modifying an individual’s internal state in such a way as to enable him to tolerate social conditions that he would otherwise find intolerable.
Discussion

PBT's Diagnostic Advantages

Freud observed in his clinic five fundamental characteristics common to all bizarre behaviors, which can be seen by any objective observer: 1) a dramatic behavioral change, which occurred either in a sudden or a gradual manner, 2) severe disruption of the individual's daily functioning, 3) an absence of an observable event that could justify these unusual behavioral changes, and 4) patients could not provide plausible explanation for their peculiar behaviors, 5) nor exercise control over them. Given these observations, it seems that Freud's conclusions that these behaviors have a common etiology and must be explained by one set of theoretical concepts were highly plausible. Moreover, given patients' unawareness of the underlying causes for the dramatic change in their behaviors, Freud's idea that repression is a key for understanding these behaviors seems a justified scientific conclusion. Given this state of affair and the feedback from his patients of lacking insight into the underlying causes of their severely disruptive behaviors, one can understand his strong resistance to any attempt to challenge the validity of his conviction that repression is the cornerstone of his psychoanalytic theory. In this matter, Freud (1914) noted,

If anyone should seek to regard the theory of repression and of resistance as assumptions instead of as results following from psychoanalysis, I shall oppose him most emphatically…the doctrine of repression is the outcome of psychoanalytic work, a theoretical inference legitimately drawn from innumerable observations (p. 298).
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However, the fact is that Freud's theory reached its end as a) numerous studies consistently refuted the existence of repression (Rofé, 2008); b) it could not provide objective criteria to preserve the concept of neuroses, namely that a variety of psychological disorders with completely different symptoms needed to be classified in the same diagnostic category; and c) it is unable to integrate data of rival theories, such as neurological findings suggesting that conversion disorder, which was the focus of Freud's theory, is controlled by neurological mechanisms (e.g., Van Beilen, Vogt, & Leenders, 2010), and the correlations between schizophrenia and neurological/genetic flaws (e.g., Keshava, et al., 2005; Nuechterlein, et al., 2012; Schiffman et al., 2005; Tandon, et al., 2008).

These empirical weaknesses of psychoanalysis, and the lack of a psychological theory that can provide a more adequate explanation for the bizarre behavioral changes, reinforced the scientific credibility of the medical models that causes for these behaviors must be neurological impairments. Moreover, the poor empirical status of psychoanalysis was utilized by advocates of medical models to altogether dismiss the possibility that an alternative parsimonious theory that would be able to explain a variety of psychological disorders by one set of theoretical concepts (e.g., see Wakefield, 1999). Accordingly, since the diagnostic category of neuroses, namely the classification of behavioral disorders with completely different symptoms under one diagnostic category, is incompatible with disease model, advocates were interested to abolish this concept. Thus, while one would expect of the DSM-III's task force, who claimed to be atheoretical to examine by objective scientific means the validity of the diagnostic category of neuroses, the committee which was composed solely of psychiatrists, implicitly implemented the diagnostic approach of the medical models, and decided to remove this "troublesome diagnostic category", without an empirical examination
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of this issue (e.g., see Burstow, 2005; Follette & Houts, 1996; Pilecki et al., 2011). As a result, the DSM became an expanding list of neurological disease, which "now contains three times as many disorders as it did in 1952, and it is more than seven times longer than the first edition" (Warelow & Holmes, 2011, p. 385, see also Grinker, 2010).

PBT; challenged the validity of both DSM's diagnostic approach and the medical explanation of neurotic disorders, by proposing a theory which continues Freud's clinical intuition that bizarre behaviors share similar etiology and that they should be incorporated under one theoretical roof. The initial step in support of this new approach is research and clinical data which demonstrates that bizarre behavior, both neuroses and psychoses, share five major characteristics and two secondary, which effectively differentiate them from other behaviors (see Rofé, 2016). Accordingly, based on the DSM's requirement that "classification should be based on shared phenomenological characteristics" (APA, 1976, p.11), there seems to be sufficient scientific justification to reinstate neurosis as a diagnostic category. This diagnostic change should by itself, independent of PBT's theoretical approach, be enough to question the validity of medical models since as stated above a group of heterogeneous behavioral disorders cannot have the same neurological etiology.

PBT's diagnostic approach has three main advantages over DSM. First, unlike DSM's diagnostic approach, which reached its diagnostic decisions by consensus of one group of experts that was theoretically biased and may have been motivated by personal interests as well (see Pilecki et al., 2011), PBT's diagnostic categories were based on significant clinical and research data. Second, the DSM's diagnostic approach has little clinical value as it supposedly was atheoretical, and thus provides no explanation of the underlying causes of psychological disorders. In this regard, Wakefield (1999) noted, "the use of theory-neutral
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criteria goes against a common position in philosophy of science that scientific progress generally goes hand-in-hand with greater theory ladenness of basic classificatory concepts" (p. 1002). Similarly, Follett and Houts (1996) claimed that "without a theory, categories proliferate, and any atheoretical system will eventually fall of its own weight as will classification systems that are based on inadequate theory" (p. 1122). The same attitude was expressed by Pilecki et al. (2011). Accordingly, PBT's diagnostic categories are preferable over those of DSM as they stem from a theory that has already demonstrated its ability to account for the development of neurosis and psychosis using one set of theoretical concepts and integrates all therapeutic methods, pertaining to these disorders, into one theoretical framework (Rofé, 2000; 2010; Rofé & Rofé, 2013; see also Part III).

Third, following the abandonment of Freud's idea that mad behaviors should have a unique diagnostic category, the DSM created new diagnostic categories where bizarre and non-bizarre deviant behaviors were classified into the same category only because they were similar in one single criterion. For example, DSM-III and IV (APA, 1983, 1994) created a diagnostic category of anxiety disorders, in which it classified OCD, that includes bizarre behaviors such as compulsive cleaner who washes her hands 200 times per day but leaves her legs and feet unwashed for months (see Rachman and Hodgson, 1980; p. 65), together with non-mad behaviors such as PTSD, which is quite an understandable response to extreme trauma (see Burstow, 2005), only because both display observable anxiety (APA, 2000).

Another example of heterogeneous classification is the DSM-5's decision to group conversion disorder, which lacks medical cause (e.g., hysterical leg paralysis, blindness and psychogenic movements), together with a new diagnostic category, "Psychological Factors Affecting Other Medical Conditions," such as diabetes, cancer, and coronary disease that have
an observable medical cause but were exacerbated by psychological factors (APA, 2013). In an attempt to rationalize this decision, the DSM's authors noted they did not want to give conversion disorder the diagnosis of mental disorder because this will reinforce the "mind-body dualism" (309). Thus, although the DSM's authors acknowledged that conversion disorder is medically unexplainable, they categorized this disorder together with non-mad behaviors that have clear medical cause, only because they didn’t want to reinforce the psychoanalytic theory which maintains the mind-body dualism (e.g., see Carella, 1974). Hence, while it may seem legitimate to hold such anti-psychoanalytic position, it becomes problematic when it is promoted by scientific authority that pretends to be atheoretical (see also Rofé & Rofé, 2013).

PBT's Parsimonious Theoretical Approach

PBT's most important contribution is not in the realm of the diagnosis, though this is a critical for a genuine understanding of behavioral disorders, but rather in continuing Freud's parsimonious theoretical approach in psychopathology. This theoretical goal became possible by rejecting the axiomatic assumption of the psychoanalytic theory that mad behaviors are determined by irrational factors. Instead, these behaviors are seen as rational coping mechanisms, which individuals intuitively/unconsciously adopt when confronted with an intolerable level of stress. This fundamental theoretical change in the conception of behavioral disorders enabled PBT to integrate all data pertaining to schizophrenia, criminal insanity and neuroses into one theoretical framework.
PBT's parsimonious approach became possible also because it conceptualizes repression differently than psychoanalysis. On the one hand, it maintains Freud's idea that neurotic patients repress the underlying causes of the dramatic change in their behaviors and expands this claim to schizophrenia as well. On the other hand, it nullifies repression from the aforementioned five components (see p. 7), which received no empirical support, and preserves only the essence of this concept, defined by Freud (1915, p. 147) as distraction. PBT also rejects the psychoanalytic doctrine of repression which views it as unconscious process (Cramer, 2001; Wilson & Dunn, 2004), and remains faithful to Freud's original thought that viewed it as a conscious, deliberate distraction process (see Erdelyi, 2006; Erdelyi and Goldberg, 1979). However, the most significant change of the psychoanalytic concept of repression is that in PBT repression is the consequence rather than the cause of madness. Patients intuitively choose mad behaviors in order to block the accessibility of stress-related thoughts.

Another fundamental idea that enabled PBT to explain mad behaviors by a small number of concepts is the conception of these behaviors in economic terms. Research and clinical data reviewed above indicate that there is no significant difference between purchasing economic products and the adoption of madness. In both cases, the choice of a specific product/symptom is determined by three principals: Needs, which in madness are repression and controllability, availability of suitable "merchandise" and cost-benefit analysis. These principles enable PBT to account for three types of variability of mad behaviors: 1) Variability within each disorder (e.g., why one patient develops hysterical blindness while another develops hysterical paralysis, or why Nash and the Unabomber developed completely different type of schizophrenic symptoms despite the similarity in their academic
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backgrounds and history of genetic predispositions); 2) Variability between different types of mad behaviors (e.g., why people develop different types of madness, such as neuroses, criminal insanity or schizophrenia); 3) Variability in the prevalence of mad behaviors among different social groups, such as gender, socio-economic and culture (western vs. non-western society) differences, religious-non-religious groups and fluctuations in the rate of some psychological disorders across different periods of times (e.g., the increase in the prevalence of eating disorders and DID, and decrease in the rate of conversion disorder). As will be elaborated on in Part III, one important additional contribution of these principles is that, together with the new conception of unawareness to be discussed later, they enabled PBT to integrate the various treatment methods pertaining to madness into one theoretical framework.

A New Conceptualization of Schizophrenia

PBT's most revolutionary claim is concerned with new insight of the underlying causes of schizophrenia. There seems to be little doubt, in light of the clinical data reviewed in Part I, that the universally accepted conviction that schizophrenia is a brain disease, resulted because of weaknesses of psychological theories and misleading research methodology. As stated above, this conviction became widely accepted, mainly because no psychological theory could explain the correlation between schizophrenia and genetic/neurological flaws. Consequently, case studies of schizophrenia with no evidence of brain impairments, as well the fact that schizophrenia is characterized by large variability of symptoms that are clearly unexplainable by medical terms, were not seen as evidence that can challenge the validity of the medical explanation of these behaviors. These cases were automatically attributed to
neurological impairments, without feeling a need to examine the validity of this thesis, and it was implicitly assumed that with advance research, neurologists would eventually be able to resolve these challenging problems. PBT reversed the method of investigation: Firstly, it examined case studies with no evidence of genetic/neurological flaws and then generalized conclusions deriving from these cases for the explanation of the correlational findings. Using this methodology, PBT succeeded for the first time in the history to expose the inadequacy of these models and to show the superiority of a psychological explanation of this disorder. Moreover, while medical models since Emil Kraepelin regard schizophrenia as suffering from illogical thinking (e.g., Falkai, Rossner. Schulze, et al., 2015), PBT views this disorder similar to other forms of bizarre behaviors as rational coping mechanism, which reached a peak in Nash's case study, which as stated reached the "masterpiece of madness" in the level of sophistication.

Thus, it is difficult to see how medical models can invalidate this claim when cases of schizophrenia with completely different symptoms and no evidence of neurological impairments, such as John Nash and Unabomber, can be fully explained by PBT's psychological concepts. Why should these cases be explained by medical terms if they are easily fits PBT's theoretical approach? How can medical terms explain the profound symptomatic differences of these cases if both suffer from the same disease? The need for medical terms becomes superfluous especially when considering the fact that the same concepts can successfully explain cases of criminal insanity, such as the case studies of Charles Cullen, Mordechai Vanunu, Adam Peter Lanza and Elliot Rodger. Additional difficulty concerns PBT's ability to explain the large variability of neurotic disorders by the same set of theoretical concepts. Furthermore, although PBT acknowledges the significant
relationships between schizophrenia and genetic/neurological flaws, it demonstrates that its theoretical concepts can integrate these findings into its theoretical framework. Neurological impairments, particularly with interaction of pathogenic family and social environment, produce a handicap personality structure which severely lacks coping skills. As a result, they are likely to experience extreme levels of stress, severe blow to their self-esteem, which as specified above, motivates them to develop schizophrenia, as the specific symptoms of this disorder meets well with their unique coping demands.

Additional support is the fact that often psychological interventions, such as psychoanalysis and cognitive therapy, as will be specified later in Part III, yield positive therapeutic results. It is difficult to see how this evidence can be incorporated within the framework of brain disease. In contrast, it is a doubtful whether drug therapy can strengthen the position of medical models, especially in light of the poor therapeutic outcomes and their serious harmful effects to both cognitive and physiological systems of these miserable people.

As was indicated, Willick (2002) noted in his critique of psychoanalysis that "there is perhaps no better example of a psychoanalytic theory that has turned out to be incorrect than the once prevalent theory regarding the etiology of schizophrenia" (p. 28). Using similar terminology, we can now say, following evidence presented in Part I, that there is no example in the history of science, and probably never will be, of a theory that has turn out to be incorrect, which led to barbaric treatments of miserable people for more than a century, as the conception of schizophrenia as a brain disease.

Methodological Considerations

It is difficult to see how PBT's major theoretical foundations can be challenged. This especially refers to: 1) the diagnostic criteria that enables us to preserve Freud's categories of
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neuroses and psychoses; 2) the new concept of repression; 3) idea that these behaviors are coping mechanisms that patients intuitively/unconsciously choose in response to stress; and 4) the three principles which guide them to choose a specific symptom. As far as new data is concerned, which according to Karl Popper (1959) is needed for the acceptance of a new theory, the relatively large number of case studies reviewed above should meet this requirement. Furthermore, recent developments in the philosophy of science states, based on an empirical examination of theories that initially did not have data of their own and then became a dominant theory in their field,, arrived at the conclusion that the ability of a theory to explain existing data is more important than its ability to present new supportive evidence. For example, Proctor and Capaldi (2001) noted, in reference to the new idea of Plate tectonics that placed existing geological data into a coherent explanatory context, that European colleagues accepted Plate theory well before the American geologists, as they valued explanation as well as prediction, whereas American scientists limited themselves to prediction and testing hypotheses. Likewise, Tyron (2005) noted, "Darwin's evolutionary theory remained on the margins of biology for approximately 75 years until population genetics provided the missing causal explanatory mechanisms" (Tryon, 2005, p. 69). Snyder (1994) clarified that it makes no difference whether the data existed before the formulation of the new hypothesis or afterwards. In other words, no one has ownership of the data, including those who made it available. Data is constantly open to interpretations and better explanations, regardless of the time it became available. Similarly, Brush (1989) noted,

A successful explanation of a fact that other theories have already failed to explain satisfactorily … is more convincing than the prediction of a new fact, at least until the competing theories have
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had their chance (and failed) to explain it (p. 112; see also Brush, 1989, 1990, 1992, 1993, 2005).

An additional criterion that should be taken into consideration when evaluating a new theory, certainly when considering the merit of an integrative theory, is the principle of parsimony, also known as Ockham's razor (e.g., Baker, 2007; Braithwaite, 2007; Epstein, 1984; Sober, 1981). This principle states that among competing theories, the theory with the fewest assumptions must be selected over a more complex theory (e.g., Baker, 2007; Braithwaite, 2007; Epstein, 1984; Sober, 1981). Simplicity ought to be one of the key criteria for evaluating and choosing between rival theories. "The essence of the point, in its proper context, is to start from the simplest possible explanation and make it more complex only if, and when absolutely necessary" (Braithwaite, 2007, p. 1).

Thus, there seems little doubt, especially when considering the next two Parts of this book relating to the creation of unawareness and therapy, that at this period of time, there is no theory which is able to integrate and explain existing data pertaining to the development and treatment of schizophrenia, criminal insanity and neuroses, better than PBT.

One may still question the validity of PBT by arguing that the case studies used in Part I are not a representative sample of the relevant population and therefore are insufficient to validate PBT. However, while more clinical data may be needed, these cases challenge the validity of the medical models, and more importantly they question the methodology of correlational studies by which medical models validated their theoretical claims. Moreover, questioning the validity of PBT more seriously, three conditions must be fulfilled. First, opponents must propose alternative explanations for all the cases reviewed in Part I, including neuroses, criminal insanity and schizophrenia. Second, medical models must present evidence of their
own, other than the cases reviewed in Part I, which are more adequately explained by them than by PBT. Third, they must suggest suitable explanations for the large variability of symptoms, at least within each of the neurotic disorders, criminal insanity and schizophrenia. At any case, medical models can no longer enjoy the credibility of respectable scientific status only because no theory could compete with their explanations. They must take the challenge and defeat PBT in the scientific field.

Moreover, before questioning the methodology of case studies, rival theories, other than psychoanalysis, need to explain in what sense animals can promote the understanding of mad behaviors. Animals do not exhibit human-like bizarre behaviors which seem to be uniquely creative actions of humans. Though harsh environmental conditions (e.g., electric shocks) may produce extreme behavioral dysfunction among animals, as shown in a number of studies on "experimental neurosis" (see Mineka & Kihlstrom’s review, 1978), and learned helplessness (Seligman, 1974, 1975), these behaviors do not seem as senseless as neurotic and psychotic symptoms. As noted by Mineka and Kihlstrom (1978), given the unusual, stressful conditions to which the animals were subjected during the experimental neurosis, it would have been surprising if the animals did not display emotional disturbances. Further, there is no evidence that animals, as opposed to humans, exhibit a variety of deviant behaviors when exposed to the same stressful situations. Unlike humans, the same deviancy displayed by an animal can be experimentally produced among subjects of the same species. Accordingly, it seems that while animals may promote our understanding of the development and treatment of simple phobias and depression, they cannot assist in the understanding of the development of neurosis and psychosis. This claim is especially applicable to schizophrenia, where animal models are used to understand the underlying cause of this disorder (e.g., see a review by Marcotte, Pearson, Srivastava, 2001). As noted by Skrabaneck (1984):
[It is] startling when one reads about attempts to use animal models of schizophrenia. It is an understatement to write that ‘the fact that schizophrenia is a thought disorder complicates the creation of animal models...’ A paranoid rat? A hallucinating guinea pig? A thought insertion in the ass? (p. 22).

**Conclusion**

During the last century, the explanation and the treatment psychological disorders were dominated by two major theoretical empires, psychoanalysis and medical models. While the psychoanalytic kingdom was limited primarily to neuroses, that of medical models ruled the explanation of psychotic disorders. With the scientific collapse of psychoanalysis, medical models expanded their kingdom also to the entire field of behavioral disorders. However, as was indicated above, they reached this respectable scientific position not because of the strength of their data but mainly because no psychological theory could challenge their validity. Clinical and research data reviewed in Part I demonstrated the superiority of PBT in reference to four major topics: 1) **Diagnosis of psychological disorders**: PBT's diagnostic criteria showed that neuroses and psychoses should be separated from other behaviors and be classified into two diagnostic categories of bizarre behaviors. This evidence itself is sufficient to invalidate the medical models as it states that these behaviors share similar etiology, which is incompatible with the disease model; 2) **Variability of symptoms**: Unlike medical models, which are unable to explain the variability of symptoms even within the same psychological disorder, PBT's three principles of choice of symptoms allow us to account for all variabilities of the symptoms within each disorder as well as between different disorders. These principles
enable us to integrate the effects of stress, genetic factors, media and socio-culture variables on the variability in the prevalence of these disorders; 3) **Integrative abilities:** Contrary to medical models, which focuses only on a specific disorder and their own data, overlooking the theoretical and empirical data by rival theories, PBT is capable to integrate in its theoretical framework: a) research and clinical data pertaining to behavioral disorders with completely different symptomatology; 2) theoretical and research contributions made by major schools of thoughts in this field, including medical models, psychoanalysis and behavior-cognitive theories. This includes not only data regarding the development of these disorders, but also those relating to the phenomena of unawareness and treatments of these disorders, as will be demonstrated in the next two parts of this book.

In conclusion, PBT continues Freud's clinical intuition that a necessary condition for the understanding human's deviant behaviors is to make a sharp distinction between bizarre and non-bizarre behaviors and his vision that bizarre behaviors share similar etiology and need to be explained by one set of theoretical concepts. The clinical data presented in Part I strongly support these claims. Thus, it seems that the victory fanfare trumpeted by advocates of medical models that "previous claims to have formulated general theories of the etiology of all mental disorders... have consistently proven unsatisfactory and degenerated into ideological masked as scientific theories" (Wakefield, 1999, p. 969), was premature.
Part II

Unawareness
The Intuitive Rational-Choice Theory of Madness

Introduction
Patients' unawareness of the underlying causes of their dramatic behavioral change, and in some cases unawareness that their behavior is deviant still remained a mystery, despite tremendous research and clinical efforts during the last century. Unlike behavior-cognitive theories and medical models, who disregarded the importance of this issue, Freud made it the central concept of his theory. PBT shares the same view as psychoanalysis that the understanding of this issue is key for the understanding of both the development of bizarre behaviors and the mechanism by which the therapeutic change occurs. There seem to be two major possible explanations of this phenomenon: The Mechanistic-Irrational Unawareness and the Creative-Rational Unawareness.

The Mechanistic-Irrational Unawareness
This proposal promoted by Freud assumes the existence of an autonomous cognitive entity, independent of the conscious, which has the ability to impose bizarre behaviors, against the individual's conscious willingness. As noted by Keuler (1998), the unconscious "possess the omnipotence or wisdom to 'know' what is best for the conscious self" (p. 439). Advocates of this resolution, including of course Freud, must have arrived to this conclusion because they implicitly precluded the possibility that current stressors could have been the direct cause for the development of bizarre behavior. Indeed, at the first glance, this claim seems quite reasonable due to the following reasons: 1) Many people are subjected to extremely stressful situations, and yet only a small minority develop a mad behavior; 2) If stress would have been the source of madness, patients must have been aware of this cause, just like people with post-traumatic stress disorder; 3) Bizarre behaviors seems so irrational and disruptive, that it
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is improbable that that they would be consciously adopted. Accordingly, Freud must have arrived to the conclusion that both neuroses and psychoses are the result of early traumas, which have been stored in an autonomous unconscious entity. These behaviors are automatically forced, once a current stressful event triggers the repressed traumas.

However, this theoretical proposal proved to be unsatisfactory due to both empirical and theoretical difficulties. Empirically, as stated, numerous studies refute the existence of repression, without which the unconscious has no clinical value; 2) There is no significant evidence which supports the existence of the autonomous unconscious entity (see review by Rofé, 2008). Moreover, practically, psychoanalysis is the least effective therapeutic method (see review by Rofé, 2008). Accordingly, an increasing number of researchers arrived at the conclusion that "far from supporting the dynamic unconscious, recent work in cognitive science suggests that the time has come to dispense with this [Freudian] concept altogether" (e.g., O'Brien & Jureidini, 2002, p. 141; see also Greenwald, 1992; Grünbaum, 2002; Kihlstrom, 1999, 2000, 2004).

