Eye Movement Desensitization Reprocessing: The Linguistic Analysis of a Treatment of Posttraumatic Stress Disorder in a Soldier

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Abstract

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An attempt was made in this case study to assess the Referential Process, a set of phases that illustrate the process of how individuals place words upon conscious and unconscious non-verbal experiences, in an EMDR treatment of a veteran. The Referential Process was assessed by shifts in scores of three measures, Referential Activity (WRAD), Reflection, and Disfluency, as captured by a computerized linguistic program. The shifts among the measures were used to guide a qualitative description of the process in an effective treatment of a veteran with PTSD. This is the first study to examine levels of referential activity and the referential process in an EMDR treatment and more generally referential activity in any trauma focused treatment. Additionally, whereas most EMDR studies have focused upon one trauma incident, this study adds to the growing, but limited, literature of EMDR treatment in the military population with numerous trauma memories. With the two objectives in mind, the recorded sessions were transcribed and coded and a computerized linguistic and qualitative analysis was applied to 10 sessions of a 12 session EMDR treatment.

The patient exhibited high referential activity as measured by WRAD levels, when compared to other psychotherapy samples, which indicates that he was immersed in the narrative for much of the treatment. The high WRAD levels may be attributed to the treatment task of

EMDR. An examination of the high WRAD narratives suggests that the WRAD measure may require further examination in trauma populations to decipher if the speaker is immersed in or reliving the narrative. The interaction between WRAD and Reflection in the Referential Process appears important in trauma processing and may relate to the significance of distancing (versus reliving) fostered by the EMDR protocol. The qualitative analysis revealed shifts in the veteran's schema as depicted by changes in: the therapeutic relationship, his negative cognitions about himself and patient reports of relationship with others.

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Introduction

Eye movement desensitization reprocessing (EMDR) is a short-term, effective treatment for posttraumatic stress disorder (Foa, Keane & Friedman, 2000; Chambless, Baker & Baucom, 1998; APA, 2004; NICE, 2005). It is based upon the Accelerated Information Processing (AIP) model, which posits that in the event of trauma, normative cognitive and neurological processes become overwhelmed, rendering memories inadequately processed and encoded in state specific form, within isolated networks (Shapiro, 2001). EMDR is believed to promote "the activation of images and thoughts with only weak associations to core elements of the trauma" (Van der Kolk, 2002, p. 78) and integrate isolated trauma material into broader neural networks (Shapiro, 2001).

Studies that illustrate the effectiveness of EMDR in treating posttraumatic stress disorder (PTSD) are primarily based upon a civilian population with single trauma such as rape. While the effectiveness is evidenced, the underlying mechanisms of EMDR remain unclear (Gunter & Bodner, 2009). Additionally, there is a need for EMDR research with soldiers and veterans (Russell, 2006) a population with high rates of PTSD who often present for treatment with more than one trauma.

EMDR appears particularly well-suited to military personnel (Russell, 2006), who reside in a culture where psychotherapy is highly stigmatized and soldiers report that seeking mental health treatment is equated with "career suicide." Some of the reasons why EMDR treatment may be a good match for the soldiers are: a high percentage of symptom remission within merely three sessions (Fernandez, 2008), the

treatment protocol does not require extensive self-disclosure, and the explanatory approach is well received by soldiers, who often, more easily accept understanding emotional suffering when

framed in a matter of fact manner as within psychophysical terms (Russell, 2008). Further research is needed to examine EMDR treatment among soldiers with PTSD and more than one trauma and explicate the underlying processes of working through trauma.

Analysis of narrative provides an avenue with which to gain insight into the internal processes of working through trauma (Pennebaker & Seagal, 1999; Capps & Bonanno, 2000). To shed light on these processes, this study will use the Discourse Attributes Analysis Program (DAAP), a computerized program, to conduct linguistic analyses. Studies using the DAAP have repeatedly demonstrated patterns in linguistic analyses that are believed to reflect links between types of language and respective underlying psychological processes (Bucci & Maskit, 2007). The DAAP is based upon Multiple Code Theory (Bucci & Maskit, 2006), which offers a framework to explain emotional processing. It proposes that information is encoded in three modes: subsymbolic, non-verbal symbolic and verbal symbolic and that communication is fostered through referential links among the three modes. Narrative process encourages the adaptive and necessary integration of the three (Bucci, 1997).

In this study, the DAAP was applied to the verbatim EMDR treatment of a veteran who presented with PTSD and multiple traumas for the first time. The nature of the data, a short, 12 session, successful treatment of PTSD lends itself well to a thorough microanalysis. The data from the DAAP was presented in the context of a qualitative description of the treatment process with the veteran.

Chapter I: Literature Review

Posttraumatic Stress Disorder: An Introduction

Studies indicate that by adulthood most people experience at least one event that may induce traumatic implications (Kessler, Sonnega, Bromet & Hughes, 1995; Litz, 1996). An experience is defined as "*traumatic* when it defines the way people organize their subsequent perceptions" (van der Kolk, 2002, p. 60). Exposure to trauma permeates multiple levels of functioning including psychological (Herman, 1992), biological (Friedman, Charney & Deutsch, 1995; van der Kolk, 1994), social (Kulka, Schlenger, Fairbank et. al., 1990) and spiritual (van der Kolk & McFarlane, 2007). Experience of short-term symptoms and decrease in functioning is common; however, humans have a tendency to be resilient (Bonanno, 2005) and only a small percentage of individuals develop more severe, chronic symptoms which meet criteria for PTSD (Kessler, Sonnega Bromet & Hughes, 1995; Bonanno, Galea, Bucciarelli & Vlahov, 2006; Shalev, 2002). However, statistics capture the stark reality that in certain contexts, such as military service, where exposure to traumatic events is ongoing, stress levels are chronically high, and dearth of mental health access prevails, rates are significantly higher. While lifetime prevalence of PTSD among adult Americans is 6.8% (NCS, 2005), prevalence among Gulf War veterans was reported as 12.2% (Kang, Natelson, Mahan, Lee, & Murphy, 2003) and 13.8% among a sample of veterans deployed to Iraq and Afghanistan (Tanielian, 2008).

Uncharacteristic of DSM, the PTSD diagnostic criteria rely on specificity regarding a known, external event.

(1) The person has experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others. (2) The person's response involved intense fear, helplessness, or horror (APA, 2000, p. 467).

Although debates about defining and diagnosing PTSD have been ongoing (e.g. Davidson and Foa, 1991, Rubin, Berntsen & Bohni, 2008), the currently accepted criteria for PTSD symptoms are organized into three categories: (1) intrusive re-experiencing of the event (e.g. flashback, nightmares, intrusive thoughts, emotional and physiological distress when confronted by reminders of the event), (2) avoidance/numbing regarding stimuli associated with the event (e.g. avoidance of thoughts, feelings and conversations of the event, inability to recall aspects of the event, diminished interest in formerly pleasurable experiences, feelings of detachment, restricted range of affect and sense of foreshortened future) and (3) symptoms of hyper-arousal (e.g. difficulty with sleep, increased irritability, difficulties with concentration, hypervigalance and heightened startle response). If criteria within these categories are experienced for more than one month and cause significant distress or impairment in social occupational or other important areas of functioning, a diagnosis of PTSD may apply (APA, 2000).

While the fields of psychology and neuroscience continue to broaden our understanding of PTSD, a meta-analysis of psychotherapy for the disorder indicated that approximately 50% of individuals who commence treatment fail to fully recover (Bradley, Greene, Russ, Dutra, & Westen, 2005); however, proponents of EMDR have reported high rates of recovery, particularly from Big T traumas (Chemtob, Tolin, van der Kolk & Pittman, 2000) and within significantly fewer sessions than exposure-based treatments with similar outcomes (van Etten & Taylor, 1998). Therefore, EMDR deserves the attention of researchers to uncover its precise, underlying mechanisms and highlight which elements of the effective treatment may be extrapolated and offer insight to survivors, clinicians and researchers in healing trauma. The close analysis of a case study undertaken in this project was intended to deepen understanding of the trauma recovery process.

Trauma and Processing of Memories

Distressing memories are the hallmark of PTSD (Hopper & van der Kolk, 2001). Since a central tenet of the treatment examined in this study, EMDR, is exposing patients to memories of their trauma (Chemtob, Tolin, van der Kolk & Pitman, 2000) the following section will describe the literature on trauma and memory processing.

Clinicians and researchers have been grappling with how traumatic memories are processed and the differences between ordinary and traumatic memories for over a century (see for example, Breuer & Freud, 1893; Janet, 1889; Janet, 1898). Until relatively recently, memories of traumatic events, unlike memories of non-disturbing experiences, were believed to remain fixed, unchanged (Hermann, 1992; van der Kolk, & Fisler, 1995; van der Kolk & van der Hart, 1991; McCloskey, Wible, & Cohen, 1998). While the changing, non-static nature of ordinary memories has been clearly illustrated (Schacter, 2001) evidence has emerged that memories of trauma too are not static, but shift over time (van Giezen, Arensman, Spinhoven & Wolters, 2005) so that the same mechanisms may well underlie the processing of both ordinary and traumatic memories. Furthermore, recollection of disturbing events is influenced by one's psychological state at the time (Cohen, Towbes, & Flocco, 1988) and while memories recalled by an individual of one event may at times evoke intense emotion, at other times it may be recalled with very little affect (Horowitz and Reidbord, 1992 as in Brewin, 2001). Additionally, investigations (King, King, Erickson, Huang, Sharkansky & Wolfe, 2000; Koenen, Stellman, Dohrenwend, Sommer & Stellman, 2007) suggest that individuals diagnosed with PTSD are likely to display variations in reporting, which become increasingly more disturbing over time. Such findings have led to debates about DSM diagnosis, controversy about treatment

implications for trauma and newly developed models to conceptualize the workings of memory (van der Kolk & van der Hart, 1991; Brewin, Dalgleish, & Joseph, 1996; Brewin, 2001; Rubin, 2008).

Janet (1889) posited that humans utilized at least two different memory systems when processing disturbing experiences (van der Kolk, 2002). Almost a century later, Brewin and colleagues (1996) fostered a *dual* system model for traumatic memories. In their examination of emotion and memory Brewin and colleagues have turned to study PTSD and proposed a model for memory processing which comprises two interacting systems, the Verbally Accessible Memory (VAM) and the Situationally Accessible Memory (SAM) wherein one traumatic event is encoded in both systems resulting in two forms of emotional memory (Brewin, et al., 1996). The VAM, based in the hippocampus, contains narrative and inherently conscious memory. This part of the memory system houses "a series of autobiographical memories that can be deliberately and progressively edited" (Brewin, et al., 1996, p. 677). The SAM, related to operations of the amygdala, contains a different set of representations, memories primarily outside of one's awareness (Brewin, et al., 1996). The SAM also contains material that emerges in flashback memories (Reynolds & Brewin, 1999), evoked automatically by internal or external cues (Brewin, 2001).

Brewin's (2001) work suggests that the likelihood of a traumatic memory to worsen or become less intense depends, in part, on which of the two memory systems is more stimulated. While the VAM is able to encode spatial and temporal context, the SAM lacks such capacity. Consequently, the SAM system fails to discern whether the traumatic memory is linked to a present or past threat (Brewin, 2001). It is posited that the SAM system contains significantly more detail of the memory since in the VAM system an individual may only consciously process

limited information at a time and information processing during the traumatic event becomes quite narrowed, focusing on the presenting threat. From an evolutionary, survival, standpoint it is understandable that one would seek to encode as much information as possible during a traumatic event in order to develop protective mechanisms against impending threats to survival (Brewin, 2001). The developers of the dual memory system theory maintain that after the traumatic event, flashbacks serve as a form in which to transfer information from the SAM to the VAM system (Brewin et al., 1996). As the information is adapted into the VAM system flashbacks subside.

While integration is the sought after outcome of emotional processing, Brewin and colleagues (1996) maintain that there are three potential outcomes when exposed to a traumatic event: completed processing/integration, chronic emotional processing and premature inhibition of processing. Completed processing "represents the ideal stage in which the memories of the trauma have been fully processed, or worked through, and integrated with the person's other memories and sense of self in the world" (Brewin et al., 1996, p. 679). Completed processing may not always be achieved for a myriad of reasons including but not limited to: the severity of the trauma, the chronic nature of the trauma, continuing confrontation with the real threat, devastating impact on sense of self and safety, and if the "discrepancy between the trauma and the prior assumptions is too great and the memories cannot be integrated" (p. 169). Chronic emotional processing occurs when the patient remains preoccupied and overwhelmed by the initial traumatic event and related outcomes which lead to exhibiting hallmarks of PTSD such as persistent heightened arousal and attention and memory biases. The chronicity of such processing often results in high co-morbidity of PTSD with depressive, anxiety and substance abuse disorders. Lastly, the premature inhibition processing occurs due to avoidance of verbally

and situationally accessible memories resulting from both psychological and social variables (Brewin, et al., 1996). Avoiding activation of both the SAM and VAM systems results in attentional biases, possibly impaired memory for the trauma or related stimuli, phobic avoidance of trauma-related situations and possible evidence of somatization. Although the individual may appear to have recovered from the trauma due to successful avoidance tactics, the unprocessed memories remain vulnerable to stimulation at another point. Additionally, the detrimental psychological and physiological consequences of not expressing intense affect have been clearly illustrated (Pennebaker, Kiecolt-Glaser & Glaser, 1988 as in Brewin 2001).

