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The Power Therapies: A proposed mechanism for their action and suggestions for future empirical validation

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ABSTRACT

Power Therapies claim to achieve rapid results in reducing fear elicited by a large number of situations.is paper presents a theory of how competition among stimuli may be the basis for how the Power Therapies work. The compelling features of these therapies are that they all interrupt old habits and conditioned reflexes and provide new habits and conditioning. Therefore, many of the protocols involve overcoming prior-stimulus dominance. In addition to proposing a mechanism for these therapies, this article also reveals that, despite superficial differences, power therapies fundamentally accomplish the same thing.These therapies reduce the intensify of emotional responses elicited by stimuli associated with trauma. It is proposed that they accomplish this end through working at the subcortical level of brain activity to interrupt the negative emotional responses elicited by the trauma stimuli.

Power Therapies constitute a general category unto themselves within the field of psychotherapy, and they have become an alternative to traditional behavioral and psychodynamic psychotherapeutic techniques in the treatment of trauma. These therapies include: Eye Movement Desensitization and Reprocessing (EMDR), developed by Francine Shapiro (Shapiro, 1995); Thought Field Therapy (TFT), developed by Roger Callahan and W. Callahan (Callahan, 1995); Emotional Freedom Techniques (EFT), developed by Gary Craig (1997); Visio/Kinesthetic Dissociation (V/KD), developed by Bandler (Bandler & Grinder, 1979, Cameron-Bandler, 1978); and Traumatic Incident Reduction (TIR), developed by Frank Gerbode (1989). They may be most closely akin to

the cognitive-behavior therapies in that they share an interest in directly reducing fear, and they require the use of extensive manuals prescribing the steps to be used in treatment. They are called Power Therapies because they are reported to work rapidly and efficaciously.

Power therapies appear to utilize other, more rapid and more powerful means of interrupting associated negative emotionality than traditional cognitive-behavioral or psychodynamic therapy techniques employ (Wolpe & Lazarus, 1976). Their proponents claim to need only 1-3 sessions, whereas traditional therapies may require months or years of treatment, to effect substantial, sometimes even dramatic, improvements.

The Power Therapies

Traumatic Incident Reduction (TIR) (French & Gerbode, 1995; Gerbode, 1989, 1995) is a systematic method of locating, reviewing, and resolving traumatic events that is used in "relieving a wide range of fears, limiting beliefs, suffering due to losses (including unresolved grief and mourning), depression, and other PTSD symptoms" (Gerbode, 1995). Although the technique emerged from psychoanalytic theory and desensitization methods, it has evolved into a "person-oriented and non-judgmental" course of treatment. Its proponents claim that the use of TIR has resulted in the successful causal de-linking of painful life-event memories from distressful symptoms.

Eye Movement Desensitization and Reprocessing (EMDR) (Shapiro, 1989, 1995) is a complex treatment methodology which combines various aspects of the major theoretical orientations (e.g., psychodynamic, behavioral, cognitive, physiological, interactional, and client-centered) with a dual-attention stimulus to help reprocess "dysfunctionally stored experiences" (Shapiro, 1989). It is used as part of a comprehensive treatment plan by adequately trained clinicians experienced in working PTSD sufferers and people with related problems. EMDR therapy addresses the disturbing life experiences and trauma that contribute to a wide range of problems, as well as in treating PTSD symptoms. EMDR consists of eight phases, numerous procedural elements, and a set of protocols designed to address specific client complaints, such as fear and insomnia. It is somewhat misnomered, since, in addition to eye movements, hand-taps or tones can be and are, in fact, used in its procedural technique.

Visio/Kinesthetic Dissociation (V/KD) (Bandler & Grinder, 1979, Cameron-Bandler, 1978) involves temporarily induced dissociation from the negative feelings associated with traumatic memory through visual review of the traumatic event(s) from a different perspective. These techniques may include: a) directed "meta-self-visualization" (i.e., having subjects "see themselves seeing themselves" in the traumatic scene), b) alteration of such elements as perspective, proximity, movement, etc., and c) the induced awakening in the subjects of understandings or resources needed to promote resolution while, at the same time, emotionality is reduced. This visual review may be like watching a movie scene from various camera positions. This procedure is later followed by directed re-association and maintenance of the "learnings" acquired during the dissociation phase (Gallo, 1996a).