The Freudian unconscious also has little theoretical value. Fundamental issues remained unsolved, such as the variability of both neurotic and psychotic symptoms, and its inability to integrate research and clinical data of rival theories. For example, Freud's idea that schizophrenia is the result of childhood's problematic relationships with the mother, sounds detached from reality in light of the strong relationship between this disorder and genetic/neurological flaws (see Willick, 2002). Another problematic issue is the idea that bizarre criminal behaviors, such as serial killings or rape, are compelled by the unconscious, and therefore the individual is not punishable.
The Creative-Rational Unawareness

In sharp contrast to psychoanalysis, PBT claims that bizarre behaviors are one of the limited options that people may consciously adopt when encountering an unbearable level of stress. Individuals may intuitively feel, with little or no conscious awareness, that a specific bizarre behavior, suggested to them through their past or current experiences, is the best suitable option for their coping demands. However, the conscious is the only cognitive executive system which decides, after rapid cost-benefit analysis, whether or not to implement the intuitive suggestion. Moreover, unawareness is a creative cognitive activity, where the conscious plays an active role in its production. Patients become unaware of the Knowledge of Self-Involvement (KSI) or the True Reason (TR) for acting bizarrely, through a variety of cognitive processes that cause the forgetting of KSI/TR. Concurrently, with the creation of this state of unawareness, patients develop self-deceptive belief. Usually, this belief is strongly associated with the individual's cultural belief system, enabling one to preserve this cognitive state and to consciously redisplay the symptom and yet remain unaware of KSI/TR. Before specifying these complicated cognitive processes, it may be important to specify a number of advantages which this theoretical model of unawareness may yield.

1) It enables us to use the new concept of repression, defined as a deliberate conscious distraction, and yet to preserve its psychological function of blocking the accessibility of stress-related thoughts, as originally suggested by Freud.

2) Unlike the Freudian unconscious, PBT's unawareness concept enables the integration of evidence indicating the involvement of the conscious in the maintaining and redisplaying of the bizarre symptoms. For example, subjects with hysterical seizures
have the ability to prevent injury upon falling to the ground, tongue biting, and post-seizure confusion (e.g., Blanchard & Hersen, 1976; Nicol, 1969). Similarly, patients with hysterical paralysis fail to display the symptom when their attention is distracted (e.g., Cassady, Kirschke, Jones, Craig et al, 2005; Kihlstrom, 1994, p. 382; Merskey, 1995) or weakened during sleep (e.g., Laurema, 1993). Likewise, Leonard (1927) adapted his agoraphobic behaviors after the university's threat to fire him if he did not resume his work; kleptomaniacs, who supposedly are unable to resist their bizarre impulse to steal, avoid stealing when immediate arrest is probable (DSM-IV, American Psychiatric Association, 1994). Similarly, although the Unabomber was unaware of the reason for his bizarre serial killings, it enable us to integrate Magid's (2009) claim that Kaczynski's transformation into the Unabomber resulted from "conscious choices" rather than from a brain disorder. "Kaczynski extensively planned, prepared, and pondered before engaging in specific attacks, suggesting heightened culpability".

3) Unlike Freudian unconscious, PBT's concept of unawareness enables us to have a new understanding, as will be demonstrated later, why certain stimuli, such as dirt and CO₂ inhalation, automatically provoke OCD and panic attacks among panic disorder patients, respectively, which currently appear to be explainable only by cognitive-behavior theory.

4) As will be demonstrated later, PBT's new concept of unawareness can explain in rational terms the unresolved mystery of why certain patients acknowledge their "illness", such as bulimic patients, while others with the same type of deviant
behavior, such as anorexics, deny that their behavior is deviant and even "enjoy" having this maladjusted behavior.

5) The new concept of unawareness should be able to explain why therapeutic methods, such as exposure, cognitive therapy, and religious therapy (e.g., shaman), obtain positive therapeutic outcomes, despite the fact that they do not relate to the repressed traumas? Additionally, it can validate Freud's claim that the lifting of repression, namely increasing patients' awareness to the underlying causes of their behavior, can facilitate a genuine recovery.

The Intuitive Choice of Madness

A large number of studies on intuitive thinking distinguish between two types of decision-making processes, analytic and intuitive thinking. Analytic thinking occurs when the individual consciously examines the various options and relevant information before reaching a decision. In contrast, intuitive choices are made rapidly with little or no conscious effort (e.g., see Dane, Baer, Pratt, & Oldham, 2011; Glöckner & Witteman, 2010; Hogarth, 2010; Kahneman, 2003; Pretz, 2008; Sarmány-Schuller, 2010). As noted by Hogarth (2001), an intuitive decision is "often experienced in the form of feelings (not words)…. The correlated are speed, and … we know, but we do not know why [italics added]" (pp. 9-31). Similarly, Kahneman (2003) asserted, "a defining property of intuitive thoughts is that they come to mind spontaneously, like percepts" (p. 699; see also Sinclair et al., 2010; Sadler-Smith, 2008). Intuitive decisions are often made during stressful situations "when an in-depth analysis is not possible and the decision-maker must move quickly to a plausible solution" (Sayegh, Anthony, & Perrewé, 2004, p. 183; see also Roghanizad & Neufeld, 2015). Intuitive decisions
are based on the individual's experiential resources stored in the long-term memory and usually are no less rational than conscious deliberate decisions (e.g., Glöckner & Witteman, 2010; Sayegh et al., 2004). Sayegh et al. noted, "Theories of rationality have come a long way since Descartes proclaiming the superiority of cognitions. We now acknowledge that the human mind and the nature of our existence are defined by more than our ability to reason … rationality … [it] is partly defined through our ability to experience emotions … especially under crisis conditions…" (p. 196). Similarly, the unconscious processes are no longer perceived as a dumb entity as in Freud's theory (Loftus & Klinger, 1992), but rather is "highly intelligent and adaptive" (Bargh & Morsella, 2008, p. 73; see also Bargh, 2014; Gigerenzer, 2007). Although analytic thinking may be more precise than intuitive thinking initially, this advantage vanishes with the growing stock of experience (Sahm & von Weizsacker, 2016).

Both Steve Jobs and Albert Einstein are frequently held up as examples of eminent creators who relied heavily upon their intuition" (Burnett & Francisco, 2013, p. 1566). Albert Einstein commented on the critical importance of intuition.

For it is intuition that improves the world, not just following the trodden path of thought. Intuition makes us look at unrelated facts and then think about them until they can all be brought together under one law…intuition is father of new knowledge, while empiricism is nothing but an accumulation of old knowledge" Hermanns & Einstein, 1983: 16).

Based on these findings, it seems that when the individual experiences an intolerable level of emotional distress, certain abnormal reactions based on the individual's past and current experiences that suit his specific coping needs, become spontaneously salient in his attention. Gut feelings that these behaviors effectively reduce the individual's
emotional distress may motivate him or her to consciously implement this coping mechanism. This claim is consistent with experimental studies from the economic field indicating that people tend to spontaneously choose a product that enables short-term gratification when faced with stress (Shiv & Fedorikhin 1999, 2002). This suggestion also fits with Nash's answer to a colleague, as previously mentioned, who asked him how could he, a mathematician, a man devoted to reason and logical proof, believe extraterrestrials are sending him messages. Nash replied, "The ideas I had about supernatural beings came to me the same way that my mathematical ideas did. So I took them seriously" (Nasar, 1998, p. 11). Nash's reply that madness may be an intuitive rational decision is reflected in his autobiography after his recovery. Nash (1994) noted,

At the present time, I seem to be thinking rationally again in the style that is characteristic of scientists. However this is not entirely a matter of joy as if someone returned from physical disability to good physical health. One aspect of this is that rationality of thought imposes a limit on a person's concept of his relation to the cosmos. For example, a non-Zoroastrian could think of Zarathustra as simply a madman who led millions of naive followers to adopt a cult of ritual fire worship. But without his "madness" Zarathustra would necessarily have been only another of the millions or billions of human individuals who have lived and then been forgotten.

Nash does not assert that his thinking as a mad person was irrational and a reflection of illness. On the contrary, he insisted that his rationality was different from the an analytic thinking of scientists. The basic difference is that intuition does not limit itself to an analytic examination of reality. Rather, intuition is knowledge obtained by one's "gut feeling" (Burnett & Francisco, 2013, p. 1565) and constitutes the core of the creative process (e.g., see review by Dorfler & Ackermann, 2012; and Burnett & Francisco, 2013)."
However, unlike the Freudian unconscious, where the individual is forced to behave in a self-destructive way, the intuitive-unconscious system functions in an opposite way, i.e., enhancing the individual's well-being. Madness is a rational resolution that enables the individual to reduce his or her intolerable level of emotional distress when other options seem to be more costly. Another fundamental difference is that the intuitive-unconscious system does not possess an executive function. Gut feelings that a specific bizarre behavior can effectively reduce his unbearable emotional distress, motivate the individual to spontaneously implement this intuitive choice. By itself, the intuitive choice is insufficient to account for patients' unawareness of KSI (knowledge of self-involvement) or TR (true reasons) of the deliberate adoption of the specific madness. Unawareness of KSI/TR at the initial adoption of the symptom and its repeated display is the consequence of three psychological processes. These processes include: 1) Creation of unawareness, caused by factors inducing the forgetting of KSI/TR; 2) Preservation of unawareness, which is obtained mainly through the development of self-deceptive belief, prevents the retrieval of this information; and 3) Stabilization of unawareness, where patients remain unaware of KSI/TR, despite the conscious involvement in each new display of the symptom.

I. Creation of Unawareness: Forgetting of KSI/TR

In order for patients to forget the knowledge of their conscious decisions (i.e., KSI/TR) and to implement the intuitive chosen symptom and thus become unaware of this decision, the encoding of this information must be weak. This effect is obtained through a number of factors that disrupt the encoding of KSI/TR and several memory-inhibiting mechanisms that prevents its retrieval.
Encoding-Disrupting Factors

1) Brief Exposure to KSI/TR: One critical variable that determines the likelihood of forgetting the KSI/TR immediately after the adoption of the mad behavior is the duration of the patient's exposure to this information. This is consistent with evidence that the duration of exposure to a stimulus is critical in determining the strength of the memory and the likelihood to forget this information (e.g., see DiNardo & Rainey, 1991; Memon, Hope, & Bull, 2003; Mensink & Raaijmakers, 1988). In such cases, the exposure to KSI/TR will hardly reach the long-term memory. Although sometimes the symptom is spontaneously suggested by current environmental factors, here too, the encoding process must be very weak due to the brief exposure.

One example of this process is a case of an unhappily married man whose wife became pregnant despite their agreement to remain without children (Malamud, 1944). On the way to the hospital to visit his wife and the newly born child, the man was slightly injured in a car accident and spontaneously developed hysterical blindness. Obviously, the patient did not have an opportunity to contemplate KSI/TR, as he spontaneously decided to develop the symptom. A second example is the previously mentioned case by Brady and Lind (1961) of a 40-year old man who suddenly developed hysterical blindness, when his wife and mother-in-law were unusually demanding. Similarly, Masserman (1946) describes a 40-year old woman who suffered through several years of severe depression during an unhappy marriage. The woman tolerated this unhappy state until her favorite child died from an illness, and then she suddenly developed a dissociative fugue. In another case (Abse, 1959), a man spontaneously developed total paralysis of his legs after his wife left him for another man. The husband had a strong impulse to pursue his wife in order to kill her and her lover, but the sudden paralysis prevented him from carrying out this impulse. In all of the above cases, the symptom was
chosen spontaneously or intuitively and immediately implemented so that the individual's conscious exposure to KSI/TR was very brief.

Another example is Leonard (1927) who suddenly experienced a panic attack when he saw a freight train from afar and imagined the train was about to run him over. As noted above, it is implausible that the train episode at age two, where he was almost run over, was the cause of his disorder, despite Leonard's and other psychoanalytic oriented researchers' claim. It appears that this incident was encoded in Leonard's long-term memory, especially because Leonard was "talking a great deal about it ever since" (p. 16). It seems likely that Leonard intuitively felt that panic and agoraphobia would effectively meet his repressive and controllability demands. This resolution became salient in his attention due to the following two facilitating factors: 1) He saw the freight train at the time when he was highly desperate while standing alone on a cliff overlooking a quiet lake; 2) He was "familiar with abnormal psychology" and was strongly influenced by Freud's theory, since he "read, first and last...the chief men in the field, their books and technical journals in half a dozen languages...even to eight German volumes of Freud. (pp. 323-324). As will be elaborated upon later, he probably felt that he could more easily deceive himself that the panic was out of his conscious control, just as individuals of non-western societies who believe that they may be possessed by a devil.

Thus, Leonard utilized his available childhood experience, upon seeing the freight train from a distance to fake the panic attack, because he intuitively felt that: 1) this behavior can serve his repressive and controllability demands; 2) it enables him to more easily deceive himself that he was "possessed" by the unconscious. As a result, since this "plot" was not planned in advance but was decided on the spot, and because the implementation of this behavior was almost automatic with little contemplation, the exposure to KSI/TR was necessarily brief. This made the encoding of this information difficult.
2) *Impaired cognitive functioning*: A vast amount of studies indicate that the adverse emotional states of anxiety and depression cause cognitive impairments, especially attention deficits (e.g., Erickson, Drevets, Clark, Cannon et al., 2005; Kemp, Pe Benito, Quintana, Clark et al., 2010; Mialet, Pope, & Yurgelun-Todd, 1996; Rief & Hermanutz, 1996). Findings also show subjects' emotional distress distracts attention and interferes with encoding processes, resulting in poor learning and memory (e.g., Christopher & MacDonald, 2005; Krames & MacDonald, 1985; Mialet et al., 1996; O'Brien, Sahakian, & Checkley, 1993; Roberson-Nay, McClure, Monk, Nelson et al., 2006; Rose & Ebmeier, 2006). Accordingly, given PBT's assumption that madness is adopted when individuals are faced with an intolerable level of stress, the encoding of KSI/TR is likely to be disrupted at the time when they consciously decide to implement the intuitive choice of the symptom.

3) *Symptom distractibility*: Research shows that encoding can be disrupted by distractive factors irrelevant to the memory task (e.g., Tremblay, Nicholls, Parmentier, & Jones, 2005; Wolach & Pratt, 2001). In this regard, the behavioral change when adopting madness is so dramatic and unusual that they are likely to consume the patient's entire attention. Attention becomes so intensely focused on these extremely powerful and distractive stimuli that the encoding of rival stimuli, such as KSI/TR, is seriously disrupted. This suggestion is consistent with Van Pelt's (1975) theoretical position, which noted that neurotic symptoms cause "super concentration of the mind, [inducing] a state of what may be called accidental hypnosis…A patient suffering from a psychoneurosis behaves in every way as though under the influence of a post-hypnotic suggestion…" (Van Pelt, 1975, pp. 28-29; see also Bliss, 1980, 1983, 1984; Frankel, 1974).

Furthermore, according to social cognitive theories of hypnosis, which view this state as an intentional goal-directed behavior, individuals become unaware of the intentional production of the hypnotic behaviors by becoming fully absorbed in their goal-directed fantasies (see
review by Lynn, Kitsch & Hallquist, 2008). Therefore, considering PBT's claim that both neurotic and psychotic patients consciously implement their intuitive choice as a coping mechanism, it can be argued that as in hypnosis, here too, patients become unaware of their KSI/TR by intentionally focusing on the actual production of the symptom. A clinical example demonstrating the overwhelming effect that symptoms might have on the individual's attention can be seen in DID, when patients altered their personalities. As noted by Bliss (1980), a DID patient "creates personalities by blocking everything from her head, mentally relaxes, concentrates very hard… clears her mind, blocks everything out and then wishes for the person, but she isn't aware of what she's doing” (p. 1392).

An additional example demonstrating the powerful distractive effect of neurotic symptoms can be seen in Leonard's (1927) autobiographical account during his initial panic attack. The encoding of KSI/TR was seriously disrupted, since as shown below, Leonard's attention was extremely dominated by panic-relevant symptoms, such as extreme catastrophic thoughts, loud shouting, and exaggerated motor behaviors.

Then on the tracks from behind...comes a freight-train, blowing its whistle. Instantaneously diffused premonitions become acute panic. The cabin of that locomotive feels right over my head, as if about to engulf me...The train feels as if it were about to rush over me... I race back and forth on the embankment. I say to myself (and aloud): 'it is half a mile across the lake - it can't touch you, it can't; it can't run you down... I rush back and forth on the bluffs: My God, won't that train go, my God, won't that train go away!' I smash a wooden box to pieces, board by board, against my knee to occupy myself against panic... (pp. 304-307)

4) **Directed Forgetting**: Studies in which subjects are instructed to forget given information, demonstrate that people have the ability to forget information by deliberately disrupting the encoding process (e.g., Anderson, 2005; Golding, 2005; Gottlob, Golding, & Hauselt,
Thus, given patients' interest in being unaware of their self-involvement, they can hinder the encoding of KSI/TR by intentionally directing their attention away from this information.

**Retrieved-Inhibiting Mechanisms**

The above factors seem to sufficiently account for unawareness of KSI/TR only among typical schizophrenic patients who exhibit severe disruption of their perceptual and thinking processes. As noted earlier, these patients cope with their stressors by deliberate intensification of their genetically available cognitive deficits, manifested as extreme attention disturbance or as fragmental thinking, as illustrated in the aforementioned excerpt of Jennifer (Schwartz, 2000, pp. 370-411), Sally (Mayer & Weaver, 2013, pp. 83-89), and those described by McGhie & Chapman, 1961, p. 106). Since the information processing becomes out of order de facto, KSI/TR cannot be encoded into the long-term memory.

However, with the exception of these patients, usually, the encoding-disruptive factors significantly weaken the transformation of the KSI/TR into long-term memory, but would not be sufficient in totally blocking the accessibility of this knowledge. In these cases, which includes all neuroses and most of schizophrenic patients, the complete failure to recall memory and unawareness of KSI/TR becomes possible due to a number of memory-inhibiting mechanisms that inhibit the retrieval of this information.

1) **State-dependent memory**: One of the major factors causing everyday forgetfulness was termed in psychological literature as "state-dependent memory," which indicates that any change between the original learned conditions and memory test may hinder the memory of the information (e.g., Blaney, 1986; Emmerson, 1986; Houston, 1991, pp. 309 – 311; Jafari-Sabet & Jannat-Dastjerdi, 2009). For example, retrieval becomes difficult when the
individual's cognitive or emotional condition is different than it was at the time of learning the information (e.g., Bower, 1981; Clark, Milberg, & Ross, 1983; Eich, 1995; Eich, Macaulay, & Ryan, 1994; Kunzendorf & Wigner, 1985; Pearce et al., 1990). This effect is also applicable to the patients' psychological state after the adoption of the mad behavior.

The distraction and controllability value of the symptom should cause a radical reduction in the individual's emotional distress immediately after its display at the initial episode. This emotional change helps facilitate forgetting KSI/TR. As noted by Leonard, "upon the sudden relief... perhaps a hundred feet away, I forgot -and forgot for fourteen years - all the factors that were associated with the Locomotive" (p. 309; see also case studies no. 2 & 3 of amnesia following attacks of spirit possession, Grisaru & Witztum, 1995; and Ravenscroft, 1965, p. 172). Additionally, since patients are preoccupied differently before the behavioral transformation, their cognitive state changes as well. In some cases, there are also environmental changes as is typical to dissociative fugue, where patients abandon their previous identity (e.g., see case study by Masserman, 1946).

Thus, based on the aforementioned studies, the abrupt changes in the patients’ emotions, cognitive and environmental conditions should inhibit the retrieval of the anxiety provoking knowledge of self-involvement.

2) Suppression: Experimental studies show that people can intentionally inhibit retrieval of unwanted memories, even after the encoding stage by reducing allocation of processing resources to this information (e.g., Anderson & Green, 2001; Anderson, Ochsner, Kuhl, Cooper, et al., 2004; Shane & Peterson, 2004). These findings are consistent with the psychoanalytic concept of suppression, the conscious effort to forget undesirable material (e.g., A. Freud, 1936). Accordingly, it seems likely that patients can intentionally suppress the retrieval of KSI/TR by directing their attention elsewhere.
3) *Distraction:* Distraction affects the individual's cognitive processes, not only during the encoding stage, but also at the retrieval of the encoded information. This claim is demonstrated in studies that examined the existence of repression in laboratory setting. Initially, a bulk of research seemingly supported Freudian repression, as subjects forgot threatening materials quicker than they forget neutral stimuli. However, later, more controlled studies revealed that this difference was due to distraction rather than repression, which refuted the validity of Freud's theory in the laboratory setting (e.g., see Holmes's review, 1974). Thus, the preoccupation with the dramatic change in behavior must be so intense that it should temporarily block patients' accessibility to their KSI/TR, together with the aforementioned factors.

4) *Hypnotic Amnesia:* Research pertaining to hypnotic amnesia shows that this phenomenon is the consequence of active distractive maneuvers through which the subject deliberately ignores relevant target cues and attends exclusively to other matters (e.g., Bowers & Woody, 1996; Spanos 1986, 1996; Wagstaff & Frost 1996). Hence, given the powerful distractive values of the neurotic and psychotic symptoms, patients can induce an amnesic-hypnotic state by deliberately focusing on their deviant behaviors, thereby blocking the retrieval of KSI/TR.

## II. Preservation of Unawareness: Self-Deceptive

Although the retrieval-inhibiting mechanisms remain in effect as long as the symptoms are active, they would be insufficient for maintaining a prolonged state of unawareness of the patient's conscious involvement in the adoption and maintenance of these behaviors. Patients may become preoccupied with questions posed by themselves or by others regarding the
causes of their radical behavioral changes. This is consistent with Nisbett and Wilson's (1977) suggestion that people search for explanations when they are unaware of the etiology of their behavior (e.g., see case studies by Kraines, 1948, p. 183; Leonard, 1927, p. 308). Self-probing is less likely among typical schizophrenic patients, who use a simple type of coping mechanism that **disrupts their information processing system**. Patients may talk to themselves and/or produce nonsense verbalizations, and thus disrupt the rational thinking, as demonstrated in the case study of Jennifer Plowman (see Schwartz, 2000, pp. 370-411), during an intake interview.

Men need sex. I have sex 10,000 times. That window is in the room because you want patients to know the color of the world. I know the president. …I don't know why I am here. I'm fine (Schwartz, 2000, p. 373).

Similar types of reactions were demonstrated by the previously mentioned case study of Sally (Mayer & Weaver, 2013, pp. 83-89) and those described by McGhie & Chapman, 1961, p. 106).