Multiple Code Theory

The multiple code theory (Bucci, 1997; Bucci, 2002; Bucci, 2003; Bucci, 2005, Bucci, 2007) offers a framework to explicate emotional processing. It accounts for a range of functioning, adaptive to pathological, and seeks to further our insight into the multiple processes that underlie the nonverbal and verbal realms and the implications when modes succeed or fail to integrate. The theory developed from Wilma Bucci's earlier work (Bucci, 1982; Paivio 1971, 1986) on Dual Code Theory where she examined the characteristics of linguistic expression as an avenue to understanding emotions. While Dual Code Theory established the verbal and non-verbal modes, multiple code theory elaborates upon the complexity of internal emotional processing by distinguishing between symbolic and subsymbolic and highlighting the significance of links among the systems. Bucci proposes that information is encoded in three modes: subsymbolic, non-verbal symbolic and verbal symbolic and that communication is fostered through "referential links" among the three modes. Narrative process fosters the adaptive and necessary integration of the three (1997).

The subsymbolic system is the main area in which emotional communication occurs (2007). The subsymbolic system is most familiar experientially, known as intuition and "the wisdom of the body" (2007, p. 171), and entails continuous or analogic processing. It is less recognized theoretically (2007) while the symbolic system relies upon "discrete representational entities" (p.170). The subsymbolic comprises motoric, visceral and sensory processes and may be experienced in all senses but emerges most commonly in taste, smell and touch. Subsymbolic processes may occur inside or more commonly outside of immediate awareness and are necessary for the coordination of hitting a tennis ball, knowing our bodily states, and recognizing the facial expressions and body language of others' in our own visceral state (Bucci, 1994). These processes are necessary for "listening with the third ear" (Reik, 1948, as in Bucci, 2007, p. 171) and the therapeutic moments when the therapist has an implicit knowledge of how to respond to the patient.

> The analyst is able to make fine distinctions among a patient's states, including distinctions on sensory and bodily levels, sometimes using his own feelings as indicators, and without being able to express those feelings in words (Bucci, 1997 p. 159).

While these processes occur rapidly, feel implicit, and are processed without discrete categories, there is nevertheless a structured system upon which they operate (Bucci, 1994). Bucci distinguishes subsymbolic processes from psychoanalytic conceptualizations of primary process in that the latter is chaotic, indicative of primitive internal operations and separate from reality. Subsymbolic processes are: "organized, systematic, rational forms of thought that continue to grow in complexity and scope throughout life" (Bucci 2007, p. 170). The subsymbolic mode model relies heavily on systems offered by cognitive researchers (McClelland, Rumelhart & Hinton, 1989). These researchers developed the Parallel Distributed Processing (PDP) system and contended that activation of parallel neural networks occurs

simultaneously. The nature of the activation is reliant on interconnected sets of nodes in different states of arousal. Interaction and feedback among the sets of nodes is ongoing where new input is continually influenced by activation levels of the neural networks.

Symbolic Processing

While the subsymbolic entails continuous shifts, the symbolic system differs profoundly in that the symbols are discrete entities and adhere to processing rules which are explicit (Bucci, 1997 p. 159). Symbols are: "discrete entities that refer to other entities and that can be combined to generate an infinite variety of new forms" (Bucci, 2005, p. 858). Symbolic processing falls into two categories: nonverbal and verbal, manifesting in images and words respectively where infinite versions of images and meanings may be developed. The symbolic processing occurs in sensory experiences such as sight, touch, and sound but sight is most typically the one within our awareness. Bucci distinguishes imagery from words in that we have much more control over words, which are: "the quintessential symbolic form" (2001, p. 47); however, images are crucial in that they are required for the connection between the subsymbolic nonverbal and symbolic verbal codes. Bucci maintains that language is primarily linear in that we produce and comprehend one message at a time. Language offers a mode through which humans share and reveal themselves, regulate themselves, and communicate knowledge of a broader culture (1997).

Emotion Schemas

Emotion schemas, a type of memory schema, develop over repeated interactions with caretakers from birth (Bucci, 1997) and create the framework for each individual's interpersonal world. They form the expectations we have of others and how others perceive us and consequently they develop the foundation for one's sense of self (Bucci, 2005). The emergence

of emotion schemas occurs within the nonverbal system, prior to the development of language and gradually becomes linked with language (Bucci, 1997). Emotion schemas are developed from all three modes; however, the sensory and bodily representations predominate. The affective core of the emotional schema, comprised of the subsymbolic sensory, somatic, and motoric representations, links images of one's experiences, and some language may be included later in the process (Bucci, 2005). The affective core is in a continuous process of organizing experiences into categories (Bucci, 2002). Bucci proposes that emotion schemas are not discrete entities with terms that merely name an emotion. For example, "We do not enter a state called "hatred"; rather, we may have an intense desire to hurt a particular person who is seen to play a role in a particular scenario" (Bucci, 2005, p. 860). The word angry or happy serves as a label so the incident may be classified, but the nuances of the experience and the particular emotional experience are unique to the individual.

The emotion schema informs how humans make sense of new experiences (Bucci, 1995) and this phenomenon sheds light on the transference-countertransference phenomenon (Bucci, 2005). While each individual has developed a schema tailored to his repeated interactions, schemas have the capacity to be changed, although there is a quality of rigidity in pathological conditions (Bucci, 2005).

Referential Process

The referential process operates continuously throughout the referential cycle and serves to connect the three modes of the multiple code theory. The integration that occurs in the referential process allows humans to place words upon non-verbal experiences and especially emotional experiences (1994). The power of language to "activate emotion, to soothe pain, or to cause it, and the bidirectional relation between language and somatic events, is accounted for by

this process" (1994, p. 245). While it typically occurs without work, obstacles arise when trying to verbalize a new experience (Bucci, 2003). Even in more ideal conditions, without resistance and defense, the referential process may never completely be achieved (1997).

Referential Process in Psychotherapy

The three phases of the referential process, arousal, symbolizing and reorganizing are described below. The process occurs repeatedly within session and throughout the arc of the entire treatment. The phases may occur in various chronology and some phases may be more central than others depending on the case (Bucci, 2007). When therapeutic process is blocked the referential process is stagnated. For example, a patient may be stuck in the arousal phase.

Phase one

Arousal, the first phase occurs in the present moment during a session and is marked by the activation of the "affective core", subsymbolic bodily and sensory elements of a disturbing or dissociated emotion schema. During this phase the patient naturally experiences defenses to guard against the distressing affect.

Phase Two

In the context of phase two, called symbolizing, the subsymbolic affective experience is linked to images and words of the symbolic mode. The integration of (1) representations of interactions in the here-and-now, with the therapist, and (2) verbal narratives of experiences or dreams accounts for two main lenses with which to view the activated schemas. Bucci (2007) elucidates the significance of this phase in treatment.

> This is the pivotal integrative process of the psychological cure. The connections of self and other, past and present, require representation of specific events in a time and place context— what cognitive scientists and neuroscientists refer to as event specific knowledge or episodic memories, in contrast to general or semantic memory. Specific events in narratives or enactments are powerful cognitive-emotional operations whose neuropsychological base is now fairly well understood. They are experienced and processed in multiple systems, including all sensory modalities, motoric actions, and visceral and autonomic systems; they also potentially connect, through hippocampal

and other neural routes, to the cortical association areas, activating memories of the past and enabling connections to language (Rubin 2005; Damasio 1999; Moskovitch et al. 2000).

Phase Three

Lastly, during phase three, reorganizing, the individual conveys the experience of images and actions in the verbal form, words (Bucci, 1997; Bucci, 2007). The patient becomes able to reflect about narrative content in the therapeutic context, gains insight linked to his affect, and a shift in the disturbing schema becomes reorganized. Bucci recognized that each treatment model will highlight its own perspective on this shift. In EMDR, Shapiro (2001) contends that the shift is an experience of change in the traumatic memory linking to more adaptive networks. Bucci offers that regardless of what is highlighted in each treatment approach, all patients will experience a shift that becomes explicit and some level of verbalization will take place. Some examples of such shifts are: understanding that the current experience differs from the past, gaining insight into one's emotional experience, recognizing that one's abilities to cope have changed.

The process of attending to subsymbolic imagery while simultaneously placing words upon one's experience fosters potential shifts in the experience, the emotional schema (Bucci, 1997). Similarly, as will be discussed , (see section on Eight Phases of EMDR, Chapter I, page 16), in the EMDR protocol, the patient is instructed to attend to imagery while selecting a verbal cognition to keep in mind. Referential connections are most direct and at highest activity level when the individual is speaking about concrete, specific things such as: "Beth", "the wooden table". In step, the less direct and active connections occur when the individual tries to convey something more nuanced such as: a facial expression or the experience of listening to a song. Consequently, the connections are less direct in subsymbolic processes. In considering of the bidirectionality of the referential activity, connections from the verbal to nonverbal system is less

direct when speaking in the abstract, using words such as: “truth” or “injustice”. The meaning of these words is embedded in connections to other words and earlier nonverbal symbols (1997).

Eye Movement Desensitization Reprocessing: The Eight Phases

EMDR is composed of eight phases. The pace of each, and therefore the number of sessions that the patient remains in each phase, varies (Shapiro, 1995). The treatment model outlined below contains elements of various psychotherapy orientations and has been integrated into treatments that exhibit primarily psychodynamic or cognitive behavioral and many other approaches depending on the clinician.

Phase 1: Client History and Treatment Planning

The goal of phase one is to determine, through screening, whether a patient may benefit from the treatment. Screening entails assessing a patient’s physical ability (e.g. cardiac and respiratory condition) and emotional ability to cope with high levels of disturbance. In the event that current stressors appear overwhelming, treatment commencement may be delayed. If the therapist determines the patient will benefit from EMDR, treatment goals are established. During the history taking, the patient and therapist focus on the presenting problem, related behaviors and symptoms, and positive behaviors and attitudes that may aid the recovery. Inquiry into understanding the patient’s resources and support systems informs the process of stabilizing the patient throughout the treatment. Ongoing stabilization and integration is necessary for EMDR’s effectiveness (Herman, 1992; Shapiro, 1995, 2001). If secondary gains are emerging from the presenting problem, a concrete plan is delineated. While patient history and treatment goal development are ongoing throughout the treatment, the initial phase typically occurs within 1-2 sessions and focus is placed on one dysfunctional memory. Although it is not required to address

each of the patient's traumatic memories regarding a repeated experience such as sexual abuse by the same perpetrator, it is necessary to treat each traumatic event separately (i.e. each perpetrator). The decision of which traumatic memories to treat varies based upon the patient's particular history (Shapiro 1995; Shapiro, 2001). A "three pronged approach which evaluates past, present and future targets is used" (Shapiro, 2001).

Phase 2: Preparation

The primary aim of the second phase, typically, 1-4 sessions, is to establish and strengthen therapeutic alliance and orient the patient to the treatment process highlighting the active participation of the patient, determine patient expectations and address concerns, provide psychoeducation about the presenting problem and teach the patient to call upon coping skills in order to address the disturbance as it arises. Patients are provided with an audiotape of guided relaxation techniques (e.g. "Safe Place" and "Lightstream"), which quickly eliminates negative somatic experiences, to employ before each session and in between sessions as needed (Shapiro, 2001). The internal resources and support systems identified in phase one are strengthened at times through activities such as evoking and processing positive memories with EMDR.

The therapist teaches the patient techniques such as the use of metaphors. For example, patients might be asked by the therapist to

> (a)…imagine themselves being on a train and to think of the disturbance they may be experiencing as merely the scenery passing by (b) to maintain a balance between the role of observer and participant and (c) when necessary to use a "stop signal", in order to provide them with a sense of mastery over the events and feelings that are taking place during a treatment session (Shapiro, 2002, p.34).

Phase 3: Assessment

The third phase entails the therapist and patient collaborating to identify the target issue- the specific memory, its respective trigger, a future template (e.g. selecting a positive cognition that reflects a healthy self-image), and then establishing baseline responses. The VoC scale, a seven point Likert Scale which ranges from "completely false" to "completely true," is used throughout the treatment to develop a baseline and assess therapeutic progress. The patient is asked to identify the sensory image that captures the target issue. The approach ascribes several significant factors to identifying the most salient image associated with the event: it serves as an easily accessible representation of the encoded experience associated to the patient's fears and it is a "circumscribed representation of the target" (Shapiro, 2002, p. 35). The representation in this form facilitates greater ease in fostering psychological equilibrium when utilizing the coping skills. Next, the therapist works with the patient to access part of the verbal processes by selecting a negative cognition that reflects maladaptive beliefs impacting his present day experience. For instance, "I'm helpless". The therapist aims to shed light on how the cognitive interpretation is no longer relevant rendering it "irrational". The approach notes the importance of placing words on what had once only manifested as "speechless terror" (Rauch et al., 1996 as in Shapiro, 2002, p.36).