Its supporters maintain that kinesthetic dissociation differs fundamentally from the global type of generalized dissociation associated with PTSD, dissociative amnesia, fugue, and identity disorder, depersonalization disorder, etc. Unlike global dissociation that causes severe disruptions of various integrative functions, V/KD D only causes "a shift in one's perception of a memory from associated (i.e., as if one is reliving the experience) to dis-associated (i.e., not experiencing the memory in an associated manner)" (Gallo, 1996a). It is claimed that V/KD D, alone among the Power Therapies, promotes this "outside observer" position directly (Cameron-Bandler, 1978), whereas other Power Therapies may achieve this only indirectly.

Thought Field Therapy (TFT) (Callahan, 1995) handles trauma with the aid of an "algorithm," which is a set of rules for solving a problem in a finite number of steps. The procedure includes client interview with an immediate recording of a patient-reported SUD (subjective unit of disturbance) (Callahan, 1995) rating when he or she recalls the trauma, a series of eye-movements and -rollings, and numbered tappings at various points of the body (collar bone, arm pits, full extent of the hand, etc.) The algorithm has been updated to incorporate later discoveries. There are reportedly two advanced levels of TFT as well: the causal-diagnostic level and the voice-technology level. The latter Callahan claims to be a nearly perfect therapy.

Emotional Freedom Techniques (EFT) (Craig, 1997) claim to be an emotional healing technique for trauma, PTSD, phobias, grief, anger, guilt, anxiety, etc., that is also capable of dramatically relieving many physical symptoms, such as pain, headaches, and asthma. EFT claims a) to relieve symptoms through a "seemingly strange (but scientific) routine" which employs tapping with the fingertips on various body locations, b) to "often" do the job in minutes, c) to produce long-lasting results where other techniques fail entirely, d) to have a success rate of "typically 80% or better", and e) to have only positive side effects (e.g., cognition change in a healthy direction). Though derived from TFT, EFT requires only one comprehensive tapping routine to treat all emotional and physical problems as opposed to the 10 or 15 individualized tapping routines required for TFT.

Relative Effectiveness of Power Therapies Debated

Some researchers assert that the Power Therapies have been relatively more effective at dealing with and lessening the problems associated with Post Traumatic Stress Disorder (PTSD) than classic dynamic, behavioral and cognitive therapies, which have enjoyed some success in the treatment of PTSD (Van der Kolk, 1987; Van der Kolk, Boyd, Crystal, & Greenberg, 1985).

In a review of 17 different previous studies, some that lasted for up to 2 years and in total involved nearly 700 patients, Sherman (1998) found that some Power Therapies were "indeed effective in reducing symptoms of depression and anxiety" as well as other PTSD symptoms such as avoidance (of reminders of traumatic events) or arousal (sudden attacks of panic or anger). He found that the effects of treatment were extensive--up to 43% of patients lost all symptoms--and were maintained long term, even after treatment was discontinued.

Shapiro (1989) claimed treatment outcomes for EMDR include cessation of pronounced symptoms, achievement of insights, cognitive restructuring. Moreover, she reports that success rates as high as 84-90% have been achieved with single-trauma victims diagnosed with PTSD after only three sessions on the basis of her studies just previous to 1989. Figley & Carbonell (1996) and Carbonell and Figley (1999) found that the four Power Therapies that they shared a relatively high success rate of lowering fear in a short period of time. These were: Traumatic Incident Reduction (TIR), Visual Kinesthetic/Disassociation (VK/D), Eye Movement Desensitization and Reprocessing (EMDR), and Thought Field Therapy (TFT).

Most of the therapies differ regarding the details of treatment procedures and protocols. But the claim made in this present article is that there exists some commonality regarding how certain Power Therapies achieve their results. In light of this claim, researchers need to consider whether there are some fundamental processes common to all the Power Therapies and to identify these processes in order to understand why these therapies are effective and to determine whether they might, in fact, make some contribution to the therapeutic process.