However, self-probing is likely in more sophisticated patients, where their information processing system remains intact. This includes all neurotic patients, as well as the atypical schizophrenics. Self-probing regarding the abrupt change in behavior, may also occur during the first episode. For example, as mentioned previously, Leonard (1927) noted while he experienced an intense panic attack,

> I say to myself (and aloud): 'it is half a mile across the lake - it can't touch you, it can't; it can't run you down... My subconsciousness knows what the torture is; and makes my voice shriek, as I rush back and forth on the bluffs: My God, won't that train go, my God, won't that train go away!' I smash a wooden box to pieces, board by board, against my knee to occupy myself against panic … (Leonard, 1927, pp. 304-307).

While self-inquiry during the first episode disrupts the encoding of KSI/TR, and thus enhances the creation of unawareness, after the completion of the first episode, this may
threatens the maintenance of this cognitive state. As discussed below, clinical observations indicate that patients address this threat by developing either a self-deceptive belief of illness or a self-deceptive belief of denial, depending on the specific information to which they are exposed immediately after the creation of unawareness.

**Self-Deceptive Belief of Illness**

After the creation of unawareness, most neurotic patients are faced with two types of evidence. One type is *an extrospective observation* of a deviant behavior (e.g., panic attack), and the second is *an introspective experience* of loss of control (e.g., the inability to move a limb). As a result, patients would have to *diagnose* themselves as physically or mentally ill, thereby attributing the deviant behavior to forces beyond their control. One example of this psychological process is illustrated in Leonard's (1927) autobiographical account soon *after the experience of his panic attack*. Initially, after observing a dramatic change in his behavior (extrospective evidence), and experiencing loss of control over his behavior (introspective evidence), he thought that he had been stricken with sunstroke (p. 308). However, he soon rejected this diagnosis and arrived at the conclusion that he was in a "critical condition" (p. 308). Leonard inflated the severity of his condition, which intensified the repressive and controllability effects of his symptoms, and he convinced himself he was dying (Leonard, 1927, p. 308). He successfully tricked himself into this belief by intensively focusing on his extreme negative physiological sensations that often result from an intense level of stress (e.g., see Barlow, 2004; Bouton et al., 2001; Clark, 1986).

In another example, Kraines (1948) described the case of a woman who, with obsessive-compulsive thoughts, wished the death of her boyfriend and immediate family. The patient continued to experience some cognitive confusion because she could not specify the cause of
her symptom. She stated, "These thoughts make me hysterical. I love them; why should I wish such terrible things to happen. It drives me wild, makes me feel like I’m crazy..." (p.183; see also Carson et al., 1988, p. 192; italics added).

The deceptive self-diagnosis of illness is sufficient to preserve unawareness of self-involvement, enabling the symptoms to fulfill their repressive and controllability functions. Nevertheless, most patients build an additional barrier to preserve the state of unawareness by producing an explanation concerning the etiology of the deceptive self-diagnosis. Subjects formulate a plausible and socially acceptable explanation for their symptoms, to the extent that their cultural background or experiences enable them to do so. For example, Leonard utilized his broad knowledge of psychoanalysis to develop a self-deceptive explanation regarding the nature of his illness:

I was my own physician... I knew I was a 'case.' I knew my terrors were phobic ... I even knew they were somehow infantile in ultimate causes. A matter of infantile regression. The source of that conviction is psychologically noteworthy… I was ... already familiar with abnormal psychology-even as I have since read, first and last...the chief men in the field, their books and technical journals in half a dozen languages ... even to eight German volumes of Freud. (pp. 323-324).

Leonard developed a self-deceptive explanation that his panic attack was "a matter of infantile regression". In fact, Leonard was no different than patients than less-developed countries, who employ concepts from their culture, such as spiritual possession, to develop a self-deceptive explanation for preserving a state of unawareness when adopting bizarre behavioral deviations (e.g., see Csordas, 1987; Grisaru & Witztum, 1995; Kua et al., 1986; Ravenscroft, 1965; Seltzer, 1983; Varma et al., 1981; Wijesinghe et al., 1976).
Due to the increasing popularity of medical models (e.g., Reich, 1982; Telch, 1988), even among the general population, patients from western cultures may focus on a belief of an organic cause. For example, in a case study of obsessive neurosis reported by McAndrew (1989), a woman relating her extreme suffering from having aggressive thoughts towards her children raised the possibility that the etiology of her symptom might have been "premenstrual syndrome" (p. 316). She arrived at this conclusion after seeing a television program about a woman with premenstrual syndrome who had stabbed her children. In another case, O'Kearney (1993) described 24-year-old woman who, in her final year of medical school, suffered from obsessive ruminations of extremely aggressive thoughts. The patient reported that she had suffered intrusive thoughts at a younger age as well, and linked the latest onset of ruminations to minor illnesses such as "a short duration gastric upset" (p. 358).

Patients may also selectively focus on suitable information to strengthen their self-deceptive explanation. As noted by Peterson and Djikic (2003), "we are always pursuing the limited goals we construe as valuable, from our particular idiosyncratic perspectives. We pay attention to, and remember, those events we construe as relevant, with regards to those goals. We do not and cannot strive for comprehensive, 'objective' coverage" (p. 88). Accordingly, "the hysteric misinterprets evidence and selectively attends to only a certain part of the overall evidence" (Bass, 2001, p. 139). For example, conversion disorder patients utilize the high prevalence of organic illnesses and physical injuries present prior to their disorder (e.g., Blanchard & Hersen, 1976; Jones, 1980; Merskey & Buhrich, 1975) to strengthen the belief that their symptoms are caused by biological factors (see also Stone & Sharpe, 2006). As noted by Weinstein et al. (1969), these patients "stressed their injuries in the belief that they were etiologically significant" (p. 337; see also case studies by Brown et al., 2007; de Vignemont, 2009).
Likewise, panic patients are likely to utilize their adverse physiological sensations resulting from their stressful situations (e.g., see Barlow, 2004; Clark, 1986; Klein, 1993; Bouton et al., 2001) and their available physiological deficits (e.g., mitral valve prolapse and pulmonary diseases; see principle of availability, p. 115) to account for their seemingly uncontrollable panic attacks (e.g., Clark, 1986, 1988; Eifert, 1992; Ley, 1989; Margraf & Ehlers, 1991; McNally et al., 1995; Pauli et al., 1991). Furthermore, given that hyperventilation symptoms are voluntary responses (Ley, 1989), subjects can deliberately intensify their adverse physiological sensations experienced as a result of stress (Wolpe & Rowan, 1988) in order to facilitate both the display of panic and the development of the self-deceptive explanation of organic etiology (e.g., see a case study by Spitzer et al., 1983, pp. 7-10). Panic patients may be more knowledgeable about the symptoms related to myocardial infarction than those who actually suffer from the disease (Margraf & Ehlers, 1991). This allows them to mimic the disease, develop a suitable self-deceptive explanation for it, and validate it by concentrating on and reinforcing adverse physiological sensations.

An additional source of information that strengthens patient's self-deceptive explanation is therapy. Patients' participation in therapy and the selection of a specific intervention may be partly motivated by the need to develop a convincing self-deceptive explanation (e.g., see Csordas, 1987). Pattison and Wintrob (1981) noted in reference to spiritual possession, the "concordance of belief systems of subject and healer concerning the causes and appropriate treatment of illness is usually the primary determinant of choice of healer" (p. 17). To these ends, a therapist may endorse the patient's deceptive self-diagnosis, and provide a wealth of "scientific" information that can facilitate the development of a self-deceptive explanation.

As noted by Fisher and Greenberg (1977), research evidence consistently shows that
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A patient's belief interpretations and his consequent anxiety reduction do not depend on the accuracy of the interpretations. Investigators have found that individuals will enthusiastically accept bogus interpretations as accurate descriptions of their own personalities. (p. 364; see also Grünbaum, 1984, p. 135, 211, 265; Marmor, 1962, p. 289)

In this context, it is worth mentioning researchers' claim that DID may be produced in the therapist's office, where therapists "implicitly encourage" (Spanos et al., 1985, p. 364) patients to develop this disorder (see also Jaroff, 1993; Read & Lindsay, 1994; Rieber, 1999). In such cases, patients also internalize psychoanalytic beliefs that the symptom is the result of repressed childhood abuse, and may confabulate abusive memories (e.g., Acocella, 1999; Giesbrecht et al., 2008; Giesbrecht, Lynn, lilienfeld, & Merckelbach, 2010; Lilienfeld, et al., 1999; Merckelbach, Horselenberg, & Schmidt, 2002; Read & Lindsay, 1994; Spanos, 1994, 1996). Consequently, when patients decide to adopt the therapist's suggestion as a coping strategy, they are likely to focus on the implicit belief that the other personality is the result of a "repressed" childhood trauma, thereby hindering self-probing regarding the true causes of their symptoms. From this standpoint, while false memories can be implanted in patients' cognitive systems (e.g., Ceci & Loftus, 1994; Gutheil, 1993; Lindsay & Read, 1994; Loftus, 1993; Loftus & Hoffman, 1989; Mantell, 1988; Zaragoza & Lane, 1994), they may also be the result of patients' desire to deceive themselves and thus to preserve their state of unawareness.

Given PBT's assumption that self-deceptive belief serves an important psychological need, one would expect patients to refuse to change or abandon a therapy that strengthens this interest, even if they realize this intervention has been ineffective. Indeed, hypochondriacs are reluctant to accept referral to psychiatric services and request to be treated by physicians, even after medical intervention proves to be ineffective for their problems (see Salkoviskis & Warwick, 1986; Warwick & Salkoviskis, 1990; see also case study by Davison & Neale, 1986, pp. 148-
Similarly, patients may spend years in psychoanalytic therapy, despite the lack of therapeutic success (see Erwin, 1980; Gross, 1978). As noted by Leonard (1927), who spent several years in psychoanalytic therapy with no satisfactory results, despite "a thousand circumstances that would have robbed many men of faith...I have even now not lost all faith in the method, nor all faith that it may yet work out in this case. But the fact is that it has not" (p. 414; italics added).

**Self-Deceptive Belief of Denial**

The illness model, the common view of all traditional theories of psychopathology, would expect all mad patients to acknowledge that their behaviors are deviant and beyond their conscious control. However, four major groups of patients deny that their behaviors are deviant: 1) anorexics (e.g., see Melamed, Mester, Margolin, & Kalian, 2003; Vandereycken, 2006a, 2006b); 2) some OCD patients (e.g., compulsive cleaners, see Foa, 1979; Kozak & Foa, 1994; Rachman & Hodgson, 1980); 3) insane criminals (e.g., the Unabomber and Charles Cullen); 4) schizophrenic patients (e.g., Cella, Dymond, Cooper & Turnbull, 2012; Constable, Kemp & David, 1998; Gerretsen, Chakravarty, Mamo, Menon et al., 2013; Langdon & Ward, 2009; Lysaker, Salvatore, Popolo & Dimaggio, 2009; Voss, Moore, Hauser, Gallinat, Heinz, & Haggard, 2010).

Since these patients are unaware that their behaviors are deviant, it gives the impression that they are less rational than the illness group. However, these patients are as equally rational as the illness subjects and they deny their illness because of exposure to different extrospective and introspective evidence immediately after the creation of unawareness. Evidence supporting this assertion, in accordance with above four groups of denial, respectively, is reviewed below.
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1. Anorexia Nervosa: Unlike the illness group, anorexic patients observe a socially acceptable behavioral change of dieting immediately after creation of unawareness. Often, the symptom is an integral part of the individual's behavioral repertoire for which he or she was praised before its exaggeration to bizarre levels. While the social reinforcement is likely to continue even after the onset, it occurs at least during the initial stage. For example, Branch and Eurman (1980) found that at first, families and friends admire sufferers of anorexia for their appearance and self-control (see also Porzelius, Berel, & Howard, 1999). Since patients are unaware of the underlying causes of their behavioral change, they must interpret this extrospective evidence in positive terms. This experience is likely especially because patients simultaneously experience introspective evidence of emotional relief resulting from the repressive and controllability effects of the symptom. As noted by one anorexic patient "I enjoy having this disease and I want it" (Bruch, 1978, p. 2). Similarly, a father of an anorexic patient noted, "When she is not eating and her weight is falling, she appears in good spirits" (Bruch, 1973, p. 90). This denial is also strengthened by an internal experience of sense of control. Keeping weight and body size under control provides anorexics with a considerable sense of achievement and gives them a life goal, which replaces the emptiness and the helplessness (Bruch, 1978). Weight loss constitutes a source of self-worth and helps combat feelings of inadequacy (Garner, Vitousek, & Pike, 1997; Vitousek & Hollon, 1990). Edelstein (1989) similarly noted that anorexia satisfies patients' compulsive need to master their vital drive of hunger (see also Huebner, 1993).

Since denial is a rational conclusion that fits the extrospective and introspective evidence to which they are subjected, patients must invent self-deceptive explanations to justify their abrupt behavioral change. Accordingly, as noted by Garner (1986) "the apparently bizarre eating patterns and the resolute refusal of adequate nourishment become plausible given the
anorexic patient's conviction that thinness is essential for her happiness or well-being" (p. 302).

Anorexics must also overestimate their body size or fatness (Benninghoven, Raykowski, Solzbacher, Kunzendorf et al., 2007; Skrzypek, Wehmeier & Remschmidt, 2001; Waldman, Loomes, Mountford, & Tchanturia, 2013), to preserve "a non-pathological image of their body by negating their severe underweight" (Benninghoven, et al., p. 56).

However, anorexics abandon this belief in favor of a self-deceptive belief of illness when their bodily conditions seriously deteriorate. Indeed, as reported by Greenfeld, Anyan, Hobart, Quinlan, and Plantes (1991), the tendency to adopt a belief of illness is greater among patients with the greatest weight loss, and longest in-patient stays. Moreover, when anorexic behavior is accompanied by bulimic symptoms, there is a greater tendency to choose the strategy of illness, rather than denial (see Pryor et al., 1995). This seems to be because binge eating is socially unacceptable and is associated with the sense of loss of control (DSM-IV-TR, American Psychiatric Association, 2000). This theoretical perspective, which views anorexics' denial of illness as rational behavior with intact cognitive functioning, is consistent with research showing that these patients display no impairment of estimation of other women's bodies (Benninghoven, et al., 2007). As noted by Skrzypek, et al. (2001) in a review article on anorexics' body image, "the findings suggest that body image disturbance is not due to any perceptual deficit, but is based on cognitive-evaluative dissatisfaction" (p. 215; see also Waldman et al., 2013).

2. **OCD**: Similar to anorexia, often OCD patients are faced with extrospective (e.g., excessive cleaning or praying) and introspective evidence (emotional relief resulting from socially accepted behaviors) that necessitates the development of the self-deceptive belief of denial. Sherman (1938) described a fourteen-year old boy who developed compulsive excessive washing, using the strategy of undoing to counteract the guilt from his masturbation. He washed his
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hands several times a day and frequently stayed two or three hours in the bathtub. On a number of occasions, he daubed iodine on his hands and face, telling his parents that he had scratched himself and wanted to prevent infection. The patient also used boric acid solution to wash his eyes every evening. When asked to explain his excessive cleanliness "he stated that he realized that he washed more than other boys, but that in his case there were real reasons. He believed that his skin was of such a texture that it retained dirt and germs, and he therefore was forced to wash and scrub himself" (p. 226. See also a case study by Rachman & Hodgson, 1980, p. 19). In some cases, patients employ excessive praying which, like cleaning, they rationalize as a preventative measurement against potential danger (e.g. accidents or terror activities; see, Rofé, 2010) or view as part of a religious ceremony (Rachman & Hodgson, 1980, p.19). An additional introspective experience that leads OCD patients to develop denial is controllability, since denial reduces their fear of losing control over their unacceptable impulses (e.g., Denys, De Geus, Van Megen, & Westenberg, 2004; Horowitz, 2004, pp. 169-186; McAndrew, 1989). For example, in the previously mentioned case study by Neal at el., (1982), Karen chose her OCD symptoms mainly because she feared she would lose control over her unacceptable, aggressive impulse towards her children. "Instead of injuring the children, she spent a good deal of time every day performing irrational responses aimed at protecting them" (p. 12). Although the OCD symptoms may seem senseless to the patient, he or she is likely to invent an excuse to rationalize the behavior. For example, when a patient like Karen, who performed compulsive counting rituals to protect her parents from injury, was pressed, "She agreed that her rituals did not afford them direct protection but felt that the rituals were helpful in the same way prayers are. She concluded that her rituals were irrational only to the extent that prayers are irrational" (Rachman & Hodgson, 1980, p. 19).
3. Insane Criminal Behaviors: Similar to anorexic and OCD patients, criminal insane individuals base their denial of illness, immediately after the creation of unawareness, on two pieces of evidence: *extrospective observation* of their radical behavioral change which is perceived by them as socially accepted behavior due to their subjective interpretation, and *introspective experience* of emotional relief resulting from the repressive and controllability values of the behavioral change. For example, the *Unabomber* perceived his criminal acts as a social mission (extrospective observation), due to his delusional belief employed by him to rationalize his anti-social behavior. He also derived significant emotional relief from his criminal acts (introspective observation) which resulted from the repressive function of the symptom and the enhancement of his self-esteem. Furthermore, like anorexics and compulsive cleaners who are initially rewarded for their deviant behaviors, the Unabomber enjoyed the celebrity status and thrived on the attention he received in the media, typical amongst serial killers (Haggerty, 2009). Thus, similar to anorexic and some OCD patients, the Unabomber was aware that he consciously committed his deviant behaviors, but was unaware of the underlying motives due to the aforementioned factors that according to PBT are involved in the creation of unawareness of the KSI/TR.

Similarly, when *Charles Cullen* committed his first killing, he simultaneously focused on a belief that he was helping people by ending their suffering. It is also likely that initially he killed terminally ill patients, and consequently he was faced with an *extrospective observation* of doing a good thing. This evidence together with his *introspective observation* of emotional relief caused him to deny that his behavior was abnormal. However, just like anorexics that transformed their self-denial into a self-deceptive belief of illness when faced with incompatible evidence, Cullen abandoned the denial strategy when confronted with the fact that he also killed people who were not terminally ill. He then noted that he felt overwhelmed.
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at the time and said "it felt like I needed to do something and I did. And that's not an answer to anything". In other words, he used a self-deceptive belief of illness but remained unaware of the underlying cause of his behavior—he consciously chose his criminal behaviors as a coping mechanism.

The same analysis can be applied to account for the aforementioned case of Mordechai Vanunu, the Israeli atom spy (Toscano, 1991). Vanunu is an interesting case because his self-deceptive belief of denial was based not only on his own extrospective and introspective observations but also on massive deceptive information derived from the sympathy of notable people, including Nobel Laureates and an American astronomer, Carl Sagan (Toscano, 1995, p. 291; see also Sapiro, 1990). Thus, Vanunu was to some extent fortunate, compared to the Unabomber and Charles Cullen, because although he was sentenced to 18 years in prison, the mad behavior he chose enabled him to preserve a high self-esteem and to become a respected international hero. He has been nominated for the Nobel Peace Prize every year since 1987, received the Right Liverpool Award in 1987 and was given an honorary doctorate by the University of Tromsø, Norway, in 2001. Thus, sometimes-insane criminal behavior can be highly worthwhile if one chooses a crime that may gain the respect of a significant section of the society.

4. Schizophrenia: Non-criminal schizophrenics base their denial of illness on two introspective observations. One piece of evidence is the delusion or imaginary visions or voices (i.e., hallucination), which are perceived as a real phenomenon following the creation of the unawareness. The second experience is the significant emotional relief obtained by the repressive and controllability effects of these symptoms. As a result, patients must rationally develop self-deceptive denial. For example, as noted above, Percy King, who suffered from
paranoid schizophrenia, believed pursuers with some "astounding, unheard of, utterly unbelievable occult powers" controlled him (White, 1964). King's delusion and hallucinations can be seen as a rational coping mechanism that became salient in his attention through intuitive processes in response to guilty feelings over his sexual impulses and deep sense of incompetency. While initially he had been aware, for a brief period, that these experiences are unreal, they were perceived as real phenomena immediately after the creation of unawareness of KSI/TR. The second type of introspective observation that encouraged King to validate his self-deceptive belief regarding the reality of the pursuers is the significant emotional relief he felt following the repressive and controllability effects of this imaginary enemy. Once King became unaware of the KSI/TR, he utilized his experiences, such as sexual sensations and imaginative voices, as well as his hospitalization, as "proofs" to further validate his self-deceptive belief of denial. Freeman et al., (2002) noted, with regard to schizophrenia, that there are a number of ways by which confirmatory evidence of beliefs is obtained.

Individuals will look for evidence consistent with their belief...; attentional biases will come on-line, as is found in emotional disorders: threat will be preferentially processed...; threatening interpretations of ambiguous events will be made; and such biases are likely to be enhanced by a self-focused cognitive style....Memory biases, which may be associated with emotional disorders (e.g. intrusive trauma memories), will lead to frequent presentations in mind of the individual of the evidence for delusion (p. 338).

PBT's assertion that the schizophrenic's denial is a rational coping mechanism is consistent with studies showing that awareness to the positive symptoms (i.e., hallucinations and delusions) leads to depression, low self-esteem, hopelessness, and suicidal behavior (e.g., Acosta, Aquilar, Ceias & Gracia, 2013; Balhara & Verma, 2012; Crumlish, Whitty, Kamali, Clarke, Browne et al., 2005; Ekinici, Gorkem, Albayrak, Arslan et al., 2012; Lysaker et al.,
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2007; Melle & Barrett, 2012; Yu-Chen & Yia-Ping, 2011). For example, from the standpoint of medical models, the Unabomber's denial of his "illness" and his refusal to accept his lawyers' advice, even when he knew that may result in death penalty, is irrational behavior that stems from brain damage (Amador & Paul-Odoard, 2000). In contrast, according to PBT the Unabomber's behavior was quite rational and understandable. As noted before, he resigned from the university as he experienced a deep sense of incompetence and he intuitively took the decision to develop his schizophrenic delusion as this boosted his self-esteem, made him a television star, and thus relieved his unbearable level of depression. A confession that his belief regarding his mission to repair the corrupted industrial society be seen as a sign of mental illness, as requested by his lawyers, would retrieve and intensify his original stressor of incompetence. This would deepen his frustrating sense of worthlessness, as he would have to conclude from this that he completely ruined his life, which would cause him to suffer from such extreme levels of depression that it would leave him with no better choice than to commit suicide. While medication may reduce the need for the psychotic symptoms, they do not block the accessibility of stress-related thoughts. Therefore, Nash's refusal to take medication (Weiden, 2002) that would stop his sophisticated delusions and hallucinations is quite understandable.

III. Stabilization of Unawareness

The creation of unawareness, namely forgetting KSI/TR, and the preservation of this cognitive state, obtained through self-deceptive belief, relate only to the initial presentation of the symptom. However, often this behavior is manifested not only once but many times, such as the serial killings by the Unabomber and Charmless Cullen or panic disorder patients that may
experience hundreds of panic attacks (see Seligman, 1988). Since the conscious is the sole cognitive system responsible for the reactivation of the symptom, it is necessary to clarify: a) which situations cause patients to consciously re-activate their symptoms? b) How do patients succeed in remaining unaware of KSI/TR, despite repeated displays of this behavior?