During this phase a positive cognition, which incorporates an internal locus of control (Shaprio, 1995) is developed that will be utilized in subsequent phases to replace the negative cognition. For instance, a patient might offer: "I'm now in control". The most effective positive cognitions are (1) malleable and generalizable to a range of associated information and (2) feel relevant to the patient's daily experience (Shapiro 1995, 2001). The positive cognition is

identified to pose another option with which to respond to the negative cognition. The approach posits that the positive cognition offers hope for what may emerge at the end of the treatment and motivation to continue despite the impending challenges. In order to determine the relevance of the selected cognition the VoC scale is used whereby the patient is asked to assess how true the positive cognition feels.

EMDR recognizes that the intellectual and verbal processes differ from the pre-verbal so that the patient is directed to judge the feeling on a "gut", subsymbolic level. The therapist then proceeds to pair the image and the negative belief to enhance patient's access to the encoded traumatic material. The patient is instructed to notice his emotion and the location of the physical sensation. The emotional intensity is assessed using Wolpe's (1958) SUD measure, a Likert scale from 0 to 10, ranging from no disturbance to the worst disturbance imagined.

Locating one's physical sensation as the traumatic memory is recalled is central to the treatment model. Shapiro (2002, p.37): "It appears that there is a physical resonance to the cognitive process that can serve to focus clients' attention and expedite processing."

Phase 4: Desensitization

This phase was coined desentisization because in the early treatment model desensitization to psychological disturbance was emphasized (Shapiro, 1989); however, over time the treatment has progressed to an information-processing model and discovery of treatment effects in other realms (cognitive, somatic, affective) emerged as illustrated in this phase of treatment (Shapiro, 2002).

The dual-attention stimulation is introduced in this phase and continues throughout the next three. The stimulation may be invoked with repeated eye movements, tones or taps while patients focus on the earlier identified specific image and negative cognition and on physical sensations that arise. Access to the stored traumatic experience begins. The tone of the therapist is intended to diminish patient performance anxiety and establish a setting conducive to free associations so that the most salient traumatic stored experience arises naturally (Rogers & Silver, 2002; Shapiro, 1995, 2001). Therapist instructions take on that of an acceptance and openness to "notice", to "let whatever happens happen". Following a set of dual-attention stimulation, the patient is instructed to "Let it go and take a deep breath. What do you get now?" (Shapiro, 2002, p.38). Shapiro (2001) contends that this step allows the patient to gain a sense of mastery over the emotional target and the physical aspect, the deep breath, serves to momentarily distract the patient from the traumatic material so that he may access the verbalizing processes. The therapist continually assesses the verbal and non-verbal responses and tailors the duration and frequency of repetitions accordingly. Mid session progress is assessed by shifts in reported images, thoughts, physical sensations, and by relying on the SUD level. Stress levels are ascertained using quantitative and qualitative measurements to ensure that the positive cognition is not introduced before sufficient processing of the traumatic material is completed (Shapiro, 1995, 2001).

Phase 5: Installation

The emphasis during this phase is on installing and increasing the strength of a positive cognition, selected by the patient, to replace the predominant negative cognition and enhance the patient's self-efficacy and self-esteem, which is deemed crucial for positive therapeutic effect

(Shapiro, 2001). Once the level of emotional intensity is down to 1 or 0 on the SUD scale, the patient pairs the positive cognition with the image of the traumatic memory. The level of treatment effect is measured by using the VoC scale to indicate the extent to which the patient believes the positive cognition. The therapist repeats the set pairing the positive cognition and the image as the patient experiences the positive image in an increasingly vivid and valid manner. Shapiro (1995, 2001) contends that the positive cognition is eventually integrated and generalized into the memory network. While the maintenance of the negative cognition indicates unresolved trauma, more adequately processed material includes positive cognition and appropriate affect (Shapiro, 2001).

Phase Six: Body Scan

Physical resonance to the dysfunctional material emerges related to the original physiological encoding of the trauma. During this phase the patient is requested to scan his body from top to bottom while simultaneously keeping in mind the traumatic event and the positive cognition. The tension is noted and while in some instances the mere identification process allows it to resolve, other sensations need to be targeted for successive sets. This nonverbal nature of this phase has been known to reveal tension and resistance that were formerly undetectable. The significance of the sensations is central as indicated by the fact that only once all the disturbing body sensations are eliminated is the treatment complete.

Phase Seven: Closure

The debriefing with the therapist, stabilizing techniques, and psychoeducation provided in this phase are implemented at the close of every session to ensure that the patient is returned to

a state of emotional equilibrium, regardless of whether processing reached completion. The therapist reiterates the normative process that occurs in between sessions when disturbing images, thoughts and feelings may emerge. In between sessions, patients engage in CBT-like activities in which they identify and record reaction patterns and implement the self-control techniques learned in Phase 2, which foster self-mastery (Shapiro, 2001). The patient is instructed to maintain a journal of negative and positive cognitions, experiences, dreams and memories which Shapiro contends aids "to cognitively distance herself from the emotional disturbance through the act of writing" (2001, p.75). A visualization technique is also suggested by which the patient "takes a snap shot" of the disturbance which will become a target in the treatment. Daily relaxation or guided imagery techniques are employed, at times utilizing pre-recorded audiotapes, which assist in developing a baseline of relaxation and diminish physiological arousal associated with the trauma (Shapiro, 2002, p.41).

Phase Eight: Re-evaluation

Each session begins with the elements of this phase to serve as an assessment of treatment maintenance and identify potentially new targets for processing. Patients reflect on targets addressed in prior sessions and review the journal logs to collaboratively decide whether further processing is necessary. Both intrapsychic and systems factors are considered to determine the level of processing integration achieved. If new behaviors arise in response to the processed material addressing them is prioritized.

Adaptive Information Processing Model and Hypothesized Underlying Mechanisms:

The EMDR approach is informed by the adaptive information-processing (AIP) model (Shapiro, 1995, 2001, 2006; Shapiro et al., 2007) formerly referred to as the accelerated information-processing model (Shapiro, 1995). The AIP model is presented (Shapiro, 2001) as:

> a working neurophysiological *hypothesis* because current understanding of brain physiology is not yet sufficient to verify its accuracy. However, because this model is based on observed treatment effects, it can serve as a clinical road map that is both explanatory and predictive, even if it turns out that the neurophysiological details of the hypothesis are incorrect. (p. 54)

The AIP theory presumes that everyone has the capacity to process and resolve non-dysfunctional experiences through an "innate physiological system that is designed to transform disturbing input into an adaptive resolution and a psychologically health integration" (Shapiro, 2001, p. 54). Memories are woven in networks that contain related thoughts, images, somatic and other perceptual experiences where new perceptions of present events are automatically linked with associated memory networks (Buchanon, 2007 as in Solomon, 2008). The information system processes the elements of one's experiences and stores memories in an integrated and accessible manner.

Daily emotional disturbances are processed and resolved, but in the event of a traumatic experience the system may go awry, leading associated information to remain static, as exemplified by symptoms of individuals with PTSD. The premise of the model is that perceptions at the time when memories are stored in distressing, state-specific form continue to be triggered by internal and external stimuli. Such encoding leads to dysfunctionally stored, not properly processed memories, where pathology is reflected in maladaptive patterns of affect, behavior, cognition and resulting identity structures (Shapiro, 2001).

Within the AIP model, a patient's presenting symptoms are understood as resulting from the activation of inadequately processed and stored memories. Shapiro emphasizes that affects, sensations and attitudes are reflections of physiologically stored perceptions and one's respective response, not merely direct reactions to past events.

EMDR aims to facilitate processing traumatic memories, contained in state-specific form in the nervous system, into broader adaptive networks (Solomon &Shapiro, 2008). Vander Kolk and colleagues (2001) elaborate on this state of "neurobiological stasis" (Shapiro, 2001, p.32) wherein the neurological connections typically called upon to resolve the disturbance fail to interact.

Solomon and Shapiro (2008) suggest that the AIP model is supported by neurobiological theories regarding reconsolidation of memory, which indicate a newly accessed memory may become malleable and re-stored in a new form (Cahill & McGaugh, 1998; Suzuki, 2004). They highlight the distinction between the neurobiological mechanisms of reconsolidation and extinction, which operate based upon different processes (Suzuki, 2004). While reconsolidation, a process hypothesized to occur in EMDR (Shapiro, Kaslow & Maxfield, 2007 as in Solomon et. al., 2008), entails the changing of the original memory, in extinction a new memory "competes with the old one" (Solomon et. al., 2008).

Information processing models related to "extinction-based exposure therapies" (Shapiro, 2008; Foa and McNally, 1996) maintain the central tenet to be the shift in cognitive appraisal of the trauma and behavior change via exposure to the material in a safe environment; however, the AIP model presents this shift as merely a by-product of processing. The integration of adaptive information to already familiar, previously stored information in the brain is deemed the mechanism of change (Solomon & Shapiro, 2008).

Several hypotheses as to the mechanism by which information-processing becomes uninhibited physiologically through stimulation have been developed over the past two decades. Initially, Shapiro (2001) presented the following: deconditioning elicited by a forced relaxation response (Shapiro, 1989; Wilson, 1996); a transformation in brain state which activates and bolsters the weak associations (Stickgold, 2002); or an unknown function of the dual-focus information processing mechanism (2001, p. 55). In 2009, Gunter and Bodner presented four treatment mechanisms which elaborate upon those Shapiro (2001) initially presented and posited that numerous mechanisms may work in tandem that result in treatment gains so that an integrative model may be required to reflect its complexity. The hypotheses are as follows: (1) shift of trauma recollection in working memory (Shapiro 2001; Gunter & Bodner, 2009; Schubert & Lee 2009); (2) greater psychological distance from trauma; (3) enhanced inter-hemispheric communication; and (4) "psychophysiological changes associated with relaxation or evocation of a rapid-eye-movement-like brain state" (Gunter & Bodner, 2009, p.161).

PTSD and EMDR: Examining Efficacy

At its inception EMDR was used to treat trauma (Shapiro, 1989) and over time the treatment protocol has been used to treat a wide variety of disorders, including but not limited to dissociative disorders, substance abuse and personality disorders (Sikes &Sikes, 2003) and to enhance athletic performance in subjects, even in the absence of psychopathology (Gracheck, 2011). Controversy over its efficacy for treating some disorders still persists; however, general consensus now prevails among both proponents and critics that EMDR is among several effective treatments for PTSD (Perkins & Rouanzoin, 2002; Sikes & Sikes, 2003; Bisson et al., 2007; Lilienfeld, 2009 as in Britt, 2009). A decade after Shapiro's (1989) first study, it has been

approved as an effective trauma treatment by established organizations including the American Psychiatric Association (2004), the U.S. Department of Veterans Affairs and the Department of Defense (2004), the International Society for Traumatic Stress Studies (Foa, Keane & Friedman, 2000; Chambless et al., 1998) and the U. K. National Institute for Health and Clinical Excellence (2005).

Inconsistencies in the research findings are rampant (Sikes & Sikes, 2003) and reviews of the research are strikingly polarized (Greenwald, 1996; Nowill, 2010). This debate over EMDR has fostered a vast body of research. In fact, EMDR is among the most widely researched treatments. The body of research on EMDR spans twenty years and may be divided into three phases: debates over effectiveness in treating PTSD, resulting in consensus on efficacy; comparing efficacy with other trauma treatments for PTSD; and examining hypotheses as to the underlying mechanism(s) of EMDR, which remain inconclusive (Schubert & Lee, 2009).

EMDR has engendered diverse responses, among them strong criticism (Herbert et al., 2000; Lilienfeld, 1996; Greenwald, 1996). It appears the wide range of research findings and responses, from proponents and critics, stemmed from a myriad of interacting factors: Firstly, as Shapiro has argued (Britt, 2011) the new kid (therapy) on the block always receives scrutiny. Moreover, this scrutiny was exacerbated by the pace at which EMDR was introduced into the field, wherein approximately fifteen thousand therapists were trained within five years and by the prematurely "overstated", zealous language (Lilienfeld, 2009 as in Britt, 2009) and "commercial promotion" (Herbert, Lilienfeld, Lohr et al., 2000, p. 954) in the context of quick adoption of the treatment. Additionally, several scientifically measurable factors about the EMDR research emerged, which called into question findings referenced by both proponents and/or opponents: some studies demonstrated severe design limitations (Herbert et al., 2000; Perkins & Rouanzoin,

2002) and some outcome research exhibited inadequate treatment fidelity. However, a review of the studies indicated that higher EMDR treatment fidelity resulted in better efficacy outcome measures (Maxfield & Hyer, 2002). Lastly, a critical evaluation examining research on EMDR concluded that there was inaccurate and selective reporting of findings from both opponents and proponents of EMDR (Perkins & Rouanzoin, 2002).