We then need to design research hypotheses to move toward the development of an overall theory of Power Therapy treatment in the future. The purpose of this article, then, is to begin this process by examining a few common aspects of certain Power Therapies. Not reviewed are the possible strengths and weaknesses of these therapies or their relative effectiveness, and hence will not attempt to explain how each works in its entirety. Readers are invited to suspend their usual expectations of authoritative corroboration in return for an open-minded examination of the issues involved.

Shell Shock, Battle Fatigue, and Post-Traumatic Stress Disorders

These therapies emerged from the advances made during the last century in identifying and diagnosing a combat-related disorder called "shell shock" during World War I and "battle fatigue" during World War II. During the Vietnam War, the disorder became known as PTSD (see Lipton, 1994 for a review). Subsequently, the diagnosis for this disorder was extended to encompass symptoms associated with a wide range of traumatic events and people involved in such events (e.g., Herman, 1992; Van der Kolk, 1987; Van der Kolk, Boyd, Crystal, & Greenberg, 1985).

PTSD has been characterized as an "abnormal or extreme psychological response to trauma that results in long-term depression, anxiety, flashbacks and avoidance behaviors" ("Psychotherapy helps," 1998). When soldiers returning from the Vietnam War reported experiencing such symptoms, the modern form of the illness was brought to public attention in the U.S. through the media. One theory (Grossman, 1995) of why there were more reports of such symptoms has to do with increased firing of weapons and subsequent killing. Switching from paper bulls-eye targets to cutouts of solders to dummies, increased the rate of firing at actual people. It should be kept in mind that 85% of American soldiers on the line in Vietnam fired their weapons, as opposed to 15% in

World War II. Consequently, soldiers killed or witnessed the killing of more people (Grossmann, 1995). Hence, there may have been a higher incidence of PTSD in the Vietnam War because more soldiers killed people up close in Vietnam than in WW's I or II.

The psychotherapeutic sciences have not yet arrived at a set definition of "trauma," either definitions of traumatic events or traumatic stress. Specific criteria for defining traumatic stress etiology remains controversial in spite of the DSMs attempts.. The problem is that particular events or series of events that are often seen as precursors to traumatic stress are neither necessary nor sufficient for a diagnosis of PTSD as evidenced by discussions on the Traumatic-Stress email discussion group. Some people show no memory or ill effects from exposure to those events (Williams, 1994).

Because firm cause-and-effect relationships for pre-PTSD events have not been established, at present we are limited to drawing careful, but less scientifically rigorous, associations. These associations are between a) the symptoms that we collectively class as indicators of PTSD and b) given establishable events that have taken place in the lives of patients diagnosed as "PTSD"-sufferers prior to the appearance of those symptoms in them. In addition, to no determined PTSD outcome for certain traumatizing events one is faced with the social fact of the heretofore unrecognized traumatizers. It has been observed on the Trauma-Stress email list, that some people are not diagnosed with PTSD even though they show most the symptoms listed in DSM-IV. These people may have experienced previous traumas that do not fit the traditional notion of abuse, such as abandonment, neglect, and witnessing abuse, death, or torture of others. For example, until recently, even sexual abuse was not considered a traumatic event in and of itself. Even without an operationalizable definition of abuse, one can work with the co-defined pair of abuse and trauma— that which has preceded as a historical cause and that which we now see as symptoms.

Common Characteristics of Power Therapies

Although Power Therapies differ widely in treatment methods, I assert here that they all share some characteristics in responding to the symptomatic behavior of posttraumatic stress sufferers. All use a) repetitive sensory-motor acts (eye movements, tapping at designated body points, etc.), b) "traumatic triggers" called elicitors for emotional behavior and emitters for discriminative stimuli for avoidance behavior, c) treatment protocols for the procedures that describe (1) what emotional behavior to interrupt with stimuli and treat, or in other words, what disturbances are treatable with the given procedures, (2) instructions for the timing of various movements (both TFT and EFT, however, still have unclear rules for choosing which points along the body/at which to tap), (3) follow-up procedures after short-term treatment to maintain or recover benefits achieved during treatment.