**Symptom Reactivation Situations**

1) **Stress** – One situation that causes patients to reactivate their symptom is stress. This reaction enhances both their ability to repress stress-related thoughts and to exercise control over the stressor. For example, Blanchard and Hersen (1976) described a case of a 14-year-old girl who developed aphonic hysteria following a quarrel with her mother from which she spontaneously recovered in several weeks. However, when she subsequently quarreled with one of her sisters and was severely scolded by her mother, her voice was reduced to a whisper. A full relapse occurred when the mother sharply questioned the patient about her sexual relationships with her cousin. In another case, the reactivation of the subject's conversion symptom coincided with a variety of environmental stressors. "Among these were his role as 'housewife,' difficulties with his 18 year-old son, being discharged from the National Guard after 20 years of service, and his strong opposition to his youngest daughter's marital plans" (Blanchard & Hersen, 1976, p. 124). Similarly, Benzick (2001) mentions a case of a 17-year-old female who suffered from pseudo-seizures, and whose symptom was worsened in the presence of the stressor (her father). Likewise, Nandi, et al. (1985) reported that a patient with hysterical seizures usually displayed her symptom when being beaten by her husband.

In another case study, Wijesinghe et al. (1976) described a 35 year-old woman who developed her first episode of spiritual possession at the age of 23, when her husband’s
drinking became a serious problem. The symptom was displayed when the drunken husband assaulted the patient and her children.

These attacks recurred during the next 10 years - first being precipitated by quarrels with the husband, and later also by culture-bound stimuli. The husband’s drinking has become less of a problem to the family in the past 3 years as he has had to reside at the worksite and can only visit the family during weekends. Apparently in consequence of this, her attacks have become less frequent and in the past 2 years she has had none - although she believes she is still susceptible to possession. (p. 137)

Mathews et al. (1981) noted, with respect to agoraphobia, that, "it has often been suggested that both onset and fluctuations are related to changes in interpersonal relationships or to environmental stress" (p. 39). Similarly, as claimed by Marks (1987a)

Agoraphobia that has been stable for some time can be exacerbated suddenly by as many factors as those which might have precipitated the original episode. Remission, too, may coincide with similar sudden life events... Any stressful situation might intensify agoraphobia. Depression often aggravates agoraphobia to the point of major disability; after the depression clears the handicap reverts to its previous lower level. (p. 338)

In the same manner, clinical data suggests that the intensity of obsessional rumination tends to fluctuate in accordance with the patient’s level of depression (e.g., see case study by Rachman & Hodgson, 1980, p. 257).

Another example concerns dissociative identity disorder. As noted by Bliss (1984), "the 'spontaneous' transformation of the alert patient into another personality usually occurs when the patient encounters a stress with which he or she cannot cope" (p. 137; see case study by
Spitzer et al., 1983, pp. 37-41). Similarly, La via and Brewerton (1996), noted, "Switching often occurs in response to environmental stress and/or internal psychological triggers, usually evoking traumatic memories" (p. 232).

No evidence is available with regard to psychotic disorders but it seems likely that the same rule exists also in these cases. Thus, apparently, Percy King, who as specified earlier suffered from delusional disorder and associated his unacceptable impulses to an invisible group of pursuers, reactivated his delusion whenever he experienced sexual arousal, homosexual fantasies or masturbation. He probably focused on his delusion whenever he experienced an elevation in the level of depression. Similarly, it seems probable that the repeated criminal acts of the Unabomber and other serial killers, such as Charles Cullen, coincided with stress or an increase in their level of depression.

Likewise, it seems likely that re-manifestation of Nash's symptoms coincided with the re-penetration of the stress-related thoughts, and hence the elevation of depression. For example, after his release from the Carrier Hospital in summer of 1963, Nash behaved normally for some time. However, he was still depressed (Nasar, 1998, p. 308). He complained in the fall of "feeling lonely", especially because Alicia resisted any idea of resuming their marriage (Nasar, 1998, p. 309). Thus, "as early as February, Nash began complaining of sleeplessness and of his mind [being] filled with thoughts of performing imaginary computations of a meaningless sort" (Nasar, 1998, p. 310).

2) Belief-challenging conditions – The second situation that causes the reactivation of the symptoms is belief-challenging conditions. Since the self-deceptive belief is crucial for preserving unawareness of KSI/TR, it is expected that challenging this belief will cause reactivation of the symptom. Failure to do so may invalidate the belief, and therefore threaten
the patient’s ability to maintain the symptom. In an experimental study by Levy and Jankovic (1983), a hysterical patient displayed a variety of dramatic pseudo neurological symptoms when given a placebo she believed should intensify her symptoms. The patient was obliged to consciously display her symptom because failing to do so would sabotage her self-deceptive belief and, consequently, the maintenance of her pathological coping mechanism.

In another experimental study (Grosz & Zimmerman, 1965; Zimmerman & Grosz, 1966), a patient suffering from hysterical blindness identified the presence or absence of visual stimuli below the chance level. The experimenter manipulated the patient’s behavior through a collaborator by telling him that the doctor thought he could see and that a truly blind person identifies a higher number of correct responses than chance-level performance. As one would expect, in a subsequent visual test, the subject’s correct responses increased to chance level. Here too, when the self-deceptive belief was threatened, the patient adjusted his symptomatic behavior accordingly.

A further example of belief-challenging conditions is when a phobic patient is confronted with the object of fear in a therapeutic setting (e.g., chocolate, see Rachman & Seligman, 1976) or when a compulsive hand washer touches a contaminated object in an experimental setting (Rachman & Hodgson, 1980, p 173). The patient must display fear, or invent a self-deceptive excuse for not doing so, or else it will invalidate the belief and necessitate the abandonment of the symptom.

Similarly, since panic disorder patients deceive themselves and believe they suffer from heart or pulmonary disease (Clark, 1986; Margraf & Ehlers, 1991; McNally et al., 1995), they must display their symptoms when this belief is experimentally challenged. This includes situations that increase their bodily sensations through a variety of chemical substances (e.g., adrenaline, sodium lactate and caffeine) or by employment of procedures that affect
respiration (e.g., strenuous exercise, experimental hyperventilation, and CO₂ inhalation) (see Abrams, Schruers, Cosci, & Sawtell, 2008; Barlow, 2004; Nutt & Lawson, 1992; Rapee, 1995). A threat to their deceptive belief, and therefore arousal of panic attack, can also occur by decrease in heart or respiratory rate, due to relaxation procedures (e.g., Barlow, 1988, pp. 148-151).

Likewise, when agoraphobic patients are accidentally exposed to situations that challenge their self-deceptive belief they must display an intense anxiety and make every effort to escape from the situation. For example, as noted by an agoraphobic patient,

Finding myself in the midst of a large gathering would inspire a feeling of terror (which )... could be relieved in but one way - by getting away from the spot as soon as possible... [In another case,] I remember once going from Chicago to Omaha with my little boy. On entering the sleeper I found it crowded. I at once became ill-at-ease. As the train moved on I became more and more desperate, and finally... procure (d) a section by myself... (in) a stateroom ..., paying $10 extra for it. Had it been $100 and I had the money, I should have bought it without once counting the cost (Marks, 1987a, pp. 325-326).

In some cases, patients deliberately expose themselves to belief-challenging situations in order to obtain self-deceptive proofs to validate their belief. For example, in the morning following his initial panic attack, when he came to the deceptive diagnosis that he was in critical condition and going to die, Leonard (1927) started a little walk down the street. "Within a hundred feet of the house I am compelled to rush back, in horror of being so far away...a hundred feet away...from home and security" (p. 308). Thus, Leonard did not stay at home, as one would expect from a critically ill patient, but instead intentionally ventured outside so he could revalidate his belief of illness. Subsequently, he held a firm conviction
that his situation was indeed critical and avoided resuming his work at the university for a substantial period. However, as stated previously, when discussing the concept of controllability, Leonard adapted his symptoms and displayed a healthier state when the university threatened to dismiss him.

Intentional exposure can occur at a more advanced stage of the disorder as well, when the patient may utilize these "experiments" to neutralize self or social pressures to act normally. Patients may present a seemingly genuine attempt to face his or her fear, and then to use the "failures" to revalidate their beliefs. In one such example, a patient noted that:

Times more than I can recall I have gone into restaurants or dining rooms, ordered a meal and left it untouched, impelled by my desire to escape the crowd ... (or) have bought tickets to theaters, concerts, fairs or what not, merely to give them away when the critical moment arrived… (Marks, 1987a, p. 326).

3) Jumping to Conclusions: Given PBT's claim that grandiose and persecutory delusions are aimed to enhance or preserve the patients' self-esteem and that the individual's rational processes remain intact, it can be assumed that they will hastily utilize available evidence which is seemingly consistent with the delusion to validate their deceptive-belief. For example, when Nash suspected that Cohen, a Ph.D. student, was rifling through his trash, he jumped to the conclusion that Cohen was trying to steal his mathematical ideas (Nasar, 1998, p. 243). This phenomenon, where schizophrenics hastily arrive at conclusions with little
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evidence, was confirmed by a vast amount of studies, named in the literature as "jumping to
conclusion" (JTC) (Dudley & Over, 1997; Freeman & Freeman, 2008).

In typical experimental studies, participants are shown two jars of beads, usually in a
proportion of 85 red beads and 15 blue beads in 1 jar, and the opposite ratio in the other. Beads
are then drawn from one jar that is now hidden from view, and the participant has to decide
which of the two jars the beads come from. Studies show that delusional patients tend to decide
after fewer draws than people without delusions, and they make more errors with emotionally
salient materials. However, the two groups did not differ when asked to view the same amount
of beads, which indicates, "people with delusions have a data-gathering bias rather than a
difficulty in employing the data in reasoning" Dudley et al., 1997, p. 243). Similarly, Dudley
and Over (2003) noted, "people with delusions, who are meant to be irrational, were able to
solve most standard reasoning tasks as well as comparison subjects" (p. 269).

While different explanations were given to the phenomenon of JTC (e.g., Duley & Over,
2003; Garety, Joyce, Jolley, Emsley et al., 2013), PBT suggests that JTC is a rational cognitive
strategy that patients employ to strengthen and re-validate their delusions, thereby their
unawareness of KSI/TR. This explanation is consistent with Dudley and Over’s (2003) claim
that "the belief that there is some great conspiracy against oneself, and interpreting much of
what happens to oneself in terms of this belief, can be consistent and coherent as any other
view of the world that people have" (p. 269). Thus, if someone is laughing, patients can jump
to the conclusion that he is part of the plot against them. In this regard, Dudley and Over noted
that

People with delusions who asserted this conditional would have little
interest in finding some falsifying instances of it, i.e. cases of someone
laughing at a joke or for some other innocent reason. They would be
convinced that there was a plot against them and be out to find cases
where someone was laughing at them because of the plot, thereby confirming the conditional and the existence of the plot itself (p. 271).

Since paranoid patients "become in fact a target of actual discrimination and mistreatment. Even alert to injustices, both imagined and real, such an individual easily finds 'proofs' of persecution" (Colman et al., 1984, p. 393). "The person may act upon their delusion in a way that elicits hostility or isolation...In essence, others may act differently around the person, or break contact with them, thus confirming persecutory ideas" (Freeman et al., 2002, p. 338). Such situations trigger the re-manifestation of the paranoids' delusions as they provide the opportunity to re-validate their self-deception beliefs. Personal weaknesses and imagined threats may serve the same aims (Dudley & Over, 2003). For example, Percy King's weaknesses, including his long hospitalization, masturbation and homosexual desires, triggered the display of persecutory beliefs, which provided him with repeated self-deceptive proofs that he was a victim of supernatural forces. Accordingly, since these cognitive manipulations are aimed to validate the delusional belief, it can be expected, as confirmed by recent findings, that the reduction of delusions will cause the reduction of JTC (Dudley, Daley, Nicholson, Shaftoe et al., 2013; Woodward, Munz, LeClerc, & Lecomte, 2009).

While usually, JTC is a cognitive strategy where patients utilize ambiguous information to validate their delusions and unawareness of KSI/TR, in some cases JTC can help patients create a delusion symbolically serving their repressive and controllability demands. For example, when Nash accidentally encountered the picture of Pope John the Twenty-third on the cover of Life magazine, he concluded that his photograph had been disguised to make it look as if it were Pope John the Twenty-third. Although his reasoning appears extremely irrational, careful analysis indicates, as specified earlier, that each piece of this delusion have important psychological significance (see pp. 115-116).
8) **Demand Characteristics:** The fourth situation that may cause patients to redisplay their symptoms is demand characteristics—how an individual with the specific symptom is expected to behave. Accordingly, patients suffering from psychogenic movement must routinely display their symptom at a certain frequency and must activate it soon after waking from sleep. Failure to do so would challenge their self-deceptive belief of illness, and may result in others either thinking they are faking their symptoms or it not being serious. The same claim is true for hysterical paralysis and hysterical blindness where they must regularly behave like people suffering from true paralysis or blindness. Hence, the hysterically paralyzed patient must consistently display his handicap whenever the effected limb is in use, such as washing or going to the bathroom. Another example is when OCD patients, for some reasons, do not present their symptoms as expected. For example, in one case study, Dollard and Miller (1950) noted, "occasionally Mrs. A would forget to count and her intense anxiety would recur" (p. 21). Similarly, Karen, in the aforementioned case study by Neal et al (1982), experienced considerable feelings of anxiety on occasions where she was in too great a hurry to observe her compulsive rituals.

**The Deceptive Cycle**

Even after the generation and preservation stages of unawareness, the conscious continues to be involved in the displaying, modification or inhibition of the symptom. This may account for the fact that conversion patients fail to display their symptoms when their attention is diverted (e.g., Cassady et al., 2005; Kihlstrom, 1994, p. 382; Merskey, 1995; Spence, 1999). Additionally, although the reactivation of the symptom becomes automatic, conversion patients can regulate the presentation of the symptom in order to reduce potential harm (e.g., see Leary, 2003; Mischel &
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Mischel, 1958; Nicol, 1969), and can even stop their behavior when the cost exceeds the benefit (see Blanchard & Hersen, 1976; Goldblatt & Munitz, 1976). Similarly, Mischel and Mischel (1958) noted with regard to spirit possession

Even in the most extreme examples observed, the individual seemed to retain sufficient consciousness and control to permit him to behave without injury to self or others; that is without stumbling over objects or mishandling implements (p. 253).

In the same way, Leonard (1927) could adjust his agoraphobic symptoms to demands of reality when the University of Wisconsin threatened to fire him if he would not return to work, so that he was now able to resume his teaching obligations. Likewise, he traveled twice to Chicago and once to New York when he expected to meet his fiancé, yet he still emphasized that the train was like an “electric chair” for him (p. 347) in an attempt to maintain his self-deceptive belief of illness.

Another example is the previously reviewed evidence that OCD patients inhibit their symptoms in situations where their exhibition may be socially embarrassing or threatening to their work (see Clarizio, 1991; Ranchman & Hodgson, 1980, pp. 60-61, 120, and 177, 180-181). Similarly, Varma et al. (1981) reported a case study of a multiple personality patient who avoided switching to another personality, as it "occurred at her home only, and never during even prolonged visits with relatives" (pp. 114-115). In the same manner, although kleptomaniacs are unable to resist their bizarre impulse to steal, they will generally avoid stealing when immediate arrest is probable (DSM-IV, American Psychiatric Association, 1994). Likewise, the phenomenon of spontaneous recovery, where agoraphobic symptom suddenly disappears (e.g., see Jung, 1963, p. 120; Rachman & Wilson, 1980; and case study by Wolpe, 1982, pp. 286-287), reflects the involvement of the conscious in inhibition of the symptom. Similarly, Nash was able to consciously suspend his psychotic symptoms and present
normal behavior when he was determinate to be released from McLean mental hospital (see Nasar, 1998, p. 261). It is also unlikely that the conscious was not involved in the decision-making process during each of the Unabomber and Charles Cullen serial killings.

Despite the continued involvement of the conscious in controlling the symptoms, the fact remains that patients appear sincerely unaware. How then do these individuals succeed in preserving a state of unawareness while still managing to manipulate behaviors according to their psychological needs?

Figure 1 describes the self-deceptive cycle where patients consciously re-activate the symptom in response to the aforementioned four situations and repeatedly cause themselves to be unaware of KSI/TR. Essentially, the same psychological processes involved in the creation and preservation of unawareness at the initial adoption of the symptom, are repeated in each new exhibition of this behavior. At this stage, however, unawareness of KSI/TR occurs at a much faster rate due to two factors, which were absent in the initial adoption of this behavior. One is the automatic reactivation, which gradually becomes like a conditioned reflex. This automatic response is the consequence of both practice (i.e., repeated display of the symptom) and emotional relief (i.e., reinforcement) caused by the distractive and controllability effects of this behavior. For example, the automatic display of the conversion symptom reduces the amount of attention allocated to both the decision to reactivate this behavior as well as to its actual performance, and consequently the awareness of KSI/TR. This explanation is consistent with Lynn et al. (2008) claim' who noted with regard to hypnosis that

Once an intention to respond a suggestion is formed, it no longer requires much conscious control. Instead, the response is triggered as an automatic or quasi-automatic operation that intervenes in initiating, correcting, interrupting, inserting, continuing and terminating action (p. 126).
This effect is also shown in the unconscious performance of motor skills, which is attributed to the reduced amount of attention allocated to the execution of these behaviors due to practice (e.g., Kihlstrom, 1987; Lewin, 1982; Moore & Stevenson, 1991; Morris, 1981).

The second factor that disrupts the encoding of KSI/TR is self-deceptive belief. Once established, the belief becomes a powerful distractive tool that hinders the encoding of KSI/TR similar to the symptom. The self-deceptive cycle by which patients become unaware of their conscious involvement at each new presentation of the same symptom is presented below.

**INSERT FIGURE 1 ABOUT HERE**

No.1 in Figure 1 refers to four situations that stimulate the conscious re-activation of the symptoms: stress, belief-challenging conditions, JTC and demand characteristics. No. 2 relates to the automatic reactivation of the symptoms where the patient modifies or inhibits the display of rapid assessment indicates potential damage. Nos. 3 & 4 represent the automatic release of the symptom and patients’ minimal awareness of KSI/TR, respectively. Nos. 5 & 6 represent the self-deceptive belief and the symptom, which constitute the two barriers that block the accessibility of KSI/TR through their powerful, distractive effects. Hence, like hypnosis where the individual becomes unaware of the intentional production of their hypnotic state by focusing on the hypnotic suggestion and their behavioral change (e.g., see Lynn et al., 2008), the intense preoccupation with the symptom and self-deceptive belief enables patients to direct their attention away from KSI/TR.

Two additional memory-inhibiting factors are intentional forgetting and state-dependent memory caused by substantial emotional and cognitive changes. Once unawareness is created following the aforementioned factors, when patients are faced with the same psychological state
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to which they were exposed immediately after the initial display of the symptom. Those with self-deceptive belief of illness are faced with the extrospective observation of maladaptive behavior and introspective experience of loss of control (Nos. 7 & 8, respectively). As a result, they will have additional deceptive proofs to revalidate their misleading self-diagnosis and explanation at each new presentation of the symptom. A similar process is performed by patients in the denial group based on their observations of socially encouraged behavior, which in psychoses results from misinterpretation of reality, and the evidence of emotional relief (Nos. 9 & 10). Thus, while one would expect that repeated presentation of the symptom would increase awareness of KSI/TR, in fact given the aforementioned self-deceptive processes, each new presentation of these behaviors reinforces the patients’ unawareness of this information.

**Theoretical Implications:**

**Conversion Disorder and Dissociative-Identity Disorder**

PBT’s model of unawareness can resolve a number of fundamental theoretical disputes concerning: 1) The mechanisms causing some neurological changes in conversion disorder and diagnostic criteria distinguishing this disorder from malingering; 2) The controversy regarding the etiology of DID (dissociative identity disorder).

**Conversion Disorder**

A significant number of studies show abnormal cerebral functioning in patients with conversion disorder (e.g., Fink, Halligan, & Marshall, 2006; Rotge, Lambrecq, Marchal, Pedespan, et al.,
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2009), such as an increased activity in the anterior cingulate cortex and associated regions in patients suffering from hysterical paralysis in their attempts, imaginary or real, to move the affected limb (e.g., de Lange, Roelofs, & Toni, 2007; Marshall, Halligan, Fink, Wade, et al., 1997). Similar patterns of neurological changes were observed among people who were induced to have conversion symptoms via hypnotic suggestions (e.g., Deeley, Oakley, Toone, Bell, et al., 2013; Halligan & Oakley, 2013). The poor scientific status of psychoanalysis, especially the vast amount of research refuting the existence of repression (e.g., Piper et al., 2008; Rofé, 2008), and the inability of other psychological theories to explain this data, led researchers to claim that conversion disorder should be seen as neurological rather than psychological disorder (e.g., Stone, Lafrance, Brown, Spiegel, et al., 2011).

However, medical models focus solely on this neurological data, which is seemingly unexplainable by psychological concepts. They altogether neglect to address many other data, which are unexplainable by medical terms, such as the variability of conversion symptoms and the mechanisms by which psychological interventions exert their therapeutic effects (see Rofé & Rofé, 2013). Moreover, while they use this neurological evidence to demonstrate the weaknesses of psychological theories, such as psychoanalysis, they themselves provide no satisfactory explanation for these findings.

As discussed in Part I of this book, although Freud's concept of repression does not allow us to preserve the name conversion, which was originally coined by Freud, PBT's new concept of repression enables us to reject new names for this disorder, such as "functional neurological disorder" (see Rofé & Rofé, 2013). Furthermore, PBT seems to be the only theory that can address the above-mentioned neurological data, which as stated can also be produced by hypnotic procedures. As elaborated by Rofé and Rofé, (2013), these findings are the result of two contradictory conscious messages. The first message is the conscious decision to move the affected limb when instructed to do so (Nos. 3 & 4 in Figure 1), which stimulates the brain area
responsible for the movement. The second message is the simultaneous employment of the self-
deceptive belief, or hypnotic suggestions, to inform the brain of an inability to move the limb. This explanation may account for Van Beilen et al.'s (2010) statement "I want to move my arm, but I cannot" (p. 156).