After the first decade of research, a review of EMDR literature (McNally, 1999) purported that EMDR operated on a placebo effect. However, McNally failed to include several studies of subjects with PTSD, designed with wait-list control groups, which evidence EMDR to be more effective (Rothbaum, 1997; Wilson, Becker & Tinker, 1997). Additionally, a meta-analysis of EMDR research (Van Etten & Taylor, 1998) demonstrated that effect sizes were larger among EMDR groups than those in control conditions such as a pill placebo. Research to date, demonstrating that EMDR treatment effects are larger and endure longer than placebo effects in PTSD, refutes the notion that EMDR operates simply as a placebo effect (Perkins & Rouanzoin, 2002).

Evidence indicates that EMDR has consistently better outcomes when compared to waitlist or delayed treatment controls among veterans (Boudewyns & Hyer, 1996; Jensen, 1994) and among civilians (Rothbaum, 1997; Hogeberg, Pagani, Sundin, Soares, Aberg- Wistedt, &Tarnell, et al., 2007). Randomized controlled studies comparing EMDR effectiveness to that of other PTSD treatments (Carlson, Chemtob, Rusnak, Hedlund, & Muraoka, 1998; Marcus, 1997; Scheck, Schaeffer & Gillette, 1998) suggested that EMDR is repeatedly more effective as reflected by the average effect size, 1.6 and 0.88 respectively (Schubert & Lee, 2009). While evidence of treatments gains among civilian patients who experienced a single trauma are clear, (Schubert & Lee, 2009) the research on veterans is more limited.

A central question in the body of research is whether or not the underlying mechanisms are based on novel discoveries or merely reflect similar processes as mobilized by exposure and cognitive therapies (Shalev, Friedman, Foa & Keane, 2000). Meta-analytic studies comparing the effectiveness of EMDR to exposure-based treatments indicate no significant difference in effect (Bisson et al., 2007; Bradley, Green, Russ, Dutra & Westen, 2005; Davidson et al., 2001; van Etten & Taylor, 1998). While acknowledging the evidence of EMDR efficacy in the treatment of PTSD, critics claim that EMDR is based upon the same principles as exposure based therapies and believe Shapiro and others falsely contend new principles underlie efficacy (Sikes and Sikes, 2003).

Proponents of EMDR highlight findings of several studies which distinguish EMDR from the exposure-based treatments. A meta-analytic study revealed that patients treated with EMDR necessitated fewer sessions, three to six sessions as opposed to 14 sessions of the exposure based treatment (Van Etten & Taylor, 1998). Additionally, research suggests that EMDR alleviated symptoms more rapidly than prolonged exposure (e.g. Ironson et al., 2002) and did not necessitate the homework hours required by exposure-based treatment (Rothbaum et al., 2005). In other words, similar outcome benefits were exhibited but findings suggest the recovery is more rapid and necessitates less treatment time with EMDR. Furthermore, Shapiro (2002) refuted claims that EMDR shares the same underlying mechanism as other exposure therapies as follows:

> The possibility that EMDR could be a "variant of exposure therapy" is of particular interest because EMDR's use of exposure is antithetical to traditional practice-it calls for interrupted rather than prolonged exposure with elements of free association (Rogers et al., 1999; Rogers & Silver, 2002; Shapiro 1995, 1999, 2001) both of which are inconsistent with the principle and practice long espoused in the exposure literature (Boudewyns & Hyer, 1990, 1996; Chaplin & Levine, 1981; Chemtob et al., 2000; Eysenck, 1979; Foa, Steketee & Rothbaum, 1989; Keane & Kaloupek, 1982; Lyons & Scotti, 1995; Marks, 1972; Marks et al., 1998; Rachman, 1978).

Therefore, if EMDR followed the principles of exposure therapies, the outcomes would be sensitizing rather than desensitizing patients, thus exacerbating their symptoms, and no research findings to date have provided such evidence (Perkins & Rouanzoin, 2002 as in Nowill, 2010).

Comparing Processing Models:

The AIP, Multiple Code Theory and Dual-Representation

The AIP model hypothesizes that through a successful treatment of PTSD with EMDR, integration occurs, fostering the traumatic memory to shift from its fragmented nature in somatosensory and affective aspects to greater valence in the verbal form (Shapiro, 2001). Similarly, Multiple Code Theory (Bucci, 1997) suggests that the transition from predominantly subsymbolic experience in the arousal phase to integration among subsymbolic and gradually verbal symbolic material in the reorganizing phase is reflected in therapeutic process research. The Dual-representation theory (Brewin, 1996) posits that communication links between the SAM and VAM encourage sensory information into the verbally accessible memory system. Through the process of EMDR, the intensity of a formerly intrusive, distressing memory decreases or even reaches a painless threshold so that when recalled it is no longer a threat and the patient feels a sense of mastery in his ability to stop the recollection without maladaptive avoidance (Hopper & van der Kolk, 2001). In discussing clinical implications of the proposed dual-representation memory system, Brewin and colleagues (2001) suggest that treatment should:

> pay deliberate and sustained attention to the content of their flashbacks, thereby encoding the new information into the VAM system. This process usually occurs as part of psychological therapies for PTSD such as prolonged exposure (Foa & Rothbaum, 1998), cognitive processing therapy (Resick & Schnicke, 1993), and eye-movement

> desensitization and reprocessing (EMDR) (Shapiro, 1995)…
> In its original form EMDR requires that patients focus on an image corresponding to the worst moment of their trauma, hold in mind a negative related thought, and monitor their mental processes as they follow the therapist's fingers with their eyes backwards and forwards. In all these forms of therapy it is common for patients to retrieve additional, unremembered details of their trauma.
>
> One implication of this model is that the goal of therapy is not necessarily to construct a detailed, organized trauma narrative, as has sometimes been suggested. Rather, the goal is to incorporate into a verbally accessible memory the set of detailed sensory information that, in conjunction with other cues, is effectively triggering flashbacks. For example, this may involve specific sights such as a pool of blood or specific sounds such as an ambulance siren. It is likely that the critical cues may be associated with the most intense frightening or horrifying moments of the trauma (sometimes referred to as 'hotspots'), when the ability to consciously register information was most impaired. A focus on these specific moments, as is done in EMDR and increasingly in cognitive-behavioural approaches, may be the most efficient way of abolishing flashbacks. (p. 162)

The notion that recovery from PTSD, relies upon some type of *integration* between the two systems (SAM and VAM) in the dual representation model (Brewin, 2001) is also noted in (1) the hypothesized process in the Shapiro's AIP model, where traumatic memories are assimilated into existing memory networks through treatment and (2) Multiple Code Theory, where integration between symbolic and subsymbolic modes is related to well-being. All three models converge in theorizing that (1) there are neural networks where material is stored (2) *links* among memory networks are crucial but inhibited in trauma, (3) the emotional impact of a traumatic event may interfere with the capacity to capture the experience in words or symbols and (4) somatic or symbolized memories from the trauma are evoked by heightened arousal, and retrieval of traumatic memories is more likely when one is in the state of mind experienced when the memory was first encoded (Rawlins, 1980 as in van der Kolk, 1994).

However, the three models diverge in either their explanation of the linking, integration process or the underlying mechanism. Bucci contends that narratives foster integration while

Brewin contends that flashback memories are the mode of integration. Furthermore, in the AIP model,

> it is assumed that processing new information in the therapeutic process aids in the *assimiliation* of the trauma memory into existing memory networks, it is assumed in dual-representation theory that the new information creates new memories that compete with the old trauma memories. This suggests an *extinction* mechanism over assimilation or reconsolidation of trauma memories (Schubert & Lee, 2009, p. 127)

As stated by Schubert and Lee (2009), while the AIP model is based upon a reconsolidation processing of the traumatic memory within one system, the dual representation model favors an extinction based processing of the traumatic memory. In EMDR, it is proposed that reconsolidation takes place over a short interval following memory reactivation. At this time, "the memory becomes labile and vulnerable to disruption" (Taylor, 2009, p. 186). Through pairing the most salient image of the traumatic event with cognitions during dual stimulation sets, the reconsolidation leads to decreased intensity when the traumatic material is evoked.

Chapter II: Methods

Data Set:

The data set is comprised of 10 of the 12 sessions of a single case of EMDR treatment of PTSD in a veteran. The data was accessed with the assistance of Dr. Paul Wachtel and Dr. Francine Shapiro and was made available to the researcher for this project through the therapist. The therapist provided informed consent to use the tapes for research on EMDR. The data set will be examined as discussed in the Procedure section below.

Subject:

At the time of treatment, the subject was a 29 year old, Caucasian, male, veteran, who recently returned from deployment in Iraq following exposure to an improvised explosive device (IED) blast, which resulted in a concussion (defined in the Veteran Affairs as a TBI, traumatic brain injury). No previous psychological treatment was reported. He had joint custody of two daughters with his ex-wife, and was in a long-term relationship with a female psychologist. The limited information about his childhood is as follows. He was one of two children raised by both his mother and a father who suffered from alcoholism. The patient recalled at least one incident of physical abuse at the hands of his father as well as chronic neglect. The older sister, who was often left to care for the patient in his youth, tormented the patient and threatened to kill him. At the age of 9 the patient reported moving into the upstairs apartment to live alone and at the age of 10, he reported becoming the primary caretaker for his three year old nephew.

Veterans are typically treated by a team of providers upon return from duty. As excerpts of the transcript narrative reveal, while the subject is receiving the EMDR treatment he is also attending occupational therapy and counseling for the TBI.

Measures:

Referential Activity and WRAD

Bucci has developed a set of scales that measure Referential Activity, one's ability to place words upon one's nonverbal experience (Bucci, 2001). The measure assesses four subscales: concreteness, imagery, specificity and clarity of speech. Concreteness is based on the degree of perceptual or sensory quality in speech, *including references to bodily experiences.* Specificity refers to the amount of detail in descriptions of events, people, objects and places. Clarity relates to the clarity of the image as depicted by language. Lastly, imagery refers to the degree to which language evokes a corresponding experience in the listener (Bucci, 1990; Bucci & Kabasakalian, 1992; Kabasakalina- McKay, 1993).

The RA level may be reliably hand scored by trained raters or scored with a computerized procedure. The Computerized Referential Activity (CRA) dictionary (Mergenthaler and Bucci, 1999) was the initial computerized procedure for measuring RA. The CRA dictionary is comprised of 181 words, divided into two categories, words most commonly used in high RA speech and words mostly commonly used in low RA speech.

More recently a new computerized version was developed, the Weighted Referential Activity Dictionary (WRAD) (Bucci, 2003), which has proven to have higher correlation than the CRA dictionary when compared with hand scored trained raters. The WRAD is more sophisticated than the earlier CRA dictionary in two ways: (1) it assigns weights to each word in

the dictionary that reflect a more precise level of RA rather than merely assigning words to the general “high” and “low” dictionaries and (2) it has developed a construct for broad categories of words such as locations, or proper names and word parts utilized in contractions.

The WRAD was developed using 4 types of texts, 763 texts in the total sample composed of a set of Thematic Apperception Tests (TAT) responses, monologues, early memories and segments of analytic sessions (Bucci, 2003). The texts were scored based upon the 4 subscales: concreteness, specificity, clarity and imagery, each subscale score ranging from 0 to 10. The scores were averaged to produce an overall RA score upon which the WRAD was based. The WRAD is made up of 696 items. Most of the items (674) are common words and the remainder fall into categories: parts of words used in the beginning of contractions such as “wouldn” (12), parts of words used at the end of contractions (7), fake words devised for disambiguation such as “knowD” (2), and a neutral sound frequently transcribed as “mm” or “um” (1). The continuum of WRAD weights lie between -1 to +1, progressing from most commonly used words in low RA speech to most commonly used words in high RA speech (Bucci & Maskit, 2005). The dictionary weight was adjusted aligning the average WRAD weight of zero to be paired with the neutral RA score of .50.

Inter-rater reliability of at least 0.80, as measured by Cronbach’s alpha, was reached by the raters. WRAD targets the points at which language would likely connect to subsymbolic systems through descriptions of images or episodes and includes pronouns, prepositions and other function words that people use in different emotional and cognitive states (Bucci and Maskit, 2007).

DAAP and Additional Dictionaries

The Discourse Attribute Analysis Program (DAAP) construct measures are based on the WRAD and several other dictionaries that have been created to assess the referential process (Maskit & Bucci, 2007). The additional dictionaries that will be used in this project assess: disfluency and reflection characteristics of the narrative. In order to develop the dictionaries, conceptual definitions of the dictionary contents were determined and judges identified words from a vast array of texts. Reliability averaging above .80 was achieved among the judges (Bucci and Maskit, personal communication, July 16, 2009 as in Kingsely, 2009).

The Disfluency dictionary is composed of words that are commonly employed when one is searching for the right words: *mean, like, know, kind, well, um* and includes incomplete words, repeated words and repeated two word phrases as disfluencies. "These lexical items may be seen as gestures in verbal form, midway between vocalization and verbalization" (Bucci & Maskit, 2007, p. 1369).

The Reflection dictionary deals with how one thinks and communicates thoughts. Items are related to: cognitive functions (e.g. *assume, think);* difficulties with these functions *(e.g. confuse)*; complicated communicative operations (*e.g. obfuscate*) and characteristics of mental functioning (*e.g. creative, logical).* (Bucci & Maskit, 2007). Based upon three judges, the inter-rater reliability obtained was .84 (Ben-Meir, 2005).