Reciprocal Inhibition in Cognitive-behavioral Treatment

The systematic desensitization achieved by having someone engage in progressive relaxation activities while reviewing segments of a traumamay inhibit anxiety. Reciprocal inhibition (Wolpe, 1958) refers to a relaxation response (an unconditioned response-UR)

to be attached to an emotional response in order to produce a new conditioned response (CR) to the original conditioned stimulus (CS) and other conditional stimuli (CS's). In other words, the presentation simultaneously or nearly simultaneously of the CS that elicits relaxation cancels the effect of the other CS's that elicit anxiety. It has been well established that Reciprocal Inhibition in traditional behavior therapy does not always work in cases of trauma, because the old brain processes interrupt and the fear CS elicits such powerful emotional responses that reciprocal inhibition can not even begin to take place.

How Power Therapies May Make the Reduction of Anxiety More Likely

In this article, it is proposed that subcortically based mechanisms underlie all of the power therapies. These mechanisms should involve subcortical blocking. In order to understand subcortical blocking, we need to understand a number of innovative theories about how both learning or conditioning and unlearning work. It is assumed here that conditioned fear results from exposure to painful stimuli. The pain may be due to either the addition of events or the removal (loss) of events. Because the mechanism underlying these therapies basically consists of unlearning the responses that are acquired in painful situations, much of my discussion will focus on how unlearning (including extinction, stimulus competition, response competition, etc.) takes place.

Historical Learning Theory

Conditioning and Unlearning

In order to understand the Power Therapies' proposed mechanism for anxiety reduction, it is useful to review two different traditions within early learning theories. One tradition led to what we now know as classical (or respondent) conditioning. Pavlov (1927) described classical conditioning, relearning, and unlearning as the loss of a "behavioral trait", or extinction. Pavlov thought that during conditioning, associations formed between external unconditioned stimuli.

(US) that already elicited an unconditioned response (UR) and previously neutral stimuli (NS) that preceded the unconditioned external stimuli. After conditioning, the new stimulus (CS) would also elicit portions of the unconditioned response. Extinction of the power of the new stimulus to elicit the conditioned response would occur if the unconditioned stimulus did not follow the conditioned stimulus. This is the origin of the notion that extinction of a response occurs when the reinforcing stimulus (US) is no longer presented.

After Pavlov, various notions of extinction of fear and avoidance were set forth. For example, Watson and Rayner (1920) extended Pavlov's work by studying fear reactions in the infant “Albert”. The child was exposed to aversive stimuli, such as a loud clanging noise (US), in conjunction with initially nonaversive stimuli or neutral stimulus (NS), for example a white rabbit and, later, other similar objects like white cotton. These researchers named the fear behaviors to previously neutral stimuli conditioned emotional responses or reactions (CER).

Some deemed Watson and Rayner's explanation of fear problematic because the statement of causation of the unconditioned behavior had in itself no foundation in evidence. They assert that without knowledge of why the "precipitating event" elicited fear (i.e., that which caused an emotional reaction in the first instance) the statement avails little. Nevertheless, research in CER (Conditional Emotional Response) theory constitutes a model for understanding the relationship between ongoing operant behavior (behavior controlled by consequences) and the effect of conditioned emotional responses overlaid upon it. The conditioned emotional behavior is overlaid by presenting a CS (like the white cotton in Albert's case) during some operant behavior. Like the Power Therapies under review here, CER involves the interruption of emotional response and the further conditioning of a new, incompatible response to SD/CS (Discriminative Stimulus (Cue)/Conditioned Stimulus). A SD (Cue) sets the occasion for an operant behavior that will be reinforced. In its presence, the operant behavior is more likely and more rapid. The presentation of a cue is often followed by an appropriate response that is then reinforced. The same stimulus may also elicit some conditioned response. An example of conditioning would be the pairing of two stimuli: looking at an anti-anxiety drug before taking (Neutral Stimulus--NS) it and experiencing a reduction in fear or anxiety (US) after taking the drug. The neutral stimulus becomes a new conditioned stimulus for anxiety reduction.