PBT's model of unawareness can also resolve the difficulty to distinguish between conversion disorder and a malingering or factitious disorder. DSM-IV-TR's (American Psychiatric Association, 2000) diagnostic proposal for solving this problem is through its requirement for the diagnosis of the conversion disorder that the "symptom is not intentionally produced or feigned" (p. 492). However, this suggestion was sharply criticized by many researchers (e.g., Kanaan, Carson, Wessely, Nicholson, et al., 2010; Krahn, Bostwick, & Stonnington, 2008; Miller, 1999; Stone, Lafrance, Levenson, & Sharpe, 2010). For example, Delis and Wetter (2007) noted, "many clinicians are reluctant to use diagnoses such as Malingering, Factitious Disorder, and Conversion Disorder at least in part because of difficulty in objectively assessing the presence or absence of intentionality in the generation of the excessive symptom" (p. 593). Indeed, the DSM-5 (American Psychiatric Association, 2013) abandoned the aforementioned requirement as now it states, "the diagnosis of conversion disorder does not require the judgment that the symptoms are not intentionally produced (i.e., not feigned)…" (p. 320). However, this resolution provides no diagnostic criteria for distinguishing between conversion disorders and malingering or factitious disorder. Instead, PBT suggests that conversion disorder will be defined as a behavior meeting all five diagnostic criteria of madness, which includes unawareness of the underlying causes for the dramatic change in behavior. Malingering or factitious disorder are behaviors that do not fulfil these criteria, especially the criterion of unawareness. An additional criterion that helps distinguish between malingering and fictitious disorder is stress. Although in both cases individuals
fake the symptoms, the prime motive of the fictitious disorder is stress, while the prime motive of malingering is social rewards.

**Dissociative-Identity Disorder**

The underlying mechanism of DID is still an open question. In this regard, there is a profound controversy between the *trauma model* (see Bremner, 2008; Dalenberg et al., 2012; Gleaves, 1996) and *socio-cognitive explanation* (see reviews by Boysen & VanBergen, 2014; Giesbrecht et al., 2008, 2010; Lilienfeld, Kirsch, Sarbin, Lynn, Chaves, et al., 1999) of DID. The trauma model views DID as a defense mechanism developed in response to sexual or physical abuse. In contrast, the socio-cognitive model claim that DID is a role enactment that is created, legitimized and maintained by social reinforcements. "Patients with DID synthesize these role enactments by drawing on a wide variety of sources of information, including the print and broadcast media, cues provided by therapists, personal experiences, and observations of individuals who have enacted multiple identities" (Lilienfeld et al., 1996, pp. 507-508).

One factor that seems relevant in resolving this dispute concerns the mechanism producing and manipulating the altered personalities. It is unlikely that these behaviors are controlled by a biological mechanism, particularly in light of the fact that patients can manifest their personalities at any time upon request (e.g., Allen & Movius, 2000; Hopper, Ciorciari, Johnson, Spensley, et al., 2002; Savoy, Frederick, Keuroghlian, & Wolk, 2012). The socio-cognitive model provides no explanation regarding the mechanism that controlled DID. Advocates only declined the possibility that these behaviors are mediated by the conscious, without providing alternative suggestion. For example, Lilienfeld et al., (1999) noted

> The metaphor or concept of role does not imply that role-related behaviors are the product of conscious deception. Instead, role enactments tend to
flow spontaneously and are carried out with little or no conscious awareness and with a high degree of "organismic involvement" (p. 508).

On the other side of the barricade, while in the past psychoanalysts used the concepts of repression and the unconscious to explain this disorder (e.g., see Kluft, 1995; Waiess, 2006), in recent years proponents avoid these terms apparently because of the increasing number of studies questioning the validity of these concepts. Instead, the trauma model claims that the dissociative individual attempts "to avoid recall of trauma by conscious and unconscious disavowal of the importance, implications, and/or accuracy or reality of the memory" (Dalenberg et al., 2012, p. 553). Thus, both models make no clear statement with regard to the mechanism that controls and manipulates DID.

PBT resolves this controversy by synthesizing ideas of both theories into one paradigm. On the one hand, it accepts the socio-cognitive claim that DID is a role enactment. It also agrees with this approach that these behaviors flow spontaneously and that they "are carried out with little or no conscious awareness" (Lilienfeld et al., 1999, p. 508). Both these suggestions are consistent with PBT’s model of unawareness. On the other hand, it acknowledges the impressive research and clinical evidence reviewed by the trauma model that stress precedes the onset of DID, and that this disorder, like other types of madness, is a coping mechanism to an intolerable level of emotional distress. From this standpoint, although the socio-cognitive experimental studies in which DID is intentionally faked by professional actors (see Boysen & VanBergen, 2014; Giesbrecht et al., 2008) are clearly important as they indicate that these behaviors are intentional, they do not resolve the fundamental issue of the mechanism that cause patients' unawareness. This is because it is impossible to induce an intolerable level of stress in a laboratory settings, which according to PBT is necessary for activating the psychological processes that create the unawareness of KSI.
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PBT also resolves the two opposing approaches with regard to childhood abuse. On the one hand, there seems to be little doubt that childhood abuse is prevalent among DID patients (see review by Boysen & VanBergen, 2014; Gleaves, 1996; Dalenberg et al., 2012). DID patients also show neurological changes that were observed in both animals and humans who were exposed to stress during their early development (e.g., Hopper et al., 2002; Reinders, Niejenhuis, Quak, Korf et al., 2006; Sergejew, Manning, & Manning, 2009; Sar, Unhal, & Ozturk, 2007; Tsai, Condie, Wu, & Cheng, 1999; Vermetten, Schmah, Lindner, Loewenstein et al., 2006). Hopper et al., (2002) noted, in reference to these findings, that early trauma cause "maturational lag" which in turn may lead to a predisposition to dissociation" (p. 86).

On the other hand, it is difficult to accept the trauma model's claim that child abuse is causally linked to DID. First, usually childhood sexual abuse does not have any pathogenic effects (e.g., Kendall-Tackett, Williams, & Finkelhor, 1993; Rind, Tromovitch, & Bauserman, 1998). For example, meta-analyses of 59 studies revealed that individuals with child sexual abuse were on average only slightly less well-adjusted than controls (Rind et al., 1998). Second, child abuse is associated not only with DID, but is also related to a variety of deviant behaviors, such as anxiety and depression (e.g., Bushnell, Wells, & Oakley-Browne, 1992; Yama, Tovey, & Fogas, 1993), panic disorder (e.g., Friedman, Smith, Fogel, Paradis, Viswanathan et al., 2002), conversion disorder (e.g., Kuloglu, Atmaca, Tezcan, Gecici, & Bulut, 2003; Roelofs, Keijers, Hoogduin, Naring, & Moene, 2002), anorexia nervosa (e.g., Oliosi & Grave, 2003; Wentz, Gillberg, Gillberg, & Rastam, 2005), injurious behavior (e.g., Favaro & Santonastaso, 2000) and suicide (e.g., Meadows & Kaslow, 2002; Read, Agar, Barker-Collo, Davies, & Moskowitz, 2001). Third, DID may develop in the absence of child abuse (e.g., Gupta & Kumar, 2005; and Nakic & Thomas, 2012; Spanos, 1994). As noted by Spanos (1994), "Most people who suffer even severe child abuse do not exhibit [DID], and
many people who have not been abused can easily and quickly be induced to display multiplicity" (p. 158).

Thus, it seems that people who were subjected to childhood abuse are more likely to develop DID, when this is suitable for their coping needs, both because their childhood trauma increase their vulnerability to stress (e.g., see a review by Dalenberg et al., 2012) and because of the availability of their dissociative tendencies that were crystallized via neurological changes. This, however, does not invalidate the socio-cognitive claim that DID may develop in the absence of child abuse. People may adopt this disorder and fabricate childhood experiences, as claimed by the socio-cognitive model (e.g., Acocella, 1999; Giesbrecht et al., 2008; Read & Lindsay, 1994; Spanos, 1994, 1996). While therapists may play a vital role in motivating patients to fabricate childhood trauma (e.g., Loftus, 1993), it seems likely that patients want to be deceived and therefore are inclined to cooperate with therapists' persuasive efforts in order to validate their self-deceptive belief.

**Discussion**

**PBT's Unawareness vs. Freudian Unconscious**

Similar to Freud, PBT views patients' unawareness of the underlying cause of their behaviors as a central issue that must be explained in order to gain genuine insight into the processes by which madness develops. However, PBT's model of unawareness is radically different from the Freudian unconscious. Freud conceived the unconscious as a powerful entity, equal or superior to the conscious, with the ability to control and manipulate the individual's behavior and produce an endless range of mad behaviors disorders (e.g., see Bonanno and Keuler, 1998; Fenichel, 1946;
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Freud, 1915b, 1923; O'Brien & Jureidini, 2002). As noted by Gross (1978), "in every one of our miniscule actions, we are told, we are the puppets of a controlling unconscious with its own eccentric will" (p. 173). In contrast, in PBT, the conscious is the only cognitive system that controls the manifestation of individual's behavior, regardless of whether it is normal or mad. For example, nothing other than the conscious can "paralyze" the individual's limbs in conversion disorder or causes him to kill, as in criminal insanity. Although PBT acknowledges the existence of intuitive-unconscious processes, these processes can only suggest ways of actions but they cannot force them against the individual's conscious agreement. Most importantly, patients' continued state of unawareness is largely the consequence of the active involvement of the conscious that blocks the accessibility of KSI/TR. Although the manifestation of the mad behavior becomes automatic, the conscious maintains a minimal level of awareness allowing the patient to modify his behavior if his psychological conditions or reality demands are changed.

Another distinct difference between Freudian unconscious and PBT's model of unawareness concerns the cause of madness. Although Freud viewed mad behaviors as rational, as the symptom reduces the individual's level of anxiety (see Simon, 1978), his theory conceives patients as irrational beings. Patients' behaviors are controlled by an autonomous unconscious entity that imposes self-destructive behaviors, against the individual's best interest, which are predetermined by repressed historical events that are detached from current reality demands. In contrast, in PBT, the intuitive-unconscious selected mad behavior is the best option available in response to the current stressful situation, according to the individual's best judgment.
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Although PBT acknowledges that historical events may affect the choice of symptoms, as seen in the case of Leonard (1927) and childhood trauma in DID, it attributes these effects to availability. In other words, historical life events may influence the choice of symptoms in the way as other channel of communications do, such as the media, but they have little or no etiological role in the development of madness. The only conditions that may motivate the adoption of madness are current stresses. Childhood experiences may indirectly affect the individual's response to stress, such as through the lack of adequate social training that may cause the lack of coping skills.

The new model of unawareness allows for several theoretical achievements. First, it enables us to speculate conditions that stimulate the re-display of the mad behavior after its onset. These include stress, belief-challenging conditions, JTC, and demand characteristics. This new insight regarding the conditions that re-activate the symptom, enable us to integrate findings, which behavioral-cognitive theorists attributed to conditioning or irrational cognitions. One example is when panic disorder patients re-experience panic attacks when they are confronted with bodily sensations through chemical substances, exercise or other sources. (See Barlow, 2004). While behaviorists (e.g., Barlow, 2004; Bouton et al., 2001; Carter & Barlow, 1995; Mineka & Oehlberg, 2008; Mineka & Zinbarg, 2006) and cognitivists (Austin & Richards, 2001; Clark, 1988, 1999; Cox, Endler & Swinson, 1995; Goldberg, 2001; Margraf & Ehlers, 1991) attributed this effect to conditioning or irrational catastrophic interpretation of these stimuli, respectively, PBT claims that this is part of the individual's cognitive efforts to preserve the validity of the self-deceptive belief. While the behavioral-cognitive explanations are limited to fear and anxiety which are confronted with serious empirical and theoretical problems (see review by Rofé, 2015), PBT's theoretical proposal applies to a much wider range of data. This includes panic disorder, agoraphobia and OCD, as well as experimental studies where patients are coaxed.
to display their symptoms when their self-deceptive beliefs are challenged (see Grosz & Zimmerman, 1965; Levy & Jankovic, 1983; Zimmerman & Grosz, 1966).

Second, the new model of unawareness explains why certain patients believe they are ill whereas others deny that they suffer from mental illness. It also clarifies why awareness of the illness increases depression and suicidal tendencies among schizophrenic patients. Third, it resolves the seemingly incompatible evidence of patients displaying both awareness and unawareness. Examples include the Unabomber and Charles Cullen, who as stated previously, consciously planned their criminal acts, yet were unaware of the true motive of their behaviors. Another example is the previously mentioned findings where conversion patients fail to display their symptoms when their attention is diverted, or regulate its display in such way that it will reduce a potential damage. Similarly, Leonard adjusted his agoraphobic symptoms when the University authorities threatened to fire him. Likewise, Nash consciously suspended his psychotic symptoms and presented normal behavior when he wanted to be released from McLean mental hospital.

PBT’s model of unawareness settles a number of theoretical disagreements. One dispute relates to studies showing cerebral functioning in conversion patients (e.g., Fink, Halligan, & Marshall, 2006; Rotge, Lambrecq, Marchal, Pedespan, et al., 2009), which motivated neurologists to attribute this behavior to neurological cause. Following these findings, the DSM-5 decided to classify conversion disorder with behavioral disorders that have clear medical cause (e.g., diabetes, cancer, and coronary disease that were exacerbated by psychological factors) and to consider the alternative name of "functional neurological symptom disorder" instead of conversion disorder (American Psychiatric Association, 2013). So far, neurologists failed to explain these findings. In contrast, as elaborated on above, PBT claims that the cerebral changes are by-products of contradictory conscious messages. The first is the conscious decision to move
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the affected limb when instructed to do so, and the second is the simultaneous conscious inhibitory activity conveyed by the self-deceptive belief of the illness, or hypnotic suggestions. The unique contribution of PBT in the understanding of conversion disorder is confined not only to these findings. This is the only theory that can integrate all relevant data pertaining both to the development and treatment of this disorder into one theoretical paradigm (see also (Rofé & Rofé', 2013).

The second dispute concerns the trauma model of DID, which views this disorder as a coping mechanism by people who were subjected to childhood trauma (see Bremner, 2008; Dalenberg et al., 2012; Gleaves, 1996), and socio-cognitive explanation, which claims that it is a role enactment (see reviews by Boysen & VanBergen, 2014; Giesbrecht et al., 2008, 2010; Lilienfeld, Kirsch, Sarbin, Lynn, Chaves, et al., 1999). PBT agrees with the trauma model both that DID is a coping mechanism and that this disorder is more prevalent among victims of childhood abuse. At the same time, PBT's model of unawareness is consistent with the socio-cognitive claims that patients fake the disorder and that these behaviors "are carried out with little or no conscious awareness" (Lilienfeld et al., 1999, p. 508).

Rival Models of Self-Deception

Sackeim and Gur (1978; see also Gur & Sackeim, 1979) developed a psychoanalytic model of self-deception stating that under certain motivational conditions, individuals can maintain two contradictory beliefs, one of which remains outside the conscious. In support of this theory, they found that subjects who had experienced failure were unable to identify their own voices heard from a recording device, while simultaneously displaying elevated levels of GSR (Galvanic Skin Response). This theoretical model was then applied by Sackeim, Nordlie, and Gur (1979) to account for a case study of a hysterically blind girl (Grosz & Zimmerman, 1970), who supposedly
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held two contradictory cognitions: (1) the patient consciously believed herself to be blind; and (2) she "unconsciously knew" that she was not blind, because she accurately identified visual objects in 480 experimental trials. In other words, from the standpoint of Sackeim et al., hysterically blind patients can display accurate visual performance without actually being aware they can see.

However, Sackheim et al.'s position is complicated by the fact that the girl never claimed to be totally blind. "Her behavior showed no signs of any visual deficits except when asked to read small or large print . . . [and] she scored 100% loss of vision for reading in both eyes" (Grosz & Zimmerman, 1970, pp. 118-121). This evidence suggests that the girl suffered from selective hysterical blindness similar to the air force patients in World War II who complained of selective ocular hysteria (Ironside & Batchelor, 1945). The authors reported 40 cases of aircrew members who exhibited visual disturbances (e.g., blurred vision or defective night vision) that prevented them from fulfilling flight-related tasks. According to Ironside and Batchelor (1945) these patients suffered from problems related to "looking" rather than from disturbances in "seeing." In looking, "the interference is with the will of the patient, and such functions as perception, appreciation, attention and response are involved; in other words it is the patient who is at fault, and not his visual mechanism" (p. 89). Thus, it appears that the aforementioned girl deliberately failed to read by consciously disrupting the focus of her eyes. The patient could simultaneously eliminate KSI/TR from her conscious and reinforce her self-deceptive belief of physical illness based on this seemingly objective evidence of blurred vision and the sense of introspective evidence of lack of control of the physical "defect", as specified in Figure 1. This coping strategy enabled the girl to compel her parents, who "appeared to be very busy pursuing their own activities and seemed always to be in a rush to go somewhere or work on some project" (Grosz & Zimmerman, 1970, p. 117), to fulfill their parental duties (e.g., helping with homework).

Von Hippel and Trivers (2011) developed a more systematic theoretical approach to the issue of self-deception among the general population in everyday life. It is difficult to see how their self-
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decception model, which constitutes an important contribution to the understanding of everyday life, can promote the understanding of neurotic and psychotic disorders. One of the challenging problems of this model is that "one cannot deceive oneself into believing something while simultaneously knowing it to be false" (Bandura, 2011, p. 16). PBT resolves this issue by stating that patients initially forget (i.e., become unaware) of their KSI/TR and then, immediately afterward, validate a self-deceptive belief based on an extrospective observation that their behavior is maladaptive and an introspective experience of loss of control.
Part III

Therapy:

The Integrative Therapeutic Model of Madness
Introduction

Given the inability of traditional theories of psychopathology to incorporate research and clinical findings pertaining to the development of psychological disorders into a coherent theoretical system, it is not surprising that they did not succeed in their attempts to integrate the relevant therapeutic techniques to one theoretical framework (e.g., see reviews by Feixas & Botella, 2004; Lampropoulos, 2000, 2001). Consequently, researchers ceased their efforts to find the mechanisms of therapeutic change and focused instead on empirical evaluations of therapeutic techniques. Based on meta-analysis, some investigators concluded that all therapies have similar efficacies, and suggested that a number of common factors, such as therapeutic alliance, empathy, support and emotional catharsis are responsible for therapeutic changes (e.g., see Feixas & Botella, 2004; Lampropoulos, 2000; Luborsky, Rosenthal, Diguer, Andrusyna et al., 2002; Reisner, 2005). Others listed a number of empirically supported therapies (ESTs), claiming they have been found to be more effective than other techniques in the treatment of specific disorders (see e.g., Chambless, 2002; Reisner, 2005).

However, while the empirical examination of therapies is highly important, revealing the mechanisms that control the therapeutic change is still the most important goal. Rosen and Davison (2003) noted psychotherapy "Should work toward the identification of empirically supported principles of change" (p. 303), rather than focusing on empirical evaluations of effective therapies. Similarly, Tryon (2005) commented, "[the] effectiveness of efforts to persuade clinicians to adopt ESTs may depend substantially on the extent to which science can explain why ESTs work and thereby provide clinicians with an empirically supported explanatory context in addition to effective interventions" (p. 68). Likewise, Power and Brewin (1997) noted that while some clinicians
Simply bury their heads in the sand and continue with their favorite techniques. Others, like ourselves, are puzzled and are asking if there are common mechanisms that apply across different therapies that might explain both their effectiveness and their (sometimes) lack of effectiveness?" (p. xi).

The historical efforts to understand the underlying causes of behavioral disorders were made not only for this matter per se but mainly because this constitutes the key for understanding the mechanisms of therapeutic change. As noted by Willick (2001),

We might ask whether it matters what theories of etiology we believe. Do they really influence our clinical work with patients? Of course, it matters to those of us interested in knowing what influences normal and pathological development. For those of us who believe that an understanding of those influences can inform our treatment, it certainly matters. We teach analytic courses on psychopathology…in the hope that understanding how mental illness develops will guide us in treatment (p. 50).

Accordingly, a genuine therapeutic intervention must not only alleviate the individual's emotional state or symptoms. Rather, the therapy must identify the underlying causes for the behavioral change and take the proper actions to remove these motivational factors.

Part III aims to show that all therapeutic methods pertaining to neuroses and schizophrenia can be integrated within the theoretical framework of PBT. They all obtain their efficacy by affecting one or more components, which according to PBT maintains the symptom. The specific therapies include cognitive-behavior therapy, punishment-reinforcement therapy, religious therapy, psychoanalysis, and drug treatment. Although these methods emerged out of theories that are conceptually different from PBT, with the exception of religious therapy that lacks theoretical...
background, virtually, they belong to PBT as it can provide a more parsimonious explanation of their efficacy.

From PBT's perspective, all these therapies, including psychoanalysis, are in fact symptomatic interventions. As will be demonstrated below, these therapies obtain their effects by affecting one of the following techniques: 1) Sabotaging the self-deceptive belief, and hence preventing the maintenance of unawareness of KSI/TR. As a result, the symptom becomes costly as loses its repressive value and increases the patient's tendency to abandon it; 2) Decreasing the controllability value of the symptom by punishment-reinforcement procedures, which again increases the cost of the symptom; 3) Diminishing the repressive value of the symptom by increasing the patient's awareness to KSI/TR; 4) Relieving the emotional distress by artificial means, such as drugs, and thus increasing the likelihood that patients will either adjust to the stress or resolve it.

Symptom substitution is rare (e.g., see Blanchard & Hersen, 1976; Wilson, 1999) either because the alternative symptom is too costly or since having no better choice some manage to cope. Furthermore, often therapists enhance the individual's coping ability to remove the stressors through coping skill training. However, none of the theoretical theories of psychopathology that resulted in the traditional therapeutic techniques do not suggest removal of current stress. Hence, Part III also suggests a new therapeutic method, Insight-Rational Therapy, which aims to increase patients' awareness of the current stressors and the faulty behavioral methods they use in addressing their problems. Simultaneously, it increases the patient's coping ability through coping skills training. It should be noted that drug therapy will not discussed in this part of the book as it was already addressed in Part I.
Neurosis

Cognitive-Behavioral Therapy

Original Explanations: Originally, behaviorists explained the development of neurotic disorders that are associated with high level of anxiety, such as panic disorders and agoraphobia, by the Pavlovian conditioning paradigm. According to this theory phobias (e.g., dog phobia) develop as a result of a connection between an aversive event, termed UCS-unconditioned stimulus (e.g., dog's bite) and a neutral stimulus (e.g., dog), termed CS-conditioned stimulus. However, since usually panic disorder and agoraphobia develop in the absence of UCS (e.g., see Jacobs & Nadel, 1985; Rofé & Rofé, 2015), which invalidates this theoretical approach, the neo-conditioning theory (termed also interoceptive conditioning) claims that the first panic attack, stimulated by stressful life-event in interaction with biological/genetic and personality traits, constitutes the USC (e.g., Barlow, 2004; Bouton, Mineka, & Barlow, 2001; Mineka & Oehlberg, 2008). Thus, bodily sensations, experienced during the stressful life-event, are the CS that becomes conditioned to the panic attack. Accordingly, once a connection between CS (bodily sensations) and USC (panic attack) is established, patients will automatically experience panic attack whenever they experience even a weak level of bodily sensations, such as during exercise, drinking coffee and exposure to CO₂-enriched air. Some patients develop agoraphobia, rather than panic disorder, soon after the experience of the first panic attack, because of social embarrassment of losing self-control (see review by Rofé & Rofé, 2015). Although cognitive theorists reject the conditioning explanation, they too attribute the cause of panic disorder and agoraphobia to bodily sensations experienced as the result of stressful life-event. According to this theory, panic disorder is the consequence of catastrophic interpretations of bodily sensations (Clark, 1986, 1988).
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Indeed, in accordance with these theories, studies found that repeated prolonged exposure to bodily sensations or instructing patients to interpret these stimuli realistically result in beneficial therapeutic outcomes. The combination of these interventions, termed cognitive-behavior therapy (CBT), increases efficacy of these therapies for panic disorder and agoraphobia (e.g., Barrera, Grubbs, Kunik, & Teng, 2014; Bouchard, Gauthier, Nouwen, Ivers et al., 2007; Casey, Oei, & Newcombe, 2005; Craske & Barlow, 2008; Salkovskis, Hackmann, Wells, Gelder et al., 2006). Similar results were found for OCD (e.g., Emmelkamp, 2002; Emmelkamp, van Oppen, & van Balkom, 2002; Himle & Franklin, 2009; Podea, Suciu, Suciu, & Ardelean, 2009; Radomsky, Shafran, Coughtrey, Rachman, et al., 2010).