All of the computerized measures are developed and applied utilizing the DAAP which has a unique analytic feature in addition to the more basic assessments of mean word usage. The feature is a smooth weighting function which outputs a weighted average of the word matches for each second of time so as to capture all the dictionary matches within a small time frame and

provide a graph which illustrates the shifting usage of words from each dictionary. Additionally, covariation among the dictionaries may be computed, which demonstrates how high or low the word usage is; in other words the processing represented by the dictionary, and whether it is moving together or in opposing directions within the narrative. Maskit and Bucci (2007) offer: "For example, the covariation between WRAD and Reflection serves as an index of the extent to which the patient simultaneously is engrossed in telling a story and reflecting on it" (p. 1370).

Procedures:

The aims of the study are to: (1) describe the Referential Process as measured by WRAD, DIS and REF in an EMDR treatment and (2) use the measures to guide a qualitative description of the treatment process of this short term, effective treatment of a veteran. The 10 sessions were transcribed by the researcher. The researcher then entered the transcripts according to the transcription rules dictated for the Discourse Attributes Analysis Program (DAAP) in order to measure WRAD, Reflection (REF) and Disfluency (DIS). The DAAP Rules (see Appendix A for a detailed description) address ways to capture changes in speaker (i.e. therapist, patient), tactics to note the use of compound words and to disambiguate words that hold several meanings, such as "like" and "kind".

The DAAP was used to obtain the WRAD scores and other dictionary based scores, to produce a marked transcript of the text and to develop a graph to note shifts in each measure (WRAD, Reflection, Disfluency). The shifts in each measure were examined to understand how they relate to phases of referential process: arousal, symbolization and reorganizing (please see page 13 of chapter I for a description of the referential process). Due to the exploratory nature of the research, the researcher used the output graphs to focus on areas of the narrative in which there are peaks in WRAD. Research of RA scores indicated that 0.5 serves as a neutral midpoint RA

value. In other words, a mean RA score above 0.5 is considered to be high in RA and a part of the narrative that attains a mean RA score below 0.5 is considered to be low in RA.

The researcher a) used the DAAP to assess the levels of WRAD, REF and DIS in an EMDR treatment and add to the limited literature on RA in trauma narratives and b) conducted a qualitative examination of each session providing a detailed description of the protocol adding to the limited literature on the nuances of the EMDR process with veterans. The qualitative examination included: a brief description of the overall session including the EMDR phases depicted, reported Subjective Units of Distress (SUD) ratings shifts and a thorough description of the EMDR process with reference to shifts in the measures of the referential process (WRAD, Reflection, Disfluency) to decipher arousal, symbolizing and reorganizing phases in the patient's narrative.

The following steps were taken: (1) Transcribed the recorded sessions (2) Entered the transcription rules dictated by DAAP (3) Used DAAP data output to develop graphs reflecting the shifts among measures (WRAD, DIS, REF) for each session (4) Marked the patient's reported SUD (Subjective Unit of Disturbance) levels throughout the treatment. (5) Once graphs and transcriptions were marked, the researcher conducted a qualitative analysis of the transcripts alongside the graphs, to (a) Assess the major shifts along multiple measures of WRAD, DIS, REF and (b) Identify the phases of the Referential Activity: arousal, symbolizing, reorganizing (c) Note shifts if any in emotion schema.

Chapter III: Results

Introduction

The Results Chapter is presented in two parts. In Part I, the results of the findings of the referential process for the overall treatment are provided. This provides a bird's eye view of the treatment. In Part II, the qualitative analysis of each session offers rich insight into the shifts in the referential process and into the healing process of a veteran in an EMDR treatment.

The patient presents with a diagnosis of PTSD. The progress of the patient may be viewed from different lenses and perhaps most significantly the patient's self report. The initial symptom inventory score on the "Impact of Event Scale-Revised" was a 69 and by session six the score is decreased to an 8. The treatment progress may also be viewed through tracking the therapeutic relationship. Observations regarding the alliance and the transference are included in the qualitative description. The study focused on examining his progress in treatment by analyzing his linguistic patterns. To elucidate the micro processes within the treatment, a detailed analysis divided by each session is presented. This format was developed because (1) each session has distinct qualities despite the structured EMDR protocol and (2) it offers a unique opportunity to examine the language of the patient in EMDR and how the narrative qualities reflect the referential process.

The following format was developed for the Results Chapter, Part II. For each session the following are discussed: a brief description of the overall session including the EMDR phases depicted and reported SUD ratings shifts and a thorough description of the EMDR process with reference to shifts in the measures of referential activity (WRAD, Reflection, Disfluency) to

decipher arousal, symbolizing and reorganizing phases in the patient's narrative. The frequent use of direct quotation from the transcript is provided to offer insight into the EMDR process with military population and into the DAAP measures. In Part II, unless otherwise indicated, the patient's language appears in italics. The therapist was extremely attuned to the patient and often expressed vocalizations such as "mm". These were included in the quotations and appear in parentheses in the midst of the patient's narrative.

Analysis Process

The process of analyzing these data parallels the patient's treatment progress, a shift from chaos to clarity. Transcribing and then analyzing the sessions was very challenging because the patient's language was highly disfluent and the pace of speech was often pressured, particularly in the first 2 sessions. This was particularly evident during the free associative-like periods, when the most direct trauma processing, the bilateral stimulation, was not taking place. Additionally, a challenge presented in that, with the exception of session 10, the patient employed few words to describe the traumatic experiences. Rather, he referred to the incidents succinctly and vaguely. This feature of EMDR is, in part, why many veterans report liking the model, being able to heal without verbalizing too much. It was only after reading the session transcripts multiple times that the investigator was able to map out the trauma targets and treatment progress. Punctuation was added to the transcript excerpts for readability but vocalizations such as "uh" and repetition in language was not altered so as to illustrate the changes in the linguistic patterns.

RESULTS: PART I

Overview of Data

Throughout the 10 sessions, three combat incidents and one incident with a fellow soldier were formally processed employing the EMDR protocol. All traumas eventually achieved a SUD rating of 0 and a Validity of Cognition Scale (VOC) of 7. This rating was re-evaluated multiple times throughout the treatment to ensure that no more processing was necessary and treatment gains were maintained. In two sessions, session number 6 and 7, the therapist and patient discussed childhood traumas and his compulsive behavior, which were not formally processed. The relationship to his father and sister shed light on the meaning the patient attributed to the recent traumas in deployment. In other words, his schemas led him to respond to the traumatic incidents as he did. While the childhood traumas are not formally processed with bilateral stimulation, the patient may have gained relief in the intensity of these memories through processing the current traumas and gaining insight into how the incidents impacted him.

Sessions were not of uniform duration. They ranged from 45 minutes to 90 minutes, from 2281 to 5036 words spoken by the patient and from 409 to 4466 words spoken by the therapist. Most sessions began with free associative-like narrative followed by structured EMDR trauma processing. Session 1 and session 7, in which they discussed intake and the patient's childhood, respectively, are the only sessions in which no bilateral stimulation was conducted.

Findings: Levels of WRAD, Disfluency and Reflection in the 10 Session Sample

Numerous studies (Bucci & Maskit, 2007; Kingsley, 2009; Nelson, 2010; Murphy, 2012) on WRAD measurements have concluded that WRAD picks up evocative language narrative

well and is considered high when above its neutral midpoint, .5 (Murphy, 2012). Reflection is considered high when it is above .05 “based on anecdotal observation of many sessions and other text materials” (Murphy, 2012, p. 3). Studies of the Disfluency measures indicate that high disfluency likely indicates the Arousal phase (Kingsley, 2009) but the authors of the DAAP acknowledge that the exact nature of what this measure captures continues to be examined. Since no norms exist for RA in EMDR sessions, the means from this data set were used to analyze and describe shifts in the referential process.

The overall mean WRAD score for the treatment (10 session sample) was .464 with ranges from 0.4965 in session 10 to .4301 in session 6 (see Table 1). No published studies to date have used the Discourse Attribute Analysis Program (DAAP) in evaluating WRAD in EMDR treatment. Provisional norms of the referential process measures based upon 24 psychotherapy sessions from distinct treatments indicate that mean WRAD is .43 with a standard deviation of .035, mean reflection is .093 with a standard deviation of .018 and mean Disfluency is .05 with a standard deviation of .022 (Maskit, 2012). The sample psychotherapy sessions did not include any trauma treatments. The sessions were selected from the middle of CBT, psychodynamic or psychoanalytic treatments. Provisional norms of the referential process measures based upon 514 telephone conversations indicate that Mean WRAD is .453, with a standard deviation of .037, mean Reflection is .063, with a standard deviation of .02, and mean Disfluency is .079 with a standard deviation of .031 (Murphy, 2012). The means and standard deviations from the data in this study were: WRAD, .464 (SD=.019), reflection, .065 (SD=.007), disfluency, .066 (SD=.005). The data illustrated that the level of WRAD is relatively high in the EMDR treatment when compared to base rates from other psychotherapy samples. For example, Murphy (2011) reported means for samples that were both approximately one standard deviation lower than this

treatment. Below is a table (Table 2) providing the means from these data, the provisional norms of 24 psychotherapy sessions and provisional norms based upon 514 telephone dialogues via telephone for comparative purposes. The means from the EMDR treatment are more similar to those of the telephone conversations as opposed to the psychotherapy sessions. An understanding of the WRAD levels in EMDR being more similar to conversations will appear in the Discussion Chapter.

The EMDR treatment session mean WRAD score appears relatively high compared to the mean WRAD scores of the both telephone conversations and the psychotherapy treatment samples (see Table 2); this suggests that in the majority of the sessions, the patient may have been psychologically immersed in the traumatic events. Based upon a qualitative reading of the treatment this is precisely the case. The patient exhibited this immersion both in the free associative like periods, typically in the beginning of each session and in response to questions of the EMDR protocol. The data suggest that high WRAD was observed throughout the treatment in all phases. Therefore, no conclusion may be drawn about whether the high WRAD is due to EMDR structured questions pulling for detailed, evocative language, thus increasing WRAD. In the following chapter, two speculations regarding the high WRAD in the study are made and discussed in light of the literature.

Table 1

List of Sessions Mean RA (MWRAD) Scores

Session #	Mean WRAD Score
1	0.4901
2	0.4637
3	0.4522
4	0.4724
5	0.4607
6	0.4301
7	0.4705
8	0.4465
9	0.4578
10	0.4965

Table 2

Comparison of Means and Standard Deviations (SD) for DAAP Measures in 3 Data Sets

	EMDR Data Set (N=10)	Psychotherapy (N=24)	Conversations (N=514)
WRAD	.464(SD=.019)	.433(SD=.035)	.453(SD=.037)
Disfluency	.066 (SD=.005)	.050 (SD=.022)	.079(SD=.031)
Reflection	.065 (SD=.007)	.093 (SD=.018)	.063(SD=.020)
HPWRAD	.309 (SD=.109)	.212 (SD=.127)	.309(SD=.167)

HPWRAD

The high WRAD in the treatment was also examined in terms of HPWRAD, how high the WRAD is when it *is* high. In other words if mean WRAD is likened to the mean of walking, strolling and running, then HPWRAD reflects just the running (Bucci, 2007). The HPWRAD mean in this study was the same as the telephone conversations; however, when examining the HPWRAD using each session as a unit, the unusually high levels of HPWRAD in sessions 1 and 10 are immediately apparent (See Table 3 below).

The patient's speech was in the high WRAD zone approximately 30 percent of the time on average and in one session (session 10) was in the high WRAD zone for over 50 percent of the session. In contrast, base rates for the sample of 24 psychotherapy sessions (Maskit, 2012) from varying theoretical orientations showed patient speech to be in the high WRAD zone approximately 20 percent of the time (about 1 standard deviation lower than the current treatment).

Table 3

List of Sessions Mean HPWRAD Scores

Session #	Mean HPWRAD Score
1	0.4041
2	0.2862
3	0.2626
4	0.3660
5	0.3455
6	0.1291
7	0.3324
8	0.1786
9	0.2524
10	0.5304

Patterns in The Referential Process Phases

The EMDR AIP model hypothesizes that through a successful treatment of PTSD, integration occurs, fostering the traumatic memory to shift from its fragmented nature in somatosensory and affective aspects to greater valence in the verbal form (Shapiro, 2001). Similarly, Multiple Code Theory (Bucci, 1997) suggests that the transition from predominantly subsymbolic experience in the arousal phase to integration among subsymbolic and gradually verbal symbolic material in the reorganizing phase is reflected in therapeutic process research of effective treatments.