A separate tradition led to what has become instrumental (operant) conditioning procedure. Thorndike (1913) suggested that a response to a stimulus was imprinted by the formation of associations between stimuli, responses, and rewards. At first he thought punishment could undo learning but later gave that notion up. In subsequent arguments put forth by Hull (1943, 1952) and Skinner (1937, 1938), classical (respondent) extinction had the same outcome. That is, when the unconditioned fear-producing stimulus no longer followed the environmental stimulus, the conditioned association tended to weaken. In the instrumental (operant) case for extinction, Hull and then Spence (1956) argued that failing to follow a response with a reward (reinforcer) would weaken responding (Skinner, 1938).

Skinner (1953, 1956) argued that failing to follow a response by punishment would lead to the return of the response. This means that the extinction of punishment was like the extinction of reinforcement. During extinction, in the reinforcement case, the response disappears and, in the punishment case, it reappears. This notion constitutes an argument for the extinction of operant punishment analogous to the one for respondent conditioning.

It was believed that extinction is the result of removal of a conditioned stimulus, and this belief seemed to be true for simple reward or punishment. It did not appear to work, however, for avoidance situations. There are situations in which the organism may emit a response that allows it simply to avoid a punishment. Nevertheless, Skinner (1972) argued that, if a response could avoid or delay punishment, simply removing the punishment would not lead to extinction of the response. This was later confirmed in studies by Solomon and Wynne (1953, 1954), who found that exposure to a CS was

necessary for extinction, but that exposure to a CS alone would not cause it.

In Solomon and Wynne's study, dogs were first placed into a chamber where they had to jump a barrier in order to obtain food. Whenever they jumped over the barrier, they were shocked. Subsequently, the dogs stopped jumping over the barrier. After a while, shock was no longer administered as a correlate of the dogs' jumping the barrier. The dogs might then be expected to re-acquire jumping behavior, if food could be obtained on the other side and the shocks were not powerful enough to cause them to freeze up. Nevertheless, the dogs would no longer jump the barrier. Thus, a simple extinction procedure did not result in an appreciable weakening of fear and avoidance. It was demonstrated, therefore, that, in the presence of avoidance, simple extinction itself is not possible. From an operant viewpoint, a genuine extinction procedure would, in this instance, be the delivery of shock whether the dog jumped the barrier or not. This procedure would uncouple what the dogs did from whether they received shock. In the wake of these pivotal findings, all modern therapies have come to be based on the presentation of the CS in order to extinguish associated fear and to overcome avoidance.

Behavior Therapy and Behavior Modification

The earliest attempts to explain the fact that the removal of punishment does not lead to reduction of fear or avoidance behavior produced two main types of behavior therapies: traditional behavior therapies, such as progressive relaxation or deep-muscle relaxation (e.g. Lazarus, 1976; Wolpe, 1958; Wolpe & Lazarus, 1966), and offshoots such as reality therapy (Ellis & Harper, 1975), reality therapy (Glasser, 1965), Cognitive Therapy (Beck, 1986, Beck & Emery, 1985) etc. The second group grew out of Operant Behavior Modification, now better known as Applied Behavior Analysis (e.g. Krasner, Bandura, & Ullmann, 1965; Ullmann & Krasner, 1965).

Early behavior therapies (Wolpe & Lazarus, 1966) introduced new methods for undoing both avoidance habits and conditioned fear. A modern interpretation of what actually happened in these therapies is that while the patient relaxed, the feared material was presented at low intensities. The relaxation response was to interfere with the elicited fear response. Much of the relaxing behavior was operant in nature. The patient had to think about something relaxing or actually to monitor the tightness of muscles and then relax them. Patients were also taught to recall stimuli that elicited the relaxation response. For example they might be instructed to recall going to a happy place. Presenting the stimuli associated with relaxation was thus cued and then the resulting behavior reinforced. Learning to relax muscles was also an operant response that was cued and reinforced. The learning of these new responses tended to interfere with the older fear responses.