**Shortcomings:** Before suggesting PBT's alternative explanation to CBT, it is a worthwhile to indicate that both theories are confronted with serious empirical and theoretical difficulties that challenge their validity (see review by Rofé & Rofé, 2015). Some of these difficulties are as follows:

1. **Inadequacy of the explanation of agoraphobia:** Both the interoceptive neo-conditioning and cognitive theories are incapable to explain why in many cases patients develop agoraphobia in the absence of panic attack (Fava, Rafanelli, Tossani, & Grandi, 2008; Goodwin et al., 2005; Hayward & Wilson, 2007). As claimed by Wittchen, Nocon, Beesdo, Pine et al. (2008) in a substantial number of cases, agoraphobia is "a clinically significant disorder that exists independently of panic attacks and panic disorders" (p. 153). In fact, agoraphobia may serve as a predictor of development panic disorder (Bienvenu et al., 2006).
2. Pseudo empirical support and resistance to extinction: In an attempt to validate their interoceptive conditioning theory, behavioral researchers successfully produced conditioning effects in which the UCS was prolonged exposure to CO$_2$-enriched air, while the CS was either a fear-relevant stimulus (e.g., fear-relevant images, such as snake; Forsyth, Eifert & Thompson, 1996; Forsyth, & Eifert, 1998; Stegen, De Bruyne, Rasschaert, Van de Woestijne et al., 1999) or a brief exposure to CO$_2$-enriched air (e.g., Acheson, Forsyth, Prenoveau, & Bouton, 2007). In accordance with the claim that panic disorder patients are more vulnerable to conditioning due to genetic, temperamental, or experiential vulnerability (e.g., Bouton et al., 2001), experimental evidence shows that panic patients demonstrate greater resistance to extinction in comparison with a non-clinical sample (Michael, Blechert, Vriends, Margraf, et al., 2007).

However, there is an enormous gap between panic disorder in everyday life and panic-like effects in the laboratory. Unlike laboratory studies, where the conditioned response is easily extinguished and has little psychological effect (e.g., Harrington, Schmidt, & Telch, 1996; Prenoveau, Forsyth, Kelly, & Barrios, 2006; Perna, Cocchi, Politi, & Bellodi, 1997), panic disorder severely disrupts the individual's daily functioning and is highly resistant to extinction (see Eifert, 1992; Jacobs & Nadel, 1985; Seligman, 1988). As stated by Jacobs and Nadel (1985), "those afflicted with such problems often fail to show extinction after many years of exposure to the feared stimuli, even in the absence of any aversive consequences" (p. 514). This lack of extinction is typical of other forms of bizarre fears as well (e.g., chocolate phobia; Rachman & Seligman, 1976). In Leonard's (1927) case study, the bizarre fear of trains developed into agoraphobia that lasted for more than 14 years, despite vigorous attempts to overcome the fear with a variety of therapeutic introversions. As noted by Eysenck (1976),
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Unless this fact can be explained in a satisfactory manner, the theory becomes untenable. Indeed, as the essence of the ‘neurotic paradox’ is precisely the failure of extinction to occur (anxiety fails to extinguish although no reinforcement is offered: behavior which is punished continues to occur), we may say that the Watson theory fails to come to grips with the problem which it was designed to solve (p. 254; see also Seligman, 1988, p. 326).

3. Inability to integrate data of rival theories: One example concerns the inability of interoceptive conditioning theory to integrate the significant association between misinterpretation of bodily sensations and the development of panic disorder (e.g., Austin & Richards, 2001; Clark, 1986, 1988), and the fact that changing patients' beliefs regarding these sensations through cognitive therapy yields positive results (e.g., Arntz, 2002; Clark, 1999; Salkovskis, Clark, & Hackmann, 1991). This effect does not occur in simple phobias, where the phobia remains in the same intensity even when the individual is aware that the CS is not harmful. "Telling a phobic, however persuasively, that cats (CS) won’t do him any harm, or showing him that the UCS doesn’t occur when cats are around is rarely effective" (Seligman, 1971, p. 311).

4. Rarity among children: Another basic difficulty is the rarity of agoraphobia, panic disorders, or other forms of bizarre fears, amongst children (e.g., Barlow & Craske, 1988; Kenardy, Oei, & Evans, 1990; Klein, Mannuzza, Chapman, & Fyer, 1992; Rachman, 1990; Rosenbaum et al., 1995; Tearnan, Telch, & Keefe, 1984). "Why should people begin to experience a fear of public places and travel between the ages of 18 and 25?" (Rachman, 1990, p. 73). One would expect that adults who have had much greater fearless exposures to situations such as supermarkets and restaurants would be less vulnerable to developing
agoraphobia. This claim is compatible with both the behaviorist notion of habit strength, which states that the learned response is strengthened with reinforced repetition (e.g., Hulse, Egeth, & Deese, 1980 pp. 175, 181-185), and findings that fearless experiences tend to immunize the subject from acquiring conditioned fear (e.g., Davey, 1989a, 1989b; Mineka & Cook, 1986; Rachman, 1990, pp. 181-182). Yet the clinical evidence is contrary to this expectation. The lower prevalence of bizarre fears amongst children is also surprising because simple fears (e.g., fear of animals, darkness, and water) develop during childhood rather than adulthood (e.g., Fredrikson, Annas, Fischer, & Wik, 1996; Graham & Gaffan, 1997; King, Eleonora, & Ollendick, 1998; Lautch, 1971; Marks, 1987a, p. 372; McNally & Steketee, 1985; Menzies & Clarke, 1993a; Milgrom, Mancl, King, & Weinstein, 1995; Moore, Brodsgaard, & Birn, 1991; Rachman, 1990, p. 73; Spence & McCathie, 1993).

5. Etiology: Although a large body of studies support Clark's (1986, 1988) misinterpretation theory (see Rofé & Rofé's review, 2015), this does not necessarily reflect a causal relationship between cognitions and panic attacks. As noted by Rachman (1990a), catastrophic misinterpretation of thoughts may be "mere accompaniments of a fundamentally biological disorder or accompaniments of conditioned panic reactions" (pp. 129-130). Additionally, panic attacks may occur in the absence of catastrophic thoughts as well; for example, a number of investigators found that panic attacks occur during non-dreaming stages of sleep, where catastrophic thoughts are absent (e.g., Craske & Barlow, 1989; Craske & Rowe, 1997; Hauri, Friedman, & Ravaris, 1989; Lesser, Poland, Holcant, & Rose, 1985; Ley, 1988; Mellman & Uhde, 1989). Although Schredl, Kronenberg, Nonnell and Heuser (2001) reported that nocturnal panic attacks are closely related to dreams and nightmares, they too reported that a subgroup of patients in their study experienced panic attacks in the absence of dreams.
Furthermore, subjects may display diurnal panic attacks which are not preceded by catastrophic cognitions (e.g., Kenardy, Fried, Kraemer, & Taylor, 1992; Kenardy & Taylor, 1999; Rachman, Lopatka, & Levitt, 1988; Zucker, Taylor, Brouillard, Ehlers et al., 1989). Similar conflicting data concern cases "non-fearful panic disorder" or "non-cognitive panic", which occur in the absence of fear or catastrophic cognitions (e.g., Barlow et al., 1994; Beitman, Lamberti, Mukerji, DeRosear et al., 1987; Beitman, Mukerji, Russell, & Grafing, 1993; Bringager, Gauer, Arnesen, Friis et al., 2008; Fleet et al., 2000; Kushner & Beitman, 1990; Rachman, Levitt & Lopatka, 1987; Rachman, Lopatka & Levitt, 1988). It has been argued that fearful thoughts are sometimes "missing" because the catastrophic misinterpretation of bodily sensations takes place so quickly that panic patients may not be aware of their existence (e.g., see Clark, 1988; Rachman et al., 1987). McNally (1990) noted, however, that patients would remember thoughts of having heart attacks, even if they were momentary. Furthermore, this claim renders Clark's theory untestable. As noted by McNally (1990), if patients could become unaware of such self-producing catastrophic thoughts, "then what would constitute evidence against the hypothesis that catastrophic misinterpretation necessarily precedes panic attacks?" (p. 407; see also McNally, 1999, p. 8). Cognitive theory also provides no explanation as to the mechanisms which makes patients think irrationally or non-adaptively. While psychoanalysis attributes this effect to the unconscious (e.g., De Poderoso et al., 2005; Shilkret, 2002), conditioning theories to learning experiences (e.g., Bouton et al., 2001; Davey, 1989a), and biological models to adverse neurochemical factors (e.g., Barlow, 2004), cognitivists provide no explanation for why a minority of people suddenly begin to think irrationally.
5. **Inability to explain bizarre phobias**: The most fundamental difficulty of both the interoceptive/neo-conditioning and cognitive theories is their inability to explain seemingly absurd phobias where patients display extreme phobias toward harmless stimuli that severely disrupt their daily activities, in the absence of an aversive event that could justify the abrupt behavioral change. This was illustrated in Leonard's (1927) case study and other clinical examples, such as chocolate phobias (Rachman & Seligman, 1976), insect phobia (Jacobs & Nadel, 1985), rat germ phobia (Brandt & Mackenzie, 1987) and AIDS phobia (Glass, 1993). Experts in fears and phobias (e.g., Rachman (1990) acknowledged the inability of behavioral-cognitive theories to explain these phobias, suggesting that these cases may be better explained by the psychoanalytic theory. However, the understanding causes of these behaviors remained mystery, especially after the theoretical collapse of psychoanalysis (e.g., see Kihlrstom, 2015; Rofé, 2008).

In conclusion, behavior-cognitive theories are confronted with serious theoretical and empirical difficulties in the explanation of panic disorder and agoraphobia, and are incapable to explain cases of bizarre phobias. Nevertheless, despite their shortcomings, both approaches are viewed as the most valid explanations of panic disorder and agoraphobia. Both behavior and cognitive theories gained their scientific credibility especially due to their therapeutic success in the treatment of panic disorder and agoraphobia. As long as there would not be an alternative theory that can provide more comprehensive account of phobias, it would not be possible to undermine the validity of these theories.

**PBT's Explanation of Bizarre Phobias**: It seems that PBT is able to provide more comprehensive explanation of fears and phobias by making sharp distinction between bizarre
and non-bizarre phobias, based on PBT’s diagnostic criteria (see also review by Rofé & Rofé, 2015). The advantages of PBT are as follows: First, this theory is more parsimonious as it explains bizarre phobias, panic disorders and agoraphobia by the same set of theoretical concepts. It is even an ultra-parsimonious approach, as it uses the same concepts which were employed for the explanation of neuroses and psychoses. This was illustrated by the case studies of Leonard's (1927) of panic disorder and agoraphobia, by the case study of rat germ phobia (Brandt & Mackenzie, 1987), and Rachman and Seligman's (1976) chocolate phobia (see Rofé, 2000). Second, usually panic disorder patients develop a belief that they suffer from heart disease (e.g., Clark, 1986; Eifert, 1992; Gomez-Caminero, Blumenthal, Russo, Brown, et. al, 2005; Margraf & Ehlers, 1991). While cognitive theory attributes this belief to a genuine misinterpretation of their bodily sensations (e.g., Beck, 1988; Clark, 1986, 1988), PBT integrates cognitivists’ findings by arguing that the misinterpretations are not irrational. On the contrary, they are deliberate and rational maneuver through which patients hinder self-probing, and thereby preserve unawareness of KSI. Moreover, as stated previously, panic disorder patients experience panic attacks when confronted with situations that increase bodily sensations (e.g., CO₂ inhalation, strenuous exercise, adrenaline, sodium lactate and caffeine), not because of conditioning or naïve misinterpretation of their bodily sensations. Rather, because these stimuli challenge their self-deceptive belief.

Third, as specified below, PBT can also integrate the efficacy of CBT into its theoretical framework.

Sabotaging the Self-Deceptive Belief: Given PBT's claim that patients deliberately misinterpret their bodily sensations for matters of self-deception, CBT does not re-educate
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patients to relate to harmless stimuli in a rational manner. Rather, this therapeutic method is a sophisticated maneuver designed to sabotage patients' self-deceptive belief. Patients were aware that these stimuli are harmless prior to their disorder, and there is no reason to assume that they became irrational after their "illness". Accordingly, once these individuals are re-exposed to a stimulus which challenges their self-deceptive beliefs (e.g., dirt or adverse bodily sensations), they must interpret it as catastrophic and re-display their symptom. Failure to do so will sabotage their self-deceptive belief. CBT exposes patients to the belief-challenging stimuli, but either prevents the presentation of the symptom (e.g., prevention of washing following exposure to dirt) or increases patients' awareness of the senseless nature of their neurotic responses (e.g., exposure to CO₂ in panic disorder). This evidence sabotages self-deceptive beliefs and motivates patients to abandon the symptom, as they lose the rationale that enables them to be unaware of KSI in subsequent presentations of the symptom. Thus, from PBT's standpoint, CBT is a therapeutic intervention that compels the patients through rational means to abandon their pathological coping mechanism.

Given PBT's assumption that madness is aimed to ward off intolerable levels of stress, it is not surprising that a significant number of patients would be reluctant to abandon their symptom, as long as the stress persists. Accordingly, evidence shows that therapy dropout rates among panic disorder and agoraphobia patients may reach up to 20%-38% (e.g., Arthus, Cottraux, Mollard, Guerin et al., 1997; Barlow, Gorman, Shear & Woods, 2000; Clum, 1989; Keijsers, Kampman, & Hoogduin, 2001). Similar findings were found with OCD patients (e.g., Abramowitz, 2006; O'Conner, 2005; Schruers, Koning, Haack, Luermans et al., 2005; Stanley & Turner, 1995; Tundo, Salvati, Busto, Di-SPigno et al., 2007). Although the dropout rates were attributed to reasons such as financial difficulties, time commitments, and schedule difficulties (see Taylor, 2002, p. 187-188), the possibility remains that these are mere excuses to rationalize the termination of the
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therapy. Another indication of resistance is when patients conjure deceptive excuses to ward off the therapist's effort to disarm them of their coping mechanism. For example, following exposure therapy, agoraphobic (e.g., Hoffart, 1993) and OCD (e.g., Foa, 1979) patients may attribute the incompatible evidence of not being afraid of their anxiety-provoking stimuli to the presence of supporting figures (e.g., therapist or relative). Therefore, formal therapy usually includes unaccompanied exposure as well (e.g., see Hafner, 1983; Hoffart, 1993; Ollendick, 1995).

Sometimes, however, the patient invents a self-deceptive excuse that is more difficult to challenge directly. For example, Hoffart (1993) described an agoraphobic patient who successfully exposed himself to various parts of the city without experiencing anxiety, yet maintained his deceptive self-diagnosis of illness by attributing the contradictory evidence to chance. Hoffart concluded, "in the future, he would be just as likely as before to experience overwhelming panic attacks in similar situations" (p. 85).

Although CBT is an effective therapeutic intervention, its efficacy is limited. Many patients fail to respond to therapy, seek further therapy, develop problems unrelated to the symptom, or undergo relapse (e.g., Brown & Barlow, 1995; Hafner, 1976; Hoffart, 1993; O'Kearny, 1993; O'Sullivan & Marks, 1991; Westen & Morrison, 2001). Moreover, only a small percentage (21-27%) of those who completed therapy demonstrated high end-state functioning, defined as a clinical cure or functioning within a normative range (e.g., Fisher & Wells, 2005; Jacobson, Wilson, & Tupper, 1988). This limited efficacy may be much lower when considering Westen, Novotny and Thompson-Brenner's (2004; see also Westen & Morrison, 2001) critique, especially their claim that subjects in empirically supported therapy (EST) studies were not randomly assigned to different experimental groups. Instead, patients were "screened to maximize homogeneity of diagnosis and minimize co-occurring conditions that could increase variability of treatment response" (p. 632). From PBT's standpoint, the limited efficacy of CBT stems from the therapy's failure to address the underlying stressor of the neurotic symptom. Indeed, studies have
shown that coping skills training, which increase the patient's ability to deal with the initial stressor, enhances the efficacy of CBT (e.g., Biran, 1990; Chambless et al., 1986; Chernen & Friedman, 1993; Craske, Burton, & Barlow, 1989; Hiss, Fia, & Kozak, 1994; O'Kearny, 1993; Richards, Klein, & Austin, 2006).

In conclusion, in line with cognitive theory, PBT views patients' belief as a crucial factor in maintaining the neurotic symptoms, such as panic disorder and OCD. However, contrary to the cognitive model, the belief does not reflect irrational thinking. Instead it constitutes part of patients' cognitive maneuvers in maintaining the unawareness of KSI. Accordingly, while cognitive theory maintains that CBT re-educates patients to think rationally, PBT claims that this intervention merely sabotages patients' self-deceptive beliefs.

**Punishment-Reinforcement Therapy**

PBT's cost-benefit principle states that punishment-reinforcement therapy (PRT), which increases the cost of the symptom or reinforces patients' normal behavior, will increase the tendency to abandon the symptom. Indeed, research on both conversion disorder (e.g., Blanchard & Hersen, 1976; Donohue, Thevenin & Runyon, 1997; Goldblatt & Munitz, 1976; Gooch, Wolcott, & Speed, 1997; Mizes, 1985; Teasell & Shapiro, 1994) and anorexia nervosa (e.g., Bemis, 1987; Blue, 1979; Okamoto, Yamashita, Nagoshi, Masui, et al., 2002; Touyz, Beumont, Phillips, & Cowie, 1984) shows that behavioral therapy which decreases the utility of the symptom (e.g., withdrawal of attention, monetary rewards and hospital privileges) or increases its cost through punishments (i.e., electric shock and bed confinement), facilitates positive therapeutic outcomes.
The efficacy of this therapeutic procedure is demonstrated in a case study by Tucher and Long (1985), in which a 22-year-old soldier developed hysterical blindness in one eye after experiencing difficulty in adjusting to military stress. The behavioral treatment consisted of verbal reinforcements for the patient's reports of visual improvement, and aversive consequences that included withholding hospital privileges until the subject's vision improved. The patient was also given a rationale for improvement when instructed to wear an eye-patch over his good left eye in order to "exercise and train" his defective right eye. The subject was told that most people with visual problems improve within three days when wearing an eye patch, with complete recovery by the fifth day. The patient reported almost normal vision on the fifth day of treatment and remained so at the three-day follow-up (for additional examples, see Blanchard & Hersen, 1976; Goldblatt & Munitz, 1976).

PTR can also explain the previously mentioned case study by Leonard (1927), who modified his agoraphobic symptoms, so that he could resume his teaching by moving closer to the university when the university authorities threatened to dismiss him if he would not return to work. Similarly, Nash was able to prevent his psychiatric symptoms once he learned that this is the only way by which he could force McLean's authorities to release him from the hospital (see Nasar, 1998, pp. 260-261). Thus, in both cases, patients modified their behaviors when the cost of the symptoms became too high.

From PBT's standpoint, PRP is symptomatic intervention, which does not normally address the underlying stressor that motivated and maintained the symptom. Therefore, to the extent that patients lack suitable coping mechanisms, this therapeutic intervention may lead to symptom substitution or relapse, as shown in both conversion disorder (e.g., Blanchard & Hersen, 1976) and anorexia nervosa (e.g., see Wilson, 1999). However, these adverse therapeutic effects may be prevented if patients are given coping skills training. For example, Blanchard and Hersen (1976) reported that extinguishing the utility value of conversion symptoms (e.g., sympathy and
attention) resulted in symptom substitution in patients who encountered new stressful situations. Effective and long-lasting therapy occurred only when the extinction procedure was accompanied by coping skills training. In this regard, the authors noted:

It would appear that because of a faulty learning history this type of patient has not developed the requisite social skills needed to cope with both the usual and more unusual stresses encountered in life. Therefore, training or retraining in social skills becomes a needed ingredient in a comprehensive therapeutic regime. (p. 127).

Thus, although PRP emerged from experiments on animals, and appears to be consistent with learning theories, it seems that as far as neurosis is concerned, the efficacy of this treatment can be equally accounted for by PBT's cost-benefit principle.

**Religious Therapy**

When the symptom is associated with a specific stimulus in reality (e.g., dirt in OCD), the best therapeutic intervention for disconfirming the belief is CBT. However, when patients attribute their symptoms to supernatural forces, the therapy of choice should be facilitated by a religious figure, such as a rabbi, priest, or shaman (e.g., see Alonso & Jeffrey, 1988; Endrawes, O'Brien, & Wilkes, 2007; Hoffman, Laub, & Zim, 1990; Kua, Sim, & Chee, 1986; Razali, 1999; Seltzer, 1983; Wijesinghe, Dissanayake, & Mendis, 1976; Witztum, Grisaru, & Budowski, 1996). The efficiency of this treatment results from the psychological power of the religious figure to neutralize the evil forces to which patients attribute their symptoms, and thus sabotage the patients' self-deceptive belief. Resistance to accept the religious figure's suggestion would be considered heresy. Consequently, once the deceptive function of the self-
deceptive belief is sabotaged, it would be difficult for patients to the prolongation of the symptom and thus increase their tendency to abandon it.

For example, Pattison and Wintrob (1981) reported a case of a young Mexican woman who complained of nightmares and nightly visitations from her fiancée following his death, and believed she was possessed. In the treatment session with the woman, the therapist invited the fiancée's ghost into the house and explained to it that it was now dead, must leave the patient alone, and find an appropriate place for the dead. The ghost was then dismissed out the door and the patient's symptoms subsided rapidly. Similarly, Csordas (1987), describing a number of successful religious therapy cases, mentioned a case of a university professor who suddenly developed dissociative fugue, claiming spiritual possession, following a conflict with her husband. Although she had spent two years in psychoanalysis prior to the symptom, she refused psychiatric treatment and demanded religious therapy. The psychiatrist, at a loss, advised her to seek a prominent member of a certain cult in Brazil, and, upon filling the cult's religious obligations, she completely recovered from her symptoms.