While the properties of the WRAD dictionary and implications for the measure have been established, the properties of the Reflection and Disfluency dictionaries are less clear at this time (Murphy, 2012). The relationship between WRAD and Reflection indicate the symbolizing and reorganizing phases of the referential process, respectively; however, the relationship of these measures to Disfluency is not established (Murphy, 2012). The manner in which the DAAP measures are most informative are by using them as indicators to highlight micro shifts occurring in the narrative segment. For example, when WRAD is above .5, the neutral midpoint, at any point in a session one may return to the transcript to gain insight into why WRAD was high at that moment in terms of the language content and the context in the session. Therefore, the mean calculations for Disfluency, WRAD and Reflection in each session (Table 1 above and Tables 4 and 5 below) offer one description of the overall data; however since they cannot capture certain nuances, the Results Chapter Part II contextualizes the measures and offers insight into their meaning. There was no trend in WRAD, Reflection or Disfluency scores from one session to another; (i.e. an increase in Reflection over the treatment arc). However, this is to be expected,

since the patient was not processing one trauma over 10 sessions. Rather he was bringing in new material each session. Furthermore, as Bucci (2007) discusses, the phases of the referential process-- arousal, symbolizing and reorganization-- occur repeatedly within each session and in various sequence. (Please see Chapter I page 13 for a description of the phases of referential process.) This pattern was observed in the data. While in a few instances the phases of arousal, symbolizing and reorganization were chronological, most often they were not.

Table 4

List of Sessions Mean Disfluency Scores

Session #	Mean Disfluency Score
1	0.0618
2	0.0644
3	0.0684
4	0.0608
5	0.0653
6	0.0729
7	0.0604
8	0.0582
9	0.0741
10	0.0721

Table 5

List of Sessions Mean Reflection Scores

Session #	Mean Reflection Score
1	0.0554
2	0.0654
3	0.0710
4	0.0734
5	0.0744
6	0.0705
7	0.0613
8	0.0607
9	0.0566
10	0.0599

Arousal

In examining narratives of the arousal phase it is likely that one will find the pattern of high disfluency, low Reflection and low or fluctuating WRAD (Kingsley, 2009); however, as stated earlier, the properties of the Disfluency dictionary are still being evaluated. In examining narrative segments for disfluency, the presence of repetition, incomplete words and words used when one is searching for right words (i.e. "you know") prevail. Repetition in language may serve as an indication of re-experiencing of the trauma, a type of flashback. The process of repetition may provide repeated exposure to a segment of the trauma incident and allow the patient to habituate. This is precisely the theory behind Prolonged Exposure therapy (PE). Repetition allows the patient to gradually become desensitized to the traumatic memory. Futhermore, the parts of the trauma that are reported as most disturbing, called hot spots, are focused upon so that the patient has more opportunities to repeat just that segment of the incident.

In this study, high disfluency scores occurred mostly early on in the sessions and occasionally during the trauma processing but rarely towards the end of the sessions, suggesting that the treatment processes within each session may have fostered a decrease in arousal. These findings are consistent with a primary aim of EMDR treatment, to decrease arousal and allow memory processing and integration (Shapiro, 2001). Furthermore, the finding supports EMDR proponents' responses to those who believe EMDR and exposure therapies have the same mechanisms of change. An email from the therapist for this study captures the differentiation between the use of arousal in exposure treatments and EMDR treatments.

In Prolonged Exposure my goal would be to get the client as highly anxious as possible so the client can live with such high intense activation that desensitization occurs. In EMDR the

process is NOT to keep the client in such distress but to allow the memory to be reprocessed in a manageable way. Metaphorically we describe the process as the train moving down the track. The client is not held in such high levels of distress but through bilateral stimulation the memory is processed to adaptive resolution. Attunement plays a part in the trust and rapport of the client. I have numerous clients who could not withstand the overwhelming treatment of PE (holding them in such high levels of intensity) therefore they dropped out of PE. They came for EMDR treatment and they typically processed the same memory effectively with EMDR in 2-3 sessions. (Dr. Hugh[1], February, 8 2013)

Symbolizing

The symbolizing phase is typically detected in patterns of high WRAD, low reflection and low or fluctuating disfluency. As discussed earlier there was a high frequency of the symbolizing phase throughout the treatment before, during and after trauma processing. In this study, there were a few instances in which the WRAD measure was high along with high Disfluency during the symbolizing phase. This observation as well as the instances of high WRAD throughout the sessions led to a qualitative examination of the narrative segments to decipher whether there existed any differences in the linguistic patterns of WRAD before and after the trauma processing. In order to assess whether these narrative segments connoted evocative language or immersion in the trauma, an effort was made to assess linguistic characteristics indicative of reliving the trauma in retelling and examine the levels of disfluency and reflection in instances of high WRAD.

As noted earlier and discussed in the study limitations, the patient does not verbalize much of the trauma processing, which occurs in silence during the bilateral stimulation. Therefore, over the course of the treatment, there was only one trauma incident that the patient verbalized in detail both before and after some of the trauma processing. In step, the researcher compared the two segments, both of which were high in WRAD. The excerpts were qualitatively

[1] Pseudonym to protect patient confidentiality

examined for the presence and absence of the following linguistic characteristics which suggest immersion in the trauma: unusual attention to detail, inclusion of visual imagery, incoherence, shifts into the present tense and repetition of exact phrases (Goldfine, 2010).

The excerpts, regarding a vehicle rollover incident in Iraq, and Table 6, comparing the DAAP measures, are provided below, followed by a discussion of the findings.

Table 6

Measures in Trauma Narrative Before and After Some of the Trauma Processing

Session	WRAD	Disfluency	Reflection
1	.64-.59	.01-.08	.01-.04
10	.60 -.56	.12-.06	.03-.08

Session 1:

Yeah there was uh, there was a vehicle rollover (mm) that, actually put me into the hospital for about a week and a half (mm) and it was an actual concussion (mm) and head trauma (mm). We were going miles an hour in pursuit of an enemy and, um what happened was I was cutting across the median and I was trying to cut him off (mm) and the vehicle, the flow of traffic behind us was still you know, (mm) fully charging (mm) they weren't slowing down. The convoy was trying to get them to slow down (mm) but they weren't (mm) and a vehicle came up and hit, my driver's door (mm) and I had my arm out and it actually, the crazy thing of it is that I had my arm kind of out like this, the vehicle came up and it hit a side of the vehicle and my arm, throwing my arm back in (mm) tossing my body and I actually, jerked the steering wheel (mm) and in those vehicles (mm) if you're going too fast (mm) especially on, on unstable ground (mm) you'll, any jerk wheel you can flip (mm) the vehicle (mm) and, that's exactly what happen. It was uh full vehicle rollover (mm) and my, gunner was trapped underneath his (mm) his the shield th- the shield. [takes deep breath] And uh I was wearing my helmet but just the fact of that hard blow you know, hitting on the door (mm) and then, hitting again (mm). Uh, they actually thought that I had broken my back (mm) so they didn't, they wouldn't let me get out of the vehicle. Actually cut me out of my uniform and (mm) you know, put me on the med-evac helicopter so yeah.

Session 10:

I remember uh [clears throat] being on the ground and uh they were trying to get the the Bradley hooked up to the vehicle so they could flip it just enough to get the the gunner out and I remember uh Sergeant Joe who's not with us anymore he um he was running around you know, trying to check and see if everything um was good and he was always a tough love guy with me anyhow he was always kind of uh always give you the cold shoulder but uh he came around and was checking. Um, it was really hard fo- for me to focus on anything because I uh, I had lost my glasses in the in the roll over. I remember that now and so everything to me wasn't so clear. I don't see very well with out my glasses so um I remember shouting out I don't have my glasses. Can you please help me find my glasses? And I remember him recovering my glasses for me. Like he went over and searched inside the vehicle and found my glasses and brought them over to me (mm). Um, so I remember, I remember that and it was uh. You know, that means a lot to me now.

Linguistic characteristics in the first excerpt, pre-processing, reveal that the patient may be reliving the trauma. The patient shares an unusual amount of detail and visual imagery. The narrative is not coherent and was told at a rapid pace. Commas inserted for readability may obscure this some. In the excerpt, the patient exhibits a physical reenactment within the session

of how his arm was positioned at the moment of the accident, suggesting a sense of reliving ("I had my arm out and it actually, the crazy thing of it is that I had my arm kind of out like this, the vehicle came up and it hit a side of the vehicle and my arm, throwing my arm back in"). Towards the end of the segment he takes a deep breath, perhaps trying to regulate the sense of immersion. The pre-trauma processing excerpt also exhibits several examples of repetition. He uses the word "actually", a word that may evoke a sense of aliveness, 6 times in the excerpt (full excerpt quoted above). Other examples of repetition are underlined and highlighted by font below.

The convoy was trying to get them to slow down (mm) but they weren't (mm) and ***a vehicle came up and hit****, my driver's door (mm) and* `I had my arm out` *and it* ***actually****, the crazy thing of it is that* `I had my arm kind of out` *like this, the* ***vehicle came up and hit*** *a side of the vehicle and* `my arm`*, throwing* `my arm` *back in (mm) tossing my body and I* ***actually****, jerked the steering wheel (mm) and in those vehicles (mm) if you're going too fast (mm) especially on, on unstable ground (mm) you'll, any jerk wheel*

In contrast, the excerpt from session 10, about the same trauma, is more coherent and the speech is not pressured. The patient indicates he is not immersed in the past trauma but rather in the present tense by using the reflecting word "remember". Such language is indicative of the ability to remove oneself from the experience in the retelling, to gain some distance. Interestingly, he repeats the word "remember" seven times which suggests that he is actively reorganizing the material from the memory. While he offers detail in session 10, it's not overly inclusive. These two excerpts may indicate crucial differences between language that is evocative and language that reflects immersion in trauma. Since the excerpts are from the first and last session of the data, changes in the linguistic pattern may also be confounded by other factors over the course of treatment, not just trauma processing.

Both excerpts were examined for patterns in disfluency and reflection measures and differed in both measures. The measures for the excerpts in sessions 1 and 10 are provided in Table 6 (above). It was hypothesized that in the example of high WRAD prior to trauma

processing, the linguistic pattern may also reflect high arousal, as measured by high disfluency, but that after some of the trauma processing the WRAD would be high and disfluency low, indicating that the patient is immersed in telling the trauma memory but is no longer in a state of arousal or reliving and has attained some distance, a distinction between past and present, which trauma treatments seek to offer. There was no such pattern in Disfluency observed within the high WRAD narrative excerpts. The distinction in Disfluency patterns is that in session 1 the disfluency gradually rises whereas in session 10 it gradually decreases. The Reflection measure differences may shed light on the underlying trauma processing mechanism. Reflection is higher in the excerpt following trauma processing in session 10.

Overall, in the treatment the symbolizing phase occurs both during the free associative periods and during trauma processing in which the high WRAD of the patient is at times precipitated by an EMDR intervention. These findings suggest that the overall organizing structure of EMDR treatment may have led the patient to become more detailed in his language (Please see the discussion chapter for discussion of the speculations regarding high WRAD). Furthermore, the relationship between high WRAD and high REF may be a key indicator of high WRAD narratives that connotes evocative language rather than trauma immersion.

Reorganizing

The Reorganizing phase is typically detected in patterns of high Reflection, low WRAD and low or fluctuating Disfluency. Reflection was present throughout the treatment, often after a high WRAD segment. The mean Reflection of this study (.065) compared to the sample of psychoanalytic, psychodynamic and CBT psychotherapy sessions (.093) is significantly lower. By comparing the mean Reflection from this study, the sample of 24

therapies (Maskit, 2012) and the sample of 514 phone conversations (Murphy, 2012), the sample of psychodynamic and CBT treatments indicate a higher level of reflection (approximately 1.5 standard deviations) than EMDR and than everyday conversation. Reasons for this difference may be due to the varying task of EMDR and these other therapies and are discussed in the following chapter. Additionally, some of the reorganization phases may be occurring more often between sessions when the patient is instructed to write notes if any thoughts about the treatment arise. For example, the trauma incident in which the patient was knowingly sent into fire fighting with a malfunctioning weapon was processed in session 4 wherein his SUD level was reported as 3 or 4 after the trauma processing. Upon return to the following session, the SUD rating commences at 1 (not a 3 or 4) and is processed until he reports a 0. Based upon patient self-report measures, this suggests Reorganizing may actively be continuing between sessions.

RESULTS: PART II

Results: Session 1

Overview:

The first recorded session, where the data for this study commences shall be called session one. The recording begins in the midst of the session. As discussed in Chapter I, the phases of EMDR are adaptable such that the pace of each patient and therefore the number of sessions that the patient remains in each phase varies. Material in this session alludes to completing History and Treatment Planning, the first of 8 phases in a prior session (please see Chapter I, page 16 for a review of the Eight Phases of EMDR). Prior to the recorded material, the therapist and patient began phase 2, the Preparation phase, in which they established guided relaxation techniques and selected an image of a "Safe Place". The recorded material in this session continues with phase 2, wherein the therapist focuses on strengthening the alliance and orienting the patient to the treatment process. The quality of the narrative in this session may be described as a type of free association. The patient associates and periodically the therapist expresses attunement with non-verbalizations such as "mm' and asks pointed question. There are no SUD ratings in this session.

The themes of this session lay the groundwork for understanding the patient's schemas addressed throughout the treatment. Based upon a line by line qualitative analysis of the session data, the themes that arise are: significance of the treatment and treatment frame; distrust of others, particularly women; conflict between civilian and military identity; rigid gender roles; preoccupation with power and respect of others; hypervigilance to boundary violations; fear of lack of control and experiencing significant PTSD symptoms.