Previous Explanations for Why Power Therapies Work

A number of different explanations for why each of these particular therapies works has been suggested. For example, Gallo (1996) has suggested that each promotes comfort by interrupting the intensity of negative affects. He argues further that comfort allows one

to attend more easily to trauma. Comfort should be a relevant factor. It is asserted here, that comfort alone cannot account for the results evidenced with these therapies. There a number of therapies that offer comfort such as supportive psychodynamic therapy that have not been particularly effective with people suffering from fears or PTSD.

Figley & Carbonell (1995) assert that Thought Field Therapy (TFT) invokes a reciprocal inhibitory response that competes with and interrupts, but does not eliminate, the conditioned stimulus. In traditional cognitive-behavioral therapies, the reciprocal inhibitory response is a result of a sudden and powerful relaxation stimulus. These stimuli occur during meditation, breath work, hypnosis, warm baths, and other activities that can invoke a relaxation response. They also elicit responses such as humor, insight, and orgasm.

If developing a reciprocal inhibitory response were enough to reduce fear and the other symptoms of PTSD, then the cognitive behavior therapies and desensitization therapies discussed above would be as effective as the Power Therapies. There might be a problem with behavior therapeutic methods that rely primarily on reciprocal inhibition to extinguish fear. The problem maybe that when conditioned fear stimuli are presented, powerful emotional responses are elicited by the old brain before any reciprocal inhibition can begin to take place or before there is any forebrain activity that could inhibit the fear. Therefore, a more complex explanation may be required and must consider three components: a) the level of the brain at which emotional experiences may be learned, b) the presence of interference from competing responses, and c) the salience or surprisingness of the new responses being learned.

Dyck (1993) has developed a well reasoned model for EMDR based on classical conditioning, but so far reconditioning results (Boudewyns, et al 1997) have not confirmed the model. My proposed model uses a similar approach but does not assume that reconditioning of emotional arousal is the effective mechanism. Furthermore, I suggest that an analysis based on findings from EMDR alone does not offer a sufficient explanation for the reported success of other Power Therapies.

Recent Learning theories

The Current Proposal for How the Power Therapies May Work

First of all, it is important to point out that a good portion of emotional responses, such as fear, may be learned largely at a subcortical level (LeDoux, 1998). By contrast, the appraisal of emotions on the part of the experiencer may be largely learned at the cortical level. The frontal lobes at the cortical level usually intervene to interpret the firings of the amygdala and the hippocampus at the subcortical level, which is what happens in fear reactions, and to suppress them. My suggestion is that in PTSD sufferers and phobias, the firings at the subcortical level preempt and overwhelm the frontal-lobe function and, consequently, the sufferer. Power Therapies may, then, compete with and successfully interfere with phobic and other fear responses. They delay the conditioned stimuli from directly eliciting fears and phobias until the frontal lobes can perform their interpretive function.

Therapies, including behavior therapies, involve talking about or rethinking traumatic emotional experiences. Such talk and thought involve the cortex mainly (LeDoux, 1998) even though they may trigger subcortical activity in the amygdala and hippocampus. There are direct projections of neurons from the amygdala and hippocampus into the motor area. When frontal lobe cortical activity occurs, responses directly to the motor area are inhibited. Without the inhibition of direct responses, talking therapies may not have much impact on these subcortical emotions. Instead, a subcortically based mechanism must be used.

Here, it is argued that Power Therapies, because they are based on reflexes that are also subcortical, have the capability of bringing about relearning at subcortical levels. Following Figley, Bride, and Mazza, (1997), Power Therapies may also directly affect released-action patterns elicited below the subcortical level, such as those caused by pain from trauma or loss. Released-action patterns may include complex chains of flight-or-fight behaviors. The released action patterns adapt to the constraints of the situation rather than just occur as simple reflexive activity. These flight-or-fight patterns are commonly seen in patients who "get going" before they think about what they are doing. The reflexive conditioning that leads to startles, hyper-arousal, and such probably occurs below the subcortical level. Finally, the most successful power or behavior therapies employ operant conditioning either to establish or to re-establish healthful behaviors.