In another example of western therapists utilizing the services of religious figures to facilitate the therapeutic process, Hoffman et al. (1990) described three case studies in which therapists enlisted the services of a rabbi, resulting in a successful therapeutic outcome for religiously observant patients. In one particular case, a 14-year-old Orthodox Jewish boy had suffered the loss of a friend and was subsequently preoccupied with thoughts of her spirit coming to harm him. The rabbi successfully relived the patient's emotional difficulties by denying the existence of spirits in the Holy Land and by encouraging the patient to say a special prayer every day, "in order to thwart unwanted and frightening thoughts and imaginings". (p. 181).
Similarly, Razali (1999) described a case of a 38-year-old female Malaysian Muslim, who suddenly developed hysterical paralysis after her husband had taken a second wife. A number of traditional healers and medical practitioners unsuccessfully treated her, before agreeing to participate in a popular Malaysian "spirit-raising séance (Main Puteri), which lasted 3 days. The patient's symptom was completely removed on the third day of the "performance," which was attributed to the departure of the "evil spirits" from her body. Thus, since the patient deceived herself that evil forces controlled her symptoms and believed that the "therapist's" rituals "cured" her from these forces, she could no longer rationalize the maintenance of her deviant behavior and therefore she was obliged to abandon it. Kok (1975) describes three additional case studies of conversion disorder in which religious rituals, including the recitation of passages from the Qur'an and offerings of a goat's head or a number of eggs had a curative effect.

Psychodynamic Therapy

Original Explanation: According to psychoanalysis, a true recovery from neurosis necessitates the lifting of repression, i.e., gaining insight into the underlying causes of deviant behaviors (e.g., see Bachrach, 1996; Barber & Lane, 1995; Charman, 2003; Rofé, 2008; Bloom, 2003; Eagle, 2000). However, studies challenge the existence of both Freudian repression (e.g., McNally, 2003; Piper et al., 2000; Rofé, 2008) and the unconscious (e.g., Greenwald, 1992; Khilstrom, 1989, 2000, 2002, 2004; Khilstrom & Barnhardt, Tataryn, 1992; O'Brien & Jureidini, 2002; Rofé, 2008). Hence, although psychodynamic therapy was found to be an effective for neurotic disorders, such as eating disorders (e.g., see review by Fonagy, Roth & Higgitt, 2005), panic disorder (Milrod, Leon, Busch, Rudden, et. al., 2007), and DID
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(e.g., Kihlstrom, 2005; Kluft, 1995), researchers attributed this efficacy to other factors, such as placebo (e.g., Grünbaum, 1984, 1986, 2007; Joplin, 2001). However, from PBT's perspective, the efficacy of psychodynamic therapy is the consequence of two main factors: 1) Sabotaging the self-deceptive belief; and 2) Lifting of repression increasing.

Sabotaging the Self-Deceptive Belief: The idea that psychodynamic therapy obtains effective results because it sabotages the patient's self-deceptive belief, applies to cases where the therapy addresses supposedly repressed childhood traumas, whose authenticity is questioned by many researchers (e.g., see reviews by Piper et al., 2008; and Rofé, 2008). Although in some cases repressed childhood trauma was confirmed by independent sources (e.g., see Brenneis, 2000; Cheit, 1998; Kluft, 1995; Martinez-Taboas, 1996), this does not prove the psychoanalytic theory, as there is no causal linkage between these events and the development of neurotic disorders (see review by Rofé, 2008; Rofé & Rofé, 2013). One example is DID, viewed by the socio-cognitive model as role-playing (e.g., Lilienfeld et al., 1999; Spanos, 1994, 1996), and a western form of spiritual possession (see Spanos, 1994, 1996). Considering claims that DID patients implicitly conceptualize their symptoms as a reflection of unconscious forces (Spanos et al.'s 1985; see also Spanos et al., 1986), it seems that just like religious therapy, psychodynamic interventions are successful with these patients (e.g., Boyd, 1997; Coons, 1994; Kluft, 1995; Putnam & Loewenstein, 1993; Waiess, 2006) mainly because they succeed in sabotaging patients' self-deceptive belief. Since patients believe in the utility of psychoanalytic therapy, the psychoanalytic ritual, conducted by a prestigious therapist produces a new belief, that the patient was cured of the noxious components of the unconscious. Consequently, since patients can no longer rationalize the symptom by attributing it to forces beyond their conscious control, this should motivate them
to abandon it. This claim is consistent with Sampson's (1992) statement that analysts' attitudes are important to the therapeutic process, to the extent that they disconfirm the pathogenic belief of the patient. "If the patient unconsciously perceives the analyst's behavior and attitudes as disconfirming the belief he is testing, the patient will make progress. In this way, direct experiences with the analyst may sometimes lead to significant analytic progress even without interpretation" (pp. 519-520; see also Spanos, 1996; Spanos et al., 1985). Accordingly, "even admittedly inexact interpretations have been noted to be of therapeutic value!" (Marmor, 1962, p. 289).

**Lifting of Repression:** Despite the lack of empirical support for the psychoanalytic concept of lifting of repression, this concept can still be useful in explaining a positive therapeutic change if therapy increases patients' insight to the current stressor rather than childhood trauma. Once a patient becomes aware of the current stressor, which is the underlying factor motivating the adoption and maintenance of the symptom, this behavior loses its repressive effect and increases the patient's willingness to abandon it. The abandonment of the symptom may aggravate patients' depression and result in relapse if the original stressor remains at the same intensity level. A genuine recovery should occur when the stressor is removed or when the patient is capable of resolving the problem with the therapist's support and encouragement.

A clinical example demonstrating this theoretical position can be found in a successful psychoanalytic intervention with a 28-year-old married woman suffering from agoraphobia (Wolitzky & Eagle, 1999). The patient's husband had taken a new job about 50 miles from the city where the couple and her parents lived. The couple planned to move to another city, sold their old apartment, and temporarily moved with their three-month-old baby into the wife's
parents' house. The patient's mother suffered from kidney disease, and from early age, it had been the patient's job to change the filters for her mother's dialysis machine. According to the authors, "the anticipated move to the new city appeared to precipitate the outbreak of agoraphobic symptoms" (p. 209). At the initial stage of therapy, the husband agreed to change his plan, and seek a job in the city where they lived. Although this caused some emotional relief, it did not affect the patient's agoraphobic symptoms, which persisted at the same level of intensity. The symptoms gradually disappeared when the patient became aware of her conflict pertaining to separation from her sick mother. Soon afterwards, the patient moved with her husband and their baby into a new apartment across the street from her parent's house. A follow up of five years showed that the patient remained symptom-free.

From PBT's standpoint, the patient's agoraphobic symptoms played two psychological functions: 1) The husband's decision to move to a new city exacerbated the patient's emotional distress and the symptoms constituted a rational coping means that compelled him to reconsider his decision; 2) The symptoms intensively preoccupied the patient's attention, thus enabling her to become unaware of her intra-psychic conflict regarding the separation from her mother. Once the therapy succeeded in generating insight into this conflict, the symptom lost its repressive value and motivated the patient to eventually abandon it. Awareness, however, did not change the patient's apprehension that separation might endanger her mother's life. Nevertheless, this did not aggravate the patient's emotional distress, and relapse did not occur, because she resolved this problem optimally by separating from her mother, while staying in the close vicinity.

Temple (2001) treated a hospitalized 15-year-old girl suffering from hysterical limb paralysis, using the psychodynamic interpretative method. The patient was in a conflict with
her mother concerning her sexual autonomy. The conversion symptoms allowed her to
distract her attention from the source of her conflict (i.e., the autonomy over her sexuality),
distance herself from her mother (i.e., the stressor) and manipulate her parents to provide
sympathy and attention through hospitalization. The psychodynamic interpretive therapy
focused on the patient's current stressor and thus increased her awareness of the underlying
causes of her behavior. Consequently, the symptom lost its distractive value and "enabled her
to find more appropriate ways of recognizing her feelings and the necessity for her to be
paralyzed gradually reduced" (p. 292). However, since the patient did not have sufficient
coping abilities, she redisplayed her pathological coping mechanism, "when she was under
stress or when a discussion about her return home took place" (p. 292).

In another case study (Viederman, 1995), a 68-year old Jewish orthodox man was excluded
from the local synagogue by the Rabbi who was persuaded to do so by the man's son-in-law.
Knowing the father-in-law's aggressive temperament and fearing that he might do "something
destructive to his reputation", the family decided to send him on a trip to Florida. Upon his
return when he learned about the family's "conspiracy", he developed conversion symptoms
expressed by rigidity of the legs and weakness in the neck muscles. From PBT's standpoint,
the symptoms improved the patient's emotional condition as they enabled him to: a) repress
his angry feelings resulting from his perception of his family's "subversive" behavior and their
"loss of confidence in him"; b) rationalize his absence in the prayer services at the synagogue;
and c) receive sympathy and support from his wife, children, and perhaps even from the
community members.

The brief psychodynamic interpretative method, consisting of 6 weekly meetings, was
aimed to increase the patient's awareness of his current stressor. For example, the therapist
told the patient "You have been unable to walk, because you are afraid to walk into the synagogue. You are afraid of how angry you are. Your confidence has been undermined... I think your symptom will go away with this knowledge. Now get up, and walk around the room comfortably and without the cane" (p. 406). The increased awareness of the stressor decreased the repressive value of the symptoms, and thus increased the patient's tendency to abandon these behaviors. Additional contributing factors were the therapist's suggestions, encouragement and sympathy as well as the participation of his wife in therapy, where the couple "spoke openly and freely to one another of their affections and their dissatisfactions" (p. 405).

**Placebo**

Occasionally, the sheer participation in a therapeutic intervention results in a positive outcome. For example, Carl Gustav Jung (1963) informed a middle-aged female patient, who had been suffering from a painful paralyzed leg for seventeen years, that he was going to hypnotize her. Without any hypnotic manipulation, the patient immediately fell into a deep trance and talked without pause for over a half-hour, resisting Jung's attempts to awaken her. Soon afterward, she declared herself cured, threw away her crutches and proceeded to walk. Jung, whose theoretical framework could not account for this unexpected result, announced to his students, "Now you’ve seen what can be done with hypnosis" (p. 120). However, he noted, "in fact I had not the slightest idea what had happened" (p. 120). From RICTM's standpoint, it seems likely that the patient wanted to abandon her symptom even before she sought treatment. However, she felt uncomfortable to do so after so many years, and resolved this problem through a pseudo-treatment intervention by a prestigious therapist. This provided her with a rationale (i.e., a self-deceptive excuse), which justified the behavioral change and
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prevented the aversive feelings of cognitive dissonance and social embarrassment that she might have experienced by spontaneous remission. As noted by Ullmann and Krasner (1975),

Once the person has made the act, and performed the new role, he cannot shift back into his prior role… The person may continue to play the role because not doing so would cast doubt on his prior behavior in that role. This is one reason why a placebo may be effective: It gives the person an "out," saves face and avoids many of the aversive consequences in "giving up" the "sick" behavior. [Italics added]. (p. 256; see also Mooney & Gurrrister, 2004).

Schizophrenia

The three major therapeutic methods of schizophrenia are drug therapy, psychoanalysis and cognitive-behavior therapy. The former two were already discussed in Part I. The third therapy is addressed below.

Cognitive-Behavioral Therapy

Explanation and Weaknesses of the Therapy: Similar to neurosis, cognitive theory attributes the etiology of schizophrenia to irrational thinking. Researchers strengthen this argument with studies showing that these individuals suffer from neurological, cognitive impairments (e.g., Moritz, Vikingdonzthum, Randjbar, Veckenstedt et al., 2010; Phillips & Silverman, 2003; Sarin & Wallin, 2014; Skodlar et al., 2013; Tai & Turkington, 2009). Accordingly, numerous studies demonstrate that educating patients to think rationally through
CBT alleviates patients' symptoms (e.g., Morrison, 2009; Turkington, Kingdon, & Weiden, 2006; Turkington, Sensky, Scott, Barnes et al., 2008; Sarin & Wallin, 2014; Sarin, Wallin, & Widerlov, 2011; Wykes, Steel, Everitt, & Tarrier, 2008). These findings appeared so impressive that both the National Institute for Clinical Excellence in the UK (NISE, 2003, 2009) and the National Board of Health and Welfare (NBH) (2006) in Sweden, recommended this therapy for schizophrenic patients. Before suggesting PBT's integrative model of these findings, the following comments need to be taken into consideration:

1. Cognitive theory does not seem able to explain the complexity of schizophrenia. For example, it is difficult to see how cognitivists' concept of irrationality can explain the large variability of schizophrenic symptoms, such as Nash, Unabomber, Mordechai Vanunu, Percy King and Mr. X. How can they accommodate cases of genetic vulnerability where often patients suffer from neurological damages, together with cases lacking evidence of genetic and neurological flaws?

2. Several anomalies used by cognitivists to support the assumption of irrationality can be explained by rational terms. One example is jumping to conclusion (JTC). Cognitivists interpret this cognitive bias as a reflection of irrational thinking, which supposedly causes the formation and the maintenance of the schizophrenic delusions (e.g., Mortiz et al., 2010; Sarin & Wallin, 2014; Skodlar & awoodwar, 2013). In contrast, as previously specified, PBT views JTC as a rational maneuver enabling patients to rationalize their self-belief and thus preserve their unawareness. Schizophrenics also display "confirmation bias," where patients look for evidence consistent with their belief (Freeman et al., 2002; Sarin & Wallin, 2014; Woodward, Motitz & Menon, 2007), and "attributional biases", where the blame for negative events is assigned to external factors (e.g., Janssen, Versmissen, Campo, Myin et al., 2006; Kuipers,
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Garety, Fowler, Freeman et al., 2006; Moritz et al., 2010; Moritz & Woodward, 2007). Here too, as elaborated on before, from PBT's point of view, the confirmation bias is a rational maneuver that validates the self-deceptive beliefs.

3. The therapeutic efficacy of CBT is not yet firmly established yet. Although numerous studies strongly support the efficacy of CBT in schizophrenia, Lynch, Laws and McKenna (2010) claimed that these studies did not consider the potential influence of blindness or the use of control interventions. Accordingly, meta-analysis in which these factors were taken into account showed that CBT is no better in reducing schizophrenic symptoms or in preventing relapse than usual therapy (Lynch et al., 2010). Similarly, Newton-Howes and Wood (2013) found no difference between CBT and supportive therapy where patients were randomly allocated to receive one of these therapies. Lynch et al.’s study was criticized on methodological grounds (Hutton, 2013) and meta-analysis study performed by Sarin, Wallin and Widerlow (2011) did show that CBT yielded better outcomes a few months after treatment. However, a more recent meta-analysis, which included only studies in which assessments were carried out by interviewers masked to treatment assignment, found that CBT has a therapeutic effect only in a small range (Jauhar, McKenna, Radua, Fung et al., 2014). The authors noted

Given that we, and others including NICE [National Institute for Health and Care Excellence], have found evidence for only small effects on overall symptoms, plus the fact that a large, methodologically rigorous 2008 trail failed to demonstrate any effective against relapse, the UK government's continued vigorous advocacy of this form of treatment ... might be considered puzzling” (p. 27).
4. Even if CBT is better therapy than rival interventions, cognitive theory cannot explain why other therapies may also be successful, as demonstrated above in the psychoanalytic therapy of Mr. X. (Karon, 2008). Wood and Joseph (2010), in criticizing investigators' effort to demonstrate the superior efficacy of CBT with schizophrenia, noted, "the research focus should now move from establishing the effectiveness of any one technique, toward studying what common mechanisms underlie all therapeutic contact" (p. 1055).

**Mechanisms Affecting the Therapeutic Change:** CBT in schizophrenia is a heterogeneous therapy (e.g., see Jones, Hacker, Cormac, Meaden et al., 2012; Tai, & Turkington, 2009) which can be classified from PBT's standpoint into techniques that sabotage patients' self-deceptive belief and stress management procedures.

1) **Sabotaging the Self-Deceptive:** CBT's basic assumption is that the information processing of external and internal stimuli of the schizophrenic patients is biased, thereby, "causing systematic distortions of the individual's construction of experience" (Skodlar et al., 2013, p. 252). "Examples of such inappropriate processing of stimuli are 'jumping to conclusion', 'confirmation biases and externalization, which are specific to positive symptoms" (Sarin & Wallin, 2014, p. 146). "The aim of CBT is thus to change the cognitive errors, dysfunctional beliefs and negative schemas … that generate the symptoms" (Skodlar et al., 2013, p. 252). Accordingly, the main component of CBT's conventional technique is to challenge the rational and realistic basis of the patient's self-deceptive belief. As noted by Alford and Correia (1994) "the belief in itself was not the focus of discussion; instead, emphasis was placed on evaluating the evidence on which the
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belief was based… the subjects themselves were encouraged to articulate arguments against their own beliefs" (p. 19).

One commonly used technique is Socratic questioning aimed "to encourage the probing of the evidence, reason, and rational" of the belief (Tai & Turkington, 2009, p. 866). Another technique is asking a series of peripheral questions about the person's belief with the implicit goal to sabotage the patient's ability to maintain the deceptive-belief without which he cannot maintains his unawareness of the KSI/TR. For example, a patient was asked, "How could others control your thoughts? What mechanism would they use? ... Can microchips really be inserted without your knowledge when you are asleep? ... Shall we find out—perhaps on the Internet---what we can about the use of microchips in operations? Also we could check about regulations concerning such operations" (Turkington et al., 2006, p. 368). An additional challenging procedure is to discuss the details of patients' experiences. For example, the clinician can ask the patient "Is it like somebody talking to you? Or shouting? ...Do other people hear their voices? If not, why not?" (Turkington et al., 2006, p. 368; see also Sarin & Wallin, 2014). CBT also uses a technique called normalization, where the therapist informs patients that their positive symptoms are experienced by normal people as a result of stress, anxiety, sleep deprivation or other factors (e.g., Tai & Turkington, 2009; Sarin & Wallin, 2014).

Contrary to CBT's assumption that the schizophrenic biased information processing is irrational, PBT claims that the schizophrenic cognitive errors are deliberate and integral part of the patient's deceptive maneuvers to alleviate their intolerable level of stress. The CBT's challenging techniques are systematic efforts to disarm patients' self-deceptive conviction that their delusions and hallucinations are based on solid evidence. Similarly,
the normalization technique sterilizes the coping value of the schizophrenic symptoms and thus increases the patient's tendency to abandon these behaviors. In other words, when the therapist leads patients to interpret their hallucinations as a normal phenomenon that may be experienced following stress or sleep deprivation, the symptom loses its controllability value by which stress-related experiences, such as failures or unacceptable impulses, are attributed to evil forces. Consequently, since the symptom becomes useless in combating stress-related thoughts, especially when "normalization" is combined with systematic efforts to demolish patients' self-deceptive belief, the patient is motivated to abandon it. In effect, CBT needs to be seen as a cognitive struggle between the therapists equipped with better ammunition, and the patient who has usually no choice but to obey the therapist's implicit demands to abandon his pathological coping mechanism.

However, the effect of this therapy is highly limited both because: 1) Sometimes "the patient's delusions are fixed and are not able to be changed" (Sarin & Wallin, 2014, p. 149); 2) It does not addresses the motivational stressor and therefore cannot yield a real recovery. A case study demonstrating the latter claim is reported by Kinderman and Benn (2002).

2) Stress Management Techniques: The Case of Carol (Bradshow, 1998):

The cognitivists' basic assumption that schizophrenic positive symptoms stem from flawed information processing and that patients should be educated to think rationally is challenged by the fact that stress management techniques per se might be effective, as illustrated in case study by Bradshaw (1998).
Carol, a 26-year single white female, was raised in a family where academic success was highly important. She was shy but had a few friends with whom she dated occasionally. After graduation from high school, Carol went out to college, where she developed undifferentiated type of schizophrenia and as a result she was hospitalized a number of times. She dropped out college, could not work, and remained supported by the Supplemental Security Income and her family. Carol did not have a family history of mental illness and showed no evidence of brain damage. CBT intervention in this case was highly successful since it enabled Carol to restore normal functioning that she displayed before going to college.

Unlike the conventional CBT method, in Carol's case "hallucinations and delusions were not directly challenged, but were interpreted as reactions to stress, personal or interpersonal concerns" (pp. 19-20). Recovery was obtained by series of therapeutic actions that enhanced Carol's coping skills and removed the motivational stressors of maintaining the schizophrenic symptoms. The goal of Carol's therapy was as follow:

a) In order to manage stress and anxiety and reinforce her adjustment skills, Carol was instructed to record her activities during morning, afternoon and evening. Both the patient and therapist reviewed this record in order to identify behaviors that improved or exacerbated her conditions. Consequently, Carol became aware of her reactions to different events and their effects on her emotional conditions. Additionally, she was encouraged to increase her fruitful activities, initially by focusing on "daily living activities," such as self-care, cooking, cleaning and time managements. Subsequently, after exploring her previous interests and using an interest inventory, she expanded her activities to wider range. For example, Carol had been previously interested in arts and crafts; thus, she was encouraged
to paint and learned macramé (a form of textile making). Further, Carol learned stress management skills, which included relaxation method (meditation) which she practiced for short periods each session, and then daily for 15 minutes. She learned to identify personal signs of stress and symptoms of relapse. These experiences were organized on a "stress thermometer" as low, medium and high. As soon as she became aware of these incidences, she would meditate briefly as a coping response.

b) Since Carol's major source of stress was social situations, as is typical to schizophrenia, a special effort was made to enhance her social skills. One problem concerned reading and misinterpretation of social cues. In order to address this issue "she was trained to 'check it out' by identifying automatic thoughts, evaluating evidence, exploring alternative explanations and generating new coping self-statements to replace the automatic thoughts" (p. 19). Specific stressful situations were identified and plans were made for adequate coping responses. "Cognitive coping skills were developed by collaborative empiricism, guided discovery, cognitive modeling, rehearsal, role-play and homework assignments" (p. 20).

c) As Carol made major progress in various areas of her life (e.g., taking a class at the community college, going out with friends, worked 10 hours a week as a volunteer at a food store), she experienced anxiety, fatigue or depression within normal limits, which she interpreted as "I'm going crazy". These fears of relapse were addressed by educating her to interpret them as normal reactions to stress, and taking preventative actions, which included a review of her "stress thermometer, schedule of activities, sleep pattern, exercise, diet and level of stimulation" (p. 20). Additionally, her fears were changed using "Socratic questioning, examining evidence and alternative explanations" (p. 20).
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Other therapeutic activities included specific programs aimed to strengthen Carol's self-concept (e.g., she was asked to identify three positive events in her life each day) and several techniques, which helped her to preserve the therapeutic changes (e.g., a review of stressors, signs of stress and effective coping strategies).

Six months and 1-year follow-up showed that Carol almost completely recovered as she displayed major improvements in work, independent living, social and family relationships. "There were few symptoms present and little distress reported by her. Interpersonal functioning was relatively unimpaired and affect and cognition were within normal limits" (p. 22).