Line by Line Analysis:

In session one the patient sounds initially defensive in tone and language and it soon becomes apparent that he is anxious about securing his time with the therapist and ensuring that his "chain of command is aware" that the treatment is of a consistent, weekly nature. He was recently informed that his traumatic brain injury (TBI) evaluations may be completed sooner and therefore shorten his EMDR treatment time before returning to duty. This led him to come to session today wanting to, "change it up", wearing his civilian attire rather than "come in as staff Sergeant Jones[2]". It is possible that already in anticipation of ending treatment, the patient is reflecting a wish to reveal more of himself to the therapist and is grappling with his internal and external identity, discussed in terms of attire. The therapist does not respond directly. Here, as in many moments throughout the treatment, the therapist expresses that he is listening with timely and attuned, non-interrupting, vocalizations, such as "mm" and "yeah". As is characteristic of the beginning of all sessions, the therapist asks the patient to update him since last session.

The content and language evidence significant PTSD symptoms. The patient discusses his goals, which entail returning to normalcy of hobbies such as playing and repairing guitars. He repeats that he is seeking to emerge from a depressive state of isolation from things and "people you love the most." When asked about his nightmares, the patient does not immediately reply to the content of the question. He reports experiencing tinnitus. His WRAD, disfluency and reflection are all high.

I have no idea what that is, but it was it was at, at night. It was, I was lying down getting ready to go to sleep (mm) and I had this ringing in my ear, and it was like in my, in my left ear. It wasn't in both.

[2] This is a pseudonym. All names from this moment throughout the remainder of the presented data are pseudonyms. All data has been deidentified.

Soon after, he discusses physically defending himself in the nightmares ("holding my hand over my head") and physiological reactions such as waking in a sweat and having intrusive thoughts. In the segment below he explains that his nightmares are not solely combat related bur rather the themes that prevail are interpersonal dynamics in which he feels blamed. The WRAD gradually increases as reflection and disfluency decrease suggesting the symbolizing phase.

I'm not just saying like combat scenarios (mm). I'm saying, um confrontations, with somebody (mm) somebody trying to put the blame on me (mm) or being an argument or something like that (mm). Uh, sometimes I, I shout out.

The patient reports his anxieties and reiterates several times that his negative experiences are not solely combat related. The disfluency measure starts very high and although it fluctuates it remains high throughout much of this segment. WRAD fluctuates and it gradually rises to slightly above the neutral midpoint. Reflection remains low suggesting he is in the arousal phase.

S*ome of them are (mm) you know, some are like you know, do pop up in your head and you think about them but the things that pop in my head are some of the combat scenarios or it could be things that have happened uh bad situations (mm) since I have been in the service (mm). That I found myself involved with you know, others soldiers (mm) or whatever you know, bad confrontations (mm) or finding one of my soldiers that was on drugs and he came up to me and he was like people are going to come and get me (mm) and all of this (mm). I'll have that pop into my head (mm) you know, (mm) and I'll start thinking about him (mm) and, I realize that you know, I mean, things, absolutely are uncontrolled (mm). I mean, it' s, I'll go from one thing to the next and then I'll go into worry mode, it's like I start thinking about let's say a mission pops up in my head, after that's done let' s say, I'll go into like financial worry mode and I'm absolutely stressed out (mm) you know, (mm) and I'll start thinking about finances and then starting thinking about all of these, depressive down things.*

In a long narrative he repeats his anxiety about uncertainty of what the Military will decide and his lack of control over the process. The patient then associates to taking out his anxieties and anger on others when he feels a lack of respect. He notes his awareness of an interpersonal pattern that arises in material throughout treatment.

I realize that I was attacking her (girlfriend) like I would attack one of my soldiers (mm) that disrespected me.

He then proceeds to describe a specific vivid incident in which he felt the girlfriend "comes into my world" and "peeks in" by reportedly overstepping the boundaries of her gender role and disrespecting him. Disfluency and WRAD are both high suggesting the symbolizing phase.

I'm paying. We're in a taxi. We went on a vacation and I was in a taxi um had my good friend in there in the taxi and she was in there too, And uh, [clears throat] there' s some uh it wasn't, it wasn't a complicated process it' s just, I was always brought up that the that the man pa- pays (mm) you know, (mm) and that there' s tw- two men in the vehicle (mm) you know, then they will discuss (mm) how the payments (mm) going to be. The woman does not need to worry about it (mm) you know, that' s that' s the man' s (mm) the men' s job to decide (mm).

As he proceeds, the content and language choice below about the military, such as "peeking" is similar to the language choice when describing his girlfriend's intrusion. He likens his experience of her to "non structured officers peeking into my business". The segment is very low in WRAD and Reflection and high in Disfluency suggesting the arousal phase.

[clears throat] and I think you know, I think that does have a lot to do with you know, being in the military and having you know, non structured officers peeking into my business (mm. mm.). You know, I had a first sergeant that would constantly what you got there? You got there? You got a care package? Hey what you got? And he'll grab something out of it and take it. (mm) and, f- for me that kind of you know, that' s kind of) this is mine (mm). This is my situation. You' re not getting into it and now I found myself even you know, if I get something, I'll kind of just keep it to myself and, not tell nobody about it.

He then exhibits an ability to reflect on his interpersonal emotional trigger. He proceeds to reflect on his behavior with the girlfriend and with the underlying themes regarding control, rigid gender roles and boundary violations. As the therapist is working to develop an alliance, the patient may be providing him with warnings about his need for appropriate boundaries and a strict treatment frame.

The therapist directs the patient and asks if there was a specific event that precipitated the traumatic brain injury (TBI). The patient describes, in vivid detail, an incident in which he, as the driver, is instructed to pursue a potential threat, which leads to the vehicle rollover. The WRAD during this narrative segment is extremely high, well above the neutral midpoint. All three measures fluctuate. When WRAD decreases, reflection increase and disfluency notably rises towards the end of the segment. While this pattern suggests the symbolizing phase, upon a qualitative reading the level of disfluency is striking. This segment raises the question about whether immersion in one's evocative narrative suggests a positive prognosis in the treatment or whether the patient is highly immersed and in part reliving the vivid trauma memory.

Yeah there was uh, there was a vehicle rollover (mm) that, actually put me into the hospital for about a week and a half (mm) and it was an actual concussion (mm) and head trauma (mm). We were going miles an hour in pursuit of an enemy and, um what happened was I was cutting across the median and I was trying to cut him off (mm) and the vehicle, the flow of traffic behind us was still you know, (mm) fully charging (mm) they weren't slowing down. The convoy was trying to get them to slow down (mm) but they weren't (mm) and a vehicle came up and hit, my driver' s door (mm) and I had my arm out and it actually, the crazy thing of it is that I had my arm kind of out like this, the vehicle came up and hit a side of the vehicle and my arm throwing my arm back in (mm) tossing my body and I actually, jerked the steering wheel (mm) and in those vehicles (mm) if your' re going too fast (mm) especially on, on unstable ground (mm) you'll, any jerk wheel you can flip (mm) the vehicle (mm) and, that' s exactly what happen. It was uh full vehicle rollover (mm) and my, gunner was trapped underneath his (mm) his the shield th- the shield. [takes deep breathe through nose] And uh I was wearing my helmet but just the fact of that hard blow you know, hitting on the door (mm) and then, hitting again (mm). Uh, they actually thought that I had broken my back (mm) so they didn't, they wouldn't let me get out of the vehicle. Actually cut me out of my uniform and (mm) you know, put me on the med-evac helicopter so yeah. So that was a hard one too because after, after all of this they were like you know, the military has to do an investigation (mm) on things, and, everybody had the same story but it was like the investigator didn' t believe it. You know, he thought that he thought that it was a reckless act or (mm) whatever (mm) and, that made me feel like, wow (yeah) where's the, where's the trust there? Like (right) [clears throat] when I was in the hospital, uh, when I had like severe headaches, things you would have you know, (mm) blurred vision (mm) when you really lose your, your focus when you like have a concussion (mm). You' re trying to focus, like after I think the third day or the fourth day I' d ask the, the nurse if it would be okay if I just, started walking around a little bit (mm) and then I end up making my way down to the uh, computer center, and I realize that it was really, a slow process for me to comprehend (mm) what was going on with the compute. That it wasn't, I' m pretty good with computers (mm) so for

me to sit there and just stare at the computer screen, th- kind of, get my my eyes and my mind working again (mm) you know, like, trying to, trying to be able to focus on (mm) everything.

Central schema about mistrust prevail. He grapples with the memory of being in a state of recovery post rollover incident and the mistrust of the military investigating the accident and his role as driver. Soon after, he recalls his platoon sergeant's eagerness for him to return to duty**.** By attributing the sergeant's wish for his quick discharge as due to his caring nature, rather than a need for drivers on duty, it appears the patient may be rationalizing to defend against this likelihood. The WRAD is high while reflection and disfluency remain low indicating the symbolizing phase.

He wanted to take me out like r- second or third day he wanted to (mm) take me back into the mission (mm). And you know, he cared about me (mm) you know, what I mean, he cared (mm) about me. He wanted to not see me in the hospital (yeah) if, (yeah yeah) I didn't have a serious (mm) injury (right). When I left the hospital I didn't feel like, I was completely healed.

The therapist asks what it was like to return on a mission not yet healed. He is helping the patient access affect that arises and inviting him to develop potentially new meaning to his trauma experience. The patient begins to articulate his experience of vulnerability. The WRAD is low and Disfluency is high suggesting the arousal phase.

Y*ou go right back into that protective mode of (mm). Security, security (mm) and, that' s what I did but I felt that, it was a little blurry (mm) to me (mm. You know, there was, I remember sometimes after that, that traumatic, situation (mm) that I found myself even like dozing off falling asleep (mm) at the wheel.*

The patient then continues to describe a different incident following his return to duty in which he was driving and blacking out due to concussion symptoms. He describes several other Military vehicles being blown up with road side explosives and his ability to step on the accelerator and escape the next explosions despite his concussive symptoms. This trauma is not processed in later recorded sessions.

The WRAD is the highest at this point in the session. The disfluency and reflection fluctuate throughout, suggesting the symbolizing phase. Since the narrative is extremely long, an excerpt of the point highest in WRAD is provided in lieu of the entire segment.

It completely, put my body in shock (mm) and that' s the reason why received an award is because, everybody in that convoy went through that same thing (mm). The first two vehicles got blown up. They were, they were static in the situation. They got blown up, to the point they were they actually had to stop you know, in the kill zone. They had to stop (mm). I blacked out. My vehicle was still rolling, I had came to a stop, on the, with the vehicle. I came to a stop, and I saw off to my left hand side. I saw a vehicle pull up and it was my uh my replacement platoon sergeant, and he pulled up and I just saw him like our windows were up. I just saw his mouth moving, and you know, I was completely in shock.

When the patient completes the narrative, ending with his ability to emerge with his unit alive, the therapist makes an empathetic comment and segues to scheduling the next session. The patient apologizes for not working on EMDR in the session and the therapist clarifies that this session was a time to assess some targets for the treatment. As the therapist says goodbye the patient lingers briefly wishing to connect informally. He talks to the therapist about taking his girlfriend's daughter camping and horse back riding for the first time this coming weekend. The patient tries to connect with the therapist and does not seem to be aware of the cues ending the session. The therapist is warm but maintains the treatment boundary and ends the session. This dynamic is typical of the session closures.

Results: Session 2

Overview:

Session two commences with the patient speaking nearly uninterrupted in a free associative manner and the therapist typically responding with non-interruptive language such as "okay" and vocalizations such as "mm". This beginning of the session is characteristic of the treatment. The session then becomes more structured by the phases of the EMDR protocol.

Several phases are covered in this session, phases 3 through 7: Assessment, Desensitization, Installation, Body Scan and Closure (please see Chapter I, page 16 for a review of the Eight Phases of EMDR). The therapist works with the patient to define the trauma targets he wants to process in the session. After discussing two targets, the patient selects a traumatic experience to process in which he felt threatened by his lieutenant. The therapist proceeds with the EDMR protocol. By the close of this session, the Subjective Unit of Disturbance (SUD) score shifts from an 8 to a 0 after the bilateral stimulation.

Line by Line Analysis:

The session opens with the therapist asking the patient about how he has been since the last session. This question at the beginning of the session is typical of the treatment. The patient, perhaps unconsciously trying to alarm the therapist, indicates that he stopped compliance with the medication that treats his PTSD symptoms of anger and impulsivity. Soon after, upon noticing his "fits of rage," the patient resumed compliance with the medication. He then nonchalantly states " So yeah that happened since the last time I've seen you." The patient associates to his formal acceptance into the Traumatic Brain Injury (TBI) program and speaks anxiously about his uncertainty of what lies ahead after treatment and about his feeling a lack of control. The following segment illustrates high markers in disfluency suggesting the arousal phase.

Sometimes, sometimes you know, what the future is going to bring you know, you can, you can, pretty much plow the path (mm). As of now it's kind of, kind of like my life is in other people's hands.

He then discusses being accustomed to having decision-making capacity since childhood and not being accustomed to the current sense of lacking control in the Army. In the following segment WRAD fluctuates and increases to well above the neutral midpoint for period of time.