Blocking, Overshadowing, and Surprisingness

An operant procedure introduces a new stimulus as a means of establishing a new response to the stimuli. Applying the results of the blocking literature (e.g., Rescorla and Wagner, 1972), after trauma, however, the set of post-traumatic responses may interfere with acquisition of new operant responses because of blocking and overshadowing.

During the 1960s, the phenomena of blocking and overshadowing were discovered. The term overshadowing refers to two things. First, it refers to the process of the production of a conditioned response by a given stimulus (S2) despite the simultaneous or near simultaneous presentation(s) of other stimuli. Second, overshadowing refers to the outcome of this process in which S2 fails to produce its own CRs. Blocking, on the other hand, is the preclusion or stopping of the conditioning of a response to a stimulus due to the greater prominence or salience of another stimulus. If a new stimulus is not any more predictive of an unconditioned stimulus (respondent) or of reinforced responding (operant), no association between the new stimulus and the unconditioned stimulus or reinforced response is formed.

These findings were systematized by Rescorla and Wagner (1972), who showed that a stimulus had to be salient in order to take part in conditioning. Blocking and attention became the cornerstone of Grossberg's (1971, 1974) neural network models on both operant and respondent conditioning. The following claim made here is that extension of these previous researchers: If before such operant and respondent conditioning were attempted, the stimuli that led to the trauma responses were overshadowed and blocked,

new conditioning would be possible.

The power therapies may, therefore, work by having one new salient stimulus dominate an older conditioned stimulus that elicits anxiety. Rescorla and Wagner (1972) suggest that new conditioning can take place after blocking of one stimulus by another. Unless the new stimulus is "surprising," it will not be salient enough to successfully compete with the older one (Anokhin, 1965). The previous conditioned stimulus will block conditioning by the new. However, the new stimulus can be conditioned by making it prevail over the old one in salience.

It is necessary that the new CS's and SD's be salient enough relative to the CS that they elicit the emotional responses that have previously blocked learning. There are two ways to do this: a) Decrease the saliency of the old CS by interrupting it, or b) Increase intensity of new CS/SD. Generally, this is not feasible because it might in and of itself elicit emotional responding because of its high intensity.

In the theory presented here, interference does not take place while an old CS remains more salient than the new CS/SD. It simply is blocked. Simple distraction may not change the salience of the old CS, because it may not interfere with the elicitive strength of the old CS. For instance, eye-movement or tapping in these therapies does not in and of itself obliterate an old CS. It will only interrupt it. In fact, if distraction moves attention too far away from the old CS, conditioning of the old CS may not be possible. Again, a stimulus must have sufficient salience--“attention-getting” strength--to enter into the conditioning process.

Techniques used in Power Therapies, like moving the eyes, tapping certain points on the body, etc., are fairly "surprising." These techniques are therefore potentially powerful elicitors of unconditioned responses and orienting responses (Denny, 1995). These unconditioned and orienting responses may thereby reduce the intensity of overpowering emotional responding by competing with emotional responses. This, in conjunction with training patients in the anxiety-reducing techniques, may be why Power Therapies work.

Overcoming Prior-Stimulus Dominance through Tapping and Related Techniques in Power Therapies

The key to treatment is to find stimuli that dominate the old CS's and US's that elicit fear and self-loathing. I doubt that one can entirely block the response without also blocking the cues (SD's) and conditioned stimuli (CS's) that evoke the conditioned fear and pain. The stimuli used to dominate the old CS should be powerful, easy to administer, and elicit responses that are incompatible with attending to the conditioned stimuli that elicit fear, pain, and self-loathing responses. After overwhelming emotional responses have been reduced in intensity, new responses may be conditioned and new complex operant behavior becomes possible.

Compelling Features of Tapping Therapy in Inducing Interruption and New

Conditioning

Power therapies have found just such response-generated stimuli that seem to block the "bad old" CS's. The question is how is it to be demonstrated that techniques, such as tapping, used in Power Therapies are more than merely sufficient causes of interruption or relaxation? So far Callahan (1995) and Craig (1997) may have demonstrated sufficiency in their separate therapies of TFT and EFT, respectively.