**Conclusions:** Cognitive theory is too simple to account for the complex phenomena of schizophrenia. The implicit claim that patients, both neurotics and psychotics, are in effect "stupid" and need to be educated to think rationally fails to consider the intolerable level of stress with which they are confronted. CBT is a heterogeneous therapy composed of two major interventions: Belief challenging techniques and stress management. While both interventions can be accounted for by PBT, it seems that cognitive theory would have difficulty explaining why the later intervention yields better therapeutic results.
Discussion

Mechanism of Therapeutic Change

As demonstrated above, all therapies pertaining to neuroses and schizophrenia obtain their therapeutic effects by affecting one of the mechanisms which according to PBT maintain the symptom. Thus, therapies motivate patients to abandon their symptoms by one of the following methods:

1) **Sabotaging Self-Deceptive Belief:** Some therapies nullify the patient's self-deceptive belief and thereby pose cognitive difficulty in re-displaying the symptom. One example is CBT, where therapy increases patients' awareness of the illogical basis of their beliefs or confronts them with data that is inconsistent with their cognitions. A second example is religious therapy, where a prestigious religious figure of the same faith performs some ritual that supposedly neutralizes the harmful effects of supernatural forces. A third example is psychoanalysis, where a prestigious psychoanalyst deceive patients through some psychoanalytic rituals (e.g., hypnosis and free association) that he/she succeeded to free them from "repressed trauma"(e.g., sexual abuse), which supposedly is responsible for their symptoms.

2) **Changing the Cost-Benefit Equilibrium:** This behavioral method, which is effective especially with conversion disorder and anorexia nervosa, motivate patients to abandon their symptoms by increasing the cost of these behaviors.

3) **Lifting of Repression:** This method, originally suggested by psychoanalysis, increases the patient's insight regarding the current stressor. Thereby, it nullifies its repressive value the symptom and thus diminishes the utility of this behavior. The efficacy of this intervention was demonstrated with a number of disorders, such as conversion disorder and agoraphobia.
4) **Stress-Management:** Although current stressors were not seen as the underlying causes of psychological disorders, categorized by PBT as madness, therapies promoted by traditional theories incorporated coping skills training as central components for a genuine recovery.

5) **Alleviation of Depression:** Drug therapy does not have curative effects as in physical diseases. Antidepressants, as well as antipsychotics, alleviate patients’ emotional distress and consequently some can manage without the symptom. Sometimes, drugs have an indirect curative effect, especially in neuroses, either because patients are given time out from depression and thus strengthens their ability to search more adaptive solutions for their stressors, or because positive events that occur during this period. Antipsychotics may also disrupt the individual's cognitive ability to produce the positive symptoms in schizophrenia.

6) **Placebo:** Placebo may be effective when patients search for excuses to abandon their symptoms, either because the stress was removed or because they were habituated to it.

In conclusion, PBT succeeded in integrating various therapeutic methods into one theoretical framework, which researchers concluded that this goal is unachievable (e.g., see reviews by Feixas & Botella, 2004; Lampropoulos, 2000, 2001), for three main reasons. First, the five criteria of madness enabled this theory to classify all neurotic disorders as well as schizophrenia under one theoretical roof. Second, unlike traditional theories, PBT viewed these behaviors as rational coping mechanisms that individuals consciously adopt when confronted with an extreme level of stress. Accordingly, it was possible to accommodate the idea that patients tend to abandon their symptoms when it becomes too costly, such when behavior therapy diminishes the controllability value of this behavior or when psychoanalytic therapy reduces its repressive effect. Third, the new insight into the mechanism by which
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patients become unaware of KSI/TR enabled PBT to understand the efficacy of some therapies that obtain their effects by sabotaging patients' self-deceptive beliefs.

**Limitations of Traditional Therapies**

As was shown, the efficacy of traditional therapies is limited as, virtually, they are symptomatic treatment methods. Furthermore, the efficacies of these symptomatic methods are not equal. One factor that affects the utility of a specific intervention is its ability to sabotage the patient's self-deceptive belief. For example, as elaborated above, in neurosis, CBT yields the most effective results with anxiety disorders, such as panic disorders, agoraphobia and OCD. Psychoanalysis is the most successful in the treatment of DID, as patients attribute their symptoms to evil unconscious forces, which seemingly can be undone by this therapy. Religious therapy is effective especially in non-western countries and certain sections in the western society where patients attribute their symptoms to supernatural forces. These findings are inconsistent with one of the main streams in this area that all therapies have similar effects, resulting from common factors associated with patient-therapist relationships (e.g., Luborsky et al., 2002; Reisner, 2005), and that "techniques do not do anything to the client" (Feixas & Botella, 2004, p. 197). Moreover, although in some cases different therapies result in similar effects, as specified above for example with regard to conversion disorder, these effects occur mainly because each technique affects different underlying mechanisms which according to PBT maintain the symptom. Thus, PBT provides a theoretical framework for both EST's findings that certain therapies are more effective for specific disorders, and to some extent for the rival approach that all therapies yield similar outcomes.
Another factor that limits the efficacy of traditional therapies is the patient's coping resources. Both psychoanalysis and medical models make no theoretical distinction between different types of schizophrenics regarding their recovery potentials. In contrast, PBT claims that there are two distinct schizophrenic types, which have completely different recovery potentials:

1) Typical schizophrenics, who comprise the vast majority of this disorder, are individuals who suffer from serious brain impairments which usually are the result of genetic factors. These patients can benefit a little from psychological interventions since the therapy can do little to change the negative symptoms, especially social skills, which are due to neurological deficits. In fact, no therapy can enhance patients' coping skills to such level that enable them to manage independent functioning. Moreover, psychoanalytic therapy that increase patients' insight to real or imaginative stressors may exacerbate their psychological condition and increase the risk of suicide, as observed by some researchers (Mueser & Berenbaum, 1990; Lehman, et al., 1998). Although drug therapy can alleviate patients' emotional state and reduce the positive symptoms, the prolonged use of this intervention has to be prohibited in light of the serious damage that it may cause to the individual's cognitive and body systems.

2) In atypical schizophrenia, where there is no evidence of family genetic history or neurological impairments, such as Unabomber, Nash, Percy King, Mr. X, and Carol, psychological therapies can be helpful in obtaining full recovery, provided that they enhance patients' ability to cope with their stressors.
**PBT's Practical Contributions:** PBT's breakthrough into the underlying causes of madness and factors that maintain these behaviors enabled us to understand the mechanisms of therapeutic changes. This understanding allowed for the integration of the various methods pertaining to neuroses and schizophrenia into one theoretical framework. In addition to its theoretical value, PBT also has three main practical contributions: Diagnostic criteria, theoretical eclecticism, and insight-rational therapy.

**Diagnostic criteria:** PBT's diagnostic criteria, specified in Part I, are an invaluable contribution to therapy both because it is unanimously agreed that optimally, a diagnostic system should be based on a unified theory of psychopathology (e.g., Follette & Houts, 1996; Wakefield, 1999), and it should provide insight into the etiology of a specific disorder (e.g., see Power & Brewin, 1997; Willick, 2001). Since the DSM lacks these two critical advantages and considering other serious shortcomings of this diagnostic approach, reviewed by (Rofé & Rofé, 2016), it seems that PBT should replace the DSM.

**Theoretical Eclecticism:** Given the theoretical confusion in psychotherapy, many therapists employed an eclectic approach, termed “technical eclecticism” (e.g., Carter, 2006; Duncan, Parks, & Rusk, 1990a; Duncan, Parks, & Rusk, 1990b; Lazarus, 1989, 1995, 2008), that "permits one to select techniques from any discipline without necessarily endorsing any of the theories that spawned them" (Lazarus, 1995, p. 31). Under these circumstances, the selected therapy is made in darkness and upon a purely intuitive basis. In contrast, PBT provides an improved eclectic approach, which can be termed “theoretical eclecticism”, whereby a therapeutic intervention is selected based on a theoretical framework, which matches the patient's specific symptoms and needs to a given
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therapeutic approach. It equites clinicians with a set of principles that can guide them to a wise decision, and thus facilitate and enhance the therapeutic outcome.

**Insight-Rational Therapy:** The major practical contribution of PBT is a novel therapeutic method, termed *Insight-Rational Therapy*. This approach agrees with Freud's basic assumption that the patients' insight of the underlying causes of their behaviors is crucially important for a genuine recovery. However, PBT has a number of fundamental disagreements with psychoanalysis with respect to this therapy.

1. **PBT rejects the psychoanalytic most fundamental assumption that childhood trauma is the cause of madness.** This assumption received no empirical support (see Rofé, 2008; Rofé & Rofé, 2013). Accordingly, insight concerning childhood-repressed trauma would not have any therapeutic impact, except in cases where patients deceived themselves that their symptoms are controlled by the unconscious. As clarified above, in these cases, psychoanalytic therapy might helpful as it can sabotage the patient's deceptive belief.

2. **Given Freud's conviction that madness is illness, he precluded the possibility that the conscious may have any significant influence in the process of therapy.** Contrary to this approach, PBT claims that patients consciously evaluate the therapist's actions and that this involvement must be taken into consideration in any therapy that aims to motivate patients to abandon their symptoms. The patient may leave the therapy or resistant to change if he feels that the therapist threatens his coping mechanism and he has no capacity helping him. Therefore, in order to gain patients' cooperation, the therapist must create a therapeutic alliance and strengthens their confidence that he can help them to solve or ease their problems. Most importantly, the therapist must be careful to not induce insight of any sort, if the patient lacks appropriate coping skills to confront this knowledge, as it can only
exacerbate his emotional state. This is especially true for schizophrenics who suffer from severe brain damage as they lack the potential to acquire coping skills.

3. The most significant differences between psychoanalysis and PBT concern the type of insight and method by which this effect is obtained. In psychoanalysis, insight is synonymous to the lifting of repression, aimed to make patients aware of the repressed trauma. In contrast, in PBT, insight occurs when the patient becomes aware of the KSI/TR. Further, in psychoanalysis insight is obtained through various methods, especially free association which induces awareness by the analyst's interpretation of the patient's spontaneous associations. In contrast, in PBT, there are two methods by which awareness of KSI/TR is caused. One method, which rarely might be effective and may even aggravate the patient's emotional state, is simply telling him about his conscious adoption and the symptom. For example, Symonds (in Merskey, 1979) treated cases of fugue by telling patients, "I know from experience that your pretended loss of memory is the result of some intolerable emotional situation" (pp. 264-265). The therapist further stated that if the patient would tell the whole story he would respect the patient's confidence, even to the point of telling the patient's doctor and relatives that he or she has been cured by hypnotism. Symonds reported that all of his patients admitted to having faked their symptoms, i.e., they lost their pathological coping strategy.

A more useful way to induce insight is to create a therapeutic alliance and a confident that the therapist has the capacity to help the patient. One way of obtaining this goal is to teach the patient relaxation method, such as the Jacobson Relaxation Technique (), and encourage him to practice it for at least half hour each day. Then, the patient should to be exposed to the essence of findings that challenge the validity of traditional theories of
psychopathology, and thereby, sabotaging the individual's self-deceptive belief.

Afterwards, the essence of PBT has to be presented with data that consistent with this approach. Then, the Socrates method should be used to lead the patient at the conclusion that he must have adopted the specific symptoms as a coping mechanism in response to an intolerable level of stress.
Part IV
General Discussion
PBT's Theoretical Advantages

PBT meets five major requirements that are expected of an ideal theory of psychopathology, as opposed to traditional theories which can meet none of them. These expectations include: (1) Providing operational criteria for the diagnosis of neuroses, criminal insanity and schizophrenia, which differentiates them from non-bizarre behaviors; (2) Explanation of all these types of mad behaviors by one set of theoretical concepts; (3) Specifying the factors that cause the variability of mad behaviors within each disorder (e.g., blindness, paralysis and psychogenic movements in conversion disorder; disorganized speech, serial killings and sophisticated bizarre symptoms in schizophrenia), between different types of madness (e.g., conversion disorder, OCD, agoraphobia, criminal insanity or schizophrenia), among different types of social groups (e.g., females vs. males, western vs. developed countries) and across different period of times; (4) Integrating the seemingly incompatible data, such as evidence indicating that schizophrenia can be developed with and in the absence genetic vulnerability, and (5) Providing a unified theory of therapy.

Although, PBT is different from traditional theories of psychopathology, it is closer to psychoanalysis than other theories. Both theories: 1) Focus on the explanation of bizarre behaviors, which they divide into neuroses and psychoses; 2) Are parsimonious approaches as they use the same theoretical concepts for the explanation and treatment of these disorders; 3) View repression and unawareness as the keys for the understanding and treatment of these disorders; 4) Claim that the patient's insight of the underlying causes of their bizarre behaviors is critically important for genuine recovery.

However, there are profound differences between the two theories. First, PBT claims that the current stressors, rather than historical events, are the underlying causes of the individual's
bizarre behaviors. **Second**, contrary to psychoanalysis, which shares the same axiomatic assumption of rival theories that psychological disorders are involuntary, PBT claims that madness is a coping mechanism that people intuitively-consciously choose when confronted with intolerable levels of stress. **Third**, PBT views mad behaviors as an economic product which is chosen by the same principles that guide the consumer's decision-making process. **Fourth**, while Freud undermined the role of the conscious in the development and treatment of bizarre behaviors, PBT claims that the conscious is a major actor in the development and treatment of the bizarre behaviors. **Fifth**, although in both theories repression is perceived as a psychological process that causes the elimination of threatening materials from the conscious/attention, there are fundamental differences between them in the conception of this notion. While Freudian repression consists of five components, none of which received empirical confirmation (Rofé, 2008), PBT's repression in nothing more than conscious distraction. Most importantly, contrary to psychoanalysis, in PBT, repression is the consequence rather than the cause of madness.

**Sixth**, the two theories have completely different conceptions of unawareness. Although PBT acknowledges the existence of the unconscious, it limits its effect to intuitive processes through which a specific symptom is chosen. In PBT, unawareness is a creation activity where the conscious plays a major role. It enables patients to forget KSI/TR and results in the development of self-deceptive belief. This new concept of unawareness enabled us to understand the type of self-deceptive beliefs which patients maintain, resolve fundamental theoretical problems and to get insight into the mechanism of therapeutic change. Thus, although Freud's theory failed, and even though PBT is radically different from this theory,
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Freud made priceless contributions to the understanding of psychological disorders. He paved the way for making PBT's breakthrough into the understanding of madness.

Many scholars raise the question whether Freud is still alive or is he really dead. In this regard, Kihlstrom (2015), one of the distinguished cognitive researchers, noted in a webpage that

From a scientific point of view, classical Freudian psychoanalysis is dead as both a theory of the mind and a mode of therapy... At best, Freud is a figure of only historical interest for psychologists. He is better studied as a writer, in departments of language and literature, than as a scientist, in departments of psychologists. Psychologists can get along without him.

However, nothing is as far from the truth than that. This is certainly a distortion of Freud's enormous scientific contribution to psychology. His most significant contribution is his vision that a necessary condition for the understanding behavioral disorders is the distinction between bizarre and non-bizarre behaviors, and that bizarre behaviors have to be explained by one set of theoretical concepts. He was also right that patient's insight of the underlying causes of his symptoms is crucially important for genuine recovery. Although it is absolutely true that psychoanalysis is a dead body, it is doubtful whether PBT would be alive without Freud's spirit.

When considering the bitter historical controversy between psychoanalysis and behaviorism, there seems to be no doubt that the psychoanalytic approach, not psychoanalysis itself, won the game. Not only does behavior-cognitive theory have difficulty explaining bizarre phobias, such as train phobia (Leonard, 1927), chocolate phobia (Rachman & Seligman, 1976), insect phobia (Jacobs & Nadel, 1985), rat germ phobia (Brandt & Mackenzie, 1987) and AIDS phobia (Glass, 1993), including panic disorder and agoraphobia, as elaborated on above, but they have significant problems in accounting even for the
development of simple phobias (see review by Rofé, 2015). PBT resolves the historical controversy between psychoanalysis and behavior-cognitive theories by suggesting to make a sharp distinction between bizarre and non-bizarre phobia (Rofé, 2000, 2015). It is difficult to imagine, when considering the complex process by which mad behaviors develop, Watson's pretention and his followers to understand the development of behavioral disorders by investigating rats' behaviors. Although behavioral-cognitive therapies proved their therapeutic efficacy, as demonstrated above, their therapeutic methods and findings are integrated within PBT's theoretical model. Thus, although Freud's theory was dismissed, historically, his contribution to the understanding of behavioral disorders is incomparable to any of the rival traditional theories in this field.

PBT's most revolutionary contribution concerns the universally accepted conviction that schizophrenia is a brain disease, which seems to be incorrect. There seem to be four factors for widespread mistaken belief: 1) A high correlation between schizophrenia and genetic/neurochemical flaws; 2) An extreme level of bizarre behaviors which convey the conviction that these behaviors must be a reflection of an illness; 3) The weaknesses of psychological theories, especially psychoanalysis which was unable to integrate the neurological/genetic data into its theoretical framework; 4) Insufficiency of the methodological research, which automatically generalized findings from controlled studies to case studies. PBT takes all these issues into consideration by suggesting a theory which incorporates both neurological data and case studies of variety of bizarre behaviors into its theoretical system. The same principles that guide consumers to choose certain economic products also determine the choice of specific symptoms. PBT also demonstrated that drug therapy has limited efficacy, which is not worth the serious damages that it may cause.
Practical Implications

PBT has four major practical implications. **First**, it provides objective diagnostic criteria for neuroses, criminal insanity and schizophrenia. Scientifically, as elaborate on in the Discussion of Part I, PBT's diagnostic approach is more valid than the DSM, as it is based on clinical and research data and guided by a theory that provides insight into the underlying mechanisms that control both the development of these behaviors and the therapeutic change. **Second**, the new insight into the processes by bizarre behaviors developed improves the therapeutic intervention in two major ways. One way is the new eclectic therapy, termed by PBT "theoretical eclecticism", in which a therapeutic intervention is selected based on a theoretical framework that matches the patient's specific symptoms and needs to a given therapeutic method. It equities clinicians with a set of principles that can guide them to make a wise decision that could facilitate and enhance the therapeutic outcome.

**Third**, since the belief that schizophrenia is brain disease proved to be wrong, all mental hospitals must be closed. The term "mental hospitals" need to be abrogated, and should be replaced with "recovering homes". Furthermore, given the dreadful consequences of drugs, their usage should minimized and be used only when patients are extremely depressed. In any case, the patient has the right to refuse medication.

PBT's **fourth** important practical implication concerns the legal system. Currently, the legal system lacks objective criteria for the diagnosis of criminal insanity, which may lead to mistaken diagnoses of some criminal behaviors, such as Mordechai Vanunu and the Biker Bandit, Roni Leibovitch, which as stated were diagnosed as normal criminals. Most importantly, the legal system regard people like Unabomber, Charles Cullen, and filicide mothers, not responsible for their criminal conducts. Both psychoanalysts and advocates of
medical models arrived to this conclusion, which was accepted by the legal system, mainly because unlike normal criminal acts, in which individuals gain desirable goals and are aware of the reasons of their actions, in criminal insanity the behavior seems senseless, lack of incentive and the person appears unaware of the underlying causes of his or her action. In some cases, as seen in the Unabomber's case, the individual denies that his or her behavior is deviant. Contrary to this dominant view, PBT maintains that these people commit their criminal behaviors consciously and for selfish reasons. Accordingly, although their personal difficulties should be taken into consideration, these people must be punished, like normal criminals.

**Game Theory**

As stated, PBT fits game theory as in both theories individuals rationally choose behavioral options that worsened their life conditions. However, the main similarity concerns PBT's conception of therapy, which can be seen as a bargaining between two rational parties of patients and therapists. Assuming that neurotic and psychotic disorders are controlled by irrational factors, traditional theories of psychopathology used therapeutic procedures, which can be termed, from PBT's standpoint "a totalitarian, non-humanistic bargaining". As theorized before in Part III, although these therapies supposedly fix the patient's irrationality, for example by educating patients to think rationally, removing evil forces that control their behaviors or by drugs that seemingly repair their neurological impairments, in fact, they force patients to abandon their symptoms. It is no wonder that a significant percentage of patients leave the therapy, find excuses to maintain their symptoms, give their symptoms and then relapse, where only few truly recover.
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A more adequate bargaining that can yield better therapeutic results is PBT's democratic-humanistic bargaining, which views the patient as rational as a person as the therapist. The essence of this intervention is that in order to motivate the patient to abandon his/her symptoms and adopt more adequate behavior, he/she must first become aware of the deliberate adoption of the symptom, in response to an intolerable level of stress. This awareness is necessary so that the two parties can communicate for finding a better "bargaining" as requested by game theory. For this aim, Socrates elenchus method can be used, whereby the patient is presented with data that question the validity of traditional theories, so that he or she will be willing to consider PBT's theoretical position. However, since the patient will be resistant to share his/her secrets, which they hide even from themselves through the mechanism of repression, a number of actions must be taken by the therapist, before or in the course of the production this awareness: 1) A good rapport and trusting relationships must be established; 2) Assessment of recent stressors before the patient's behavioral change should be obtained through interviews with the patient and his/her social environment; 3) Assessment regarding the patient's coping skills and abilities to resolve the stressors by an adequate skills training. If the prospect for the resolution of these stressors is low, the therapy should avoid the production of awareness. If, however, the patient's coping resources are satisfactory, the production of awareness should be continued and the two parties should work together toward findings an appropriate solution where the patient takes responsibility for his behavior.

Research Strategy

It seems that the best research method for examining PBT's theoretical principles, as seen in this book. It seems that inherently, it is difficult to arrange controlled studies that could
provide decisive evidence that would prove or disprove PBT. This is because experimental methods are limited in their ability to induce the extreme levels of stress necessary for motivating an individual to adopt madness as a coping mechanism. Even if it would have been able to produce such state, it would not necessarily lead to the development of madness, given PBT's claim that that these behaviors are voluntary decisions. Nevertheless, controlled studies can be arranged for examining whether PBT's insight therapy, where patients are given insight regarding their underlying causes of their symptoms, can facilitate recovery. However, such therapy would be useful only after establishing good rapport and only if the patient has the coping skills with the encouragement of the therapist, to face his or the stressor, or potentially is able to acquire such skills. Controlled studies may be useful for examining other aspects of PBT's concepts, such as in the aforementioned experimental study by Levy and Jankovic (1983), where the experimenter succeeded to manipulate the patient's hysterical symptoms by manipulating the patient's self-deceptive belief. In any event, from the perspective of PBT, animals cannot promote our understanding of mad behaviors, both because bizarre behaviors are unique to human being and because these behaviors are voluntary.

In conclusion, the field of psychopathology is now is in a crossroad. Medical models became the new rulers, and enrich the drug companies on the expense of miserable people, following the scientific collapse of psychoanalytic theory. PBT defies this unfounded approach by suggesting a new theory that may change the face of psychopathology.
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Figure 1. The Deceptive Cycle