Disfluency rises as WRAD decreases and Reflection fluctuates but remains low. This pattern suggests he is in the symbolizing phase of referential activity.

Yeah, yeah it' s scary. I don't remember anything, I mean, when I was a kid they leave the decisions to my parents. But so since I was 9 I've been making decisions on my own, and now it's right back to, you know, what do we believe? Do we believe that he can still perform as a soldier? I don' t have a problem with deployment. I have an issue with getting blown up (mm). Getting put into situations that are uncontrollable by any of us. Some of those situations there's nothing, there's no amount of training that you can go through to avoid those scenarios. I mean, to fire fight you train, you train a lot to get into a fire fight. IEDs (improvised explosive devices), how much training can you actually, really go through?

The patient continues in the symbolizing phase, a phase in which it is believed that affective experience links to images and words. One way it appears is in the here-and –now with therapist. Below, the patient consciously talks about his friend but is also referring to his own experience seeking therapy.

I' m a survivor you know, along with you know, I keep in communication with my old squad leaders, some friends and stuff. My old squad leader got out of the service you know. He got out, finished his uh, committed time and his wife told him said you starting to act up, you got some issues. He went and found out he has TBI (mm) PTSD. He' s going through therapy. He's a big time supporter of EMDR.

Then, the patient enters the last phase of the referential process, reorganizing in which the speaker often recognizes his ability to cope. This phase is indicated by a decline in WRAD, and steep increase in Reflection. He talks consciously about a relationship to a male friend and possibly unconsciously about the therapist. He associates to the significance of having an ally to talk to and soon associates to a contrasting experience with his female TBI counselor.

It's nice that I've got somebody there (mm) that I can call. A guy that' s been by my side the entire time, you know. Then for him to say I'm right there with you (yeah). Yeah and I think another thing another thing that really bothers me too is uh like mixed information. You know, I went to, my counselor this morning and I'd always been under the consideration or the understanding that a counseling session is this right? (mm) Well, I show up to go to counseling with her and it's a gossip session for an hour of my life. She even forgot what my name was. Me, if I'm doing counseling, I know I'm going to do the read up before I counsel that solider (sure) . Just to make sure that I'm on point.

He proceeds to explain the upsetting interaction with the female TBI counselor, possibly an underlying message of warning the therapist not to repeat the rupture. A persisting theme of the devaluation of women begins to emerge. He explains seeking EMDR treatment in lieu of the TBI counseling and inquires about how many sessions remain. It appears he seeks the answer to concretely know how much time remains, because he is anxious about abandonment. Additionally, this inquiry is testing if the therapist is in the words of the patient, "on point". The therapist shuffles through his papers, perhaps flustered, as the patient is testing him. He examines the notes to decipher what number session they are on and answers moments later as the patient wonders aloud if he will be transferred to another EMDR therapist. The therapist reassures the patient: "We want to make sure you get the continuity of care that you need. So that will be there. We, we'll make sure of that." The patient replies: *Awesome, cool.*

Then the therapist initiates the structured EMDR protocol by asking a direct question to identify the trauma target for this session. The therapist reviews several targets and makes an allusion that they were discussed previously. When the patient is asked if he has another target to add, his WRAD peaks for the second time in this session suggesting he is immersed in telling his experience and in the symbolizing phase. The trauma target he describes is related to an experience of abandonment, the trauma he alluded to fearing repeating with the therapist moments beforehand.

One that I can think of is, um is pretty rough to deal with. Uh it's not so much, I mean, I guess it would be considered PTSD, but when I started basic training I called home and uh my wife had told me, this was the day before my final. My wife told me that she didn't love me and she never has and that she' s moving on, and you know, it was like my whole life had ended and I almost you know, basically I went up back up to my bunk. And I collapsed you know, I was just like what the heck I mean, it was just it was absolutely horrible. But, uh you know, the guys stuck it together with me …but that was a huge turning point in my life, where, I lost a lot of respect for women.

The patient's distrust of women emerges in the earlier material regarding female TBI counselor and soon after the material above where he relates his distrust of women and reliance on "the guys" and perhaps the EMDR therapist.

The therapist inquires if the patient would like to process the incident with his ex-wife through EMDR and the patient requests processing "the vineyard" target. As per the protocol (please see Chapter I), they establish a non-verbal stop signal so the patient has a sense of control over the process and can initiate a break if he becomes overwhelmed. Additionally, the image of the patient's safe place, a beach, is reestablished. The dialogue suggests that the safe place was discussed previously.

A rupture in the therapeutic relationship ensues; however, since less than 25 words are spoken by the patient in this sequence, the referential activity measures cannot be reflected on the graph to capture this moment. The patient inquires if the therapist visited the beach, his safe place. The therapist states: "I haven't yet but I intend to." The patient looks down, as if in shame or disappointment and the therapist does not acknowledge the apparent shift in affect. This transpires at the precise moment where the treatment calls for developing a sense of safety in approaching the trauma narrative. In fact, the therapist's choice to indicate that he will visit the safe place, the beach only superficially addresses the disappointment and simultaneously opens the patient to a less boundaried frame and more vulnerability. It is common in EMDR and other manualized trauma treatments for the therapist to follow the protocol and use the session time most effectively for trauma processing. At times, therapists need to make rapid judgments about whether to address the transference. Without an exploration of the patient's response in the session, no conclusion may be drawn; however, based on the brief verbal exchange, the tone and

body language of the patient it may be hypothesized that this is a small rupture in the alliance. Despite this minor rupture, the patient proceeds to process his most disturbing trauma.

The therapist proceeds with the protocol, requesting that the patient recall a mental picture of the worst part of the trauma in the vineyard. The patient states seeing the lieutenant in front of him after he emerged from the vineyard. The therapist asks what negative belief exists and what positive belief he would like to have about himself related to the image. The patient replies: "I'm a coward" and "I'm confident in myself" respectively. The patient rates the veracity of his positive belief on a scale (the VOC) of 1 to 7 as a 2. The emotion he feels is "bitter". The level of Subjective Units of Disturbance on a scale of 0 to 10 was reported as an 8. In calling up the worst image of the trauma, the patient reports feels it in his hands, knees and stomach. The therapist initiates the bilateral stimulation and asks the patient to follow the lateral movement of the therapist's fingers with his eyes. After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows. [3]

1. Calm
2. I've seen my, my buddy Jim sitting in the driver's seat
3. The old safe
4. I'm standing in front of the house [clears throat]
5. I had absolutely no sense of fear, at that time
6. Had absolutely no sense of fear at that time
7. Profanity
8. I can see myself in the, vineyard uh behind the national solider. It's to my right and I can see that lieutenant is to my left
9. Nothing
10. Emotional

[3] Since referential activity is captured with 25 words or more the measures may only be discussed for the longer segments of speech.

During the 3 following sets of bilateral stimulation (#11, 12, 13), the patient's language reflects a peak in WRAD, suggesting that he is immersed in telling his experience and may be in the symbolizing phase.

11. I remember, seeing my lieutenant and [clears throat] we got a bunch of crosses in the mail and uh he was a strong Christian man, as he said that he was. But uh he wouldn't, he wouldn't uh wear the cross because it had a, a ribbon on it. And he, never or quoted to use never use profanity but I took that in offense. He wouldn't stand up for uh his belief.
12. I see a Hum V [type of vehicle] sitting outside of the bunker through the door.
13. Remember staging uh to go outside of the gate and the, it had to go up to the CP. I remember everybody talking and distrust that he would do something to try to keep us out longer and then seeing him come back to the vehicle [clears throat].
14. A lot, a lot of mixed, things. I'm seeing like several different things right now.
15. Anxiety.
16. I just, I see uh just a, a blankness of, mixed like mixed things like I see, I see the, the road but it's just blank
17. Feel calm
18. Playing guitar [smiles, shakes head appearing in disbelief] popped in my mind
19. Like I'm on my bunk and I can, see kind of how everybody was um living. I mean, certain people that come to mind, that all live around me.
20. What comes to mind is [clears throat] um, private Cole threatening to kill me.
21. A lot more clear picture of what I saw in my living conditions. Like the people are starting to open up around the room. Now I'm starting to remember where everybody lived, which bunk they slept on. It's all. I can see it clear now.

During the narrative following the bilateral stimulation set below he describes symbols and struggled to decipher the image. The WRAD measures peak again suggesting the symbolizing phase.

22. It's really weird but every time I- every time I've done this (mm) now (mm) every time I shut my eyes, I see this symbol that um I don't I don't know what it is. But it's like, it's I see it immediately when I shut my eyes and I breath out. (mm) And the symbol looks like um, like it's a sketched tree, and it' s like uh sketched tree. Yeah almost like the tail of corn (mm) or something. (mm) Not corn but wheat (mm) but it looks like a tree.
23. Headache (mm). Yeah so it' s really weird
24. I'm not thinking of anything right now (mm) everything's completely black

The therapist directs patient back to the original image of the trauma, the lieutenant's face, to reevaluate the processing and inquires what comes to mind.

25. I see my, my lieu- lieutenant

26. Dead bird. (mm) Laying on the ground. (mm) [clears throat] I don't understand. That's what I saw.

The therapist states: “Let me just check out how your headache is now.”

The Patient replies: *No. It' s fine. It's just a sharp pain. That just came and went.* The therapist directs the patient back to focusing on the dead bird and facilitates another set of bilateral stimulation which leads the patient to state:

27. I, I don't know. I, I can't explain it. It almost looks like uh, a structure of some sort but I lost the, the image (mm) so I couldn't make it all the way out.

After the 27 sets of bilateral stimulation, the therapist asks patient to provide a SUD level. The patient reports a zero out of ten. When asked if his positive belief feels relevant or another belief is more appropriate, the patient changes “I’m confident” to “I have recovered” and provides his VOC rating (1 to 7) of how true it feels as a 6. The therapist initiates another 2 sets of bilateral stimulation with the positive belief and the image of the trauma in mind and the patient replies:

28. Back to a blank screen
29. Uh I was making something out but I, I lost it

He then provides a lower VOC rating (1 to 7) of how true it feels as a 5, decreased from a 6 moments earlier. The patient is instructed to conduct a body scan and reports tension in right leg, jaw, and left shoulder followed by a set of bilateral stimulation.

30. I see a, big bright yellow spot as in like if you look up at the sun (mm) that's what I what I saw actually. It went away. It faded out and then it came back.

The patient is instructed to do another body scan with the positive belief and trauma image, the lieutenant’s face, in mind and reports feeling it in his head and right buttock.

Bilateral stimulation and one last body scan are followed by:

31. Right back to that, black page.

In EMDR patient reports of "black" or "blankness" are an indication that there is no longer need for the trauma processing of the incident. The patient then reports feeling a headache. The therapist remarks that the patient has "done good work today" and the patient, unsolicited, expresses his experience of the EMDR. "I'm a little bit confused too, like some of the things, popped into my mind… but they do seem like they are connected". The therapist normalizes the experience and the connections and in line with the Closure phase, inquires about any positive statements or gains he wishes to make about the session, which is characteristic of this treatment and future sessions. The patient replies by calling attention to the smile on his own face and declines the offer to evoke the image of his safe place. As is typical of closing EMDR sessions, psychoeducation is provided about how the processing of the trauma may continue: "you may or may not notice new insights. Thoughts or dreams, memories, may or may not become apparent. Anything comes up I would ask you just to make a note of it bring it with you next time."

The therapist then asks for consent to use the recorded session material to train other EMDR therapists. The patient offers consent attributing it to the desire to "benefit others". As he signs the consent the audio fades off.

Results: Session 3

Overview:

Session three commences with the patient speaking nearly uninterrupted in a free associative manner and the therapist typically responding with non-interruptive language such as "okay" and vocalizations such as "mm". This beginning of the session is characteristic of the

treatment. The session then becomes more structured by the phases of the EMDR protocol commencing with therapist conducting the 8th phase of EMDR, Reevaluating. He checks in regarding the trauma processing of the incident of the lieutenant in the vineyard from last session. While at the end of last session the patient reported his SUD was a 0, he now reports a SUD of 1. Such shifts are common in EMDR and indicate that more processing is required. The EMDR phases 3-7 are then repeated to process the trauma. By the close of this session, the Subjective Unit of Disturbance (SUD) score shifts from a 1 to a 0. Other trauma incidents to process in future sessions are briefly discussed and the patient notices that processing the most disturbing trauma, last session, has generalizing effects on the other traumas as he speaks of them with less anxiety.

Line by Line Analysis:

Session three opens with the therapist inviting the patient to fill him in on what transpired since last session. The patient starts with a narrative high in disfluency suggesting the arousal phase. He discusses starting horse therapy and being assigned a "temperamental mayor" who "had to be led". His devaluing description of the female horse is similar to that of his ex-wife and the female TBI counselor. Without segue he switches topic to having moved into a new apartment and organizing a bachelor party for a fellow soldier.

The highest peak in WRAD occurs at this point in the session. Disflueny remains high and reflection fluctuates suggesting the symbolizing phase. This is early in the session, before the bilateral stimulation process. The patient returns to thoughts of the move and reports that he left after an argument with his girlfriend but was willing to give her a second chance as she provided to him in the past. He speaks of