Still to be demonstrated, however, is the general necessity or necessity for including some specific components of TFT and EFT treatments. One way of looking at the possible necessity would be to examine brain activity. Brain activity has been measured during the presentation of stimuli that elicit traumatic responses (van der Kolk, Burbridge, & Suzuki, 1997). A test procedure utilizing brain-imaging technologies before, during, and after the techniques described above is a desideratum for determining and demonstrating the associated relevant state of the brain. Brain imaging should help to: a) establish a record of electrical and chemical brain changes that occur as a person recalls traumatic events and b) help to confirm or disconfirm the efficacy of these or other treatments independently of the subjective measures, such as the various versions of the SUD scale (Wolpe, 1958). The SUDS has the patient report the degree of pain or discomfort when a trauma is attuned or thought about, recorded in a 1 (lowest) to 10 (highest) rating. This is easily done during brain imaging because the therapist may write down this rating in the client's presence. The SUDS, in conjunction with brain imaging, might also help answer the question of whether overall fearfulness decreases after treatment of specific fears.

The Operant Overlay and Behavior Modification Aspects of Power Therapies

Although much has been made of eye movement, tapping, and the like, as well as of the choice of places to tap, the operant parts of the protocols, or "overlay", have received relatively little attention. The term operant overlay refers to the occurrence of operant conditioning while conditioned responding is going on simultaneously or near simultaneously in the same domain (here, a given brain). The operant conditioning may take place in a "higher" region of the brain, for example, in the frontal lobes as opposed to in the limbic area. Operant conditioning may provide activity, such as tapping or eye movement, that takes precedence over the respondent conditioning in the so-called lower regions of the brain. This is the essence of the process of internal events that transpire in the successful application of the Power Therapy treatments.

In the tapping treatments, two new rule-governed behaviors (habits) are established for every fear: a) sensory-motor activity: the patient senses fear, taps until it decreases close to 0 on the Subjective Units of Disturbance scale (SUDS), then moves on to the next step in the therapy protocol, and b) approach training: patients try things they used to avoid through deliberate and measured exposure to the fear stimulus. Both the given sensory-motor activity and the approach training are then socially reinforced in most of the Power Therapies.

Power therapy practitioners have various protocols for presenting material as well as

protocols that reinforce carrying out the prescribed sensory-motor activity. From the discussion on the Trauma-Stress email list, therapists using any of the Power Therapies have reported that patients subsequently engage in activities that had not been possible before the treatment. This represents the relearning of healthful behavior. The incorporation of these healthful behaviors and their outcomes into the treatment seems to be part of what most successful Power Therapy practitioners do.

Summary of Future Validation Procedure

It is suggested here the assumption made here should be tested. First, in post traumatic disorder and related problems, conditioned fear results from exposure to aversive stimuli. Second, the firings at the subcortical level preempt and overwhelm the frontal-lobe function and, consequently, the sufferer. Third, Power Therapies may compete with and successfully interfere with the overwhelming emotional responses. Fourth, the specific actions in the therapies delay the conditioned stimuli from directly eliciting fears and phobias until the frontal lobes can perform their interpretive function.

In summary and conclusion, given the crucial emphasis placed on technique by the originators, proponents, and practitioners of these therapies, in order to test the hypothesis presented here concerning the reason(s) for the effectiveness of these therapies, one will need to: a) Examine analyze each therapy's entire protocol, except for the specific prescribed sensory-motor activity, such as eye-movement and/or tapping, and b) Carry out the steps (e.g., eye-movement or tapping, etc.) at non-prescribed points in the procedure for one set of problems and prescribed points for a second set of problems per patient. This multiple base line design will allow for a test of relative efficacy of prescribed points. Also, it will allow for a test the level of brain activity at which these procedures are effective.

Additionally, the use of brain-imaging technologies would serve to objectively confirm or disconfirm the collection of SUDS ratings and changes effected by various treatments.

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Volume 6, Issue 2, Article 5 (August 2000)

Bron: http://www.fsu.edu/~trauma/v6i2/v6i2a5.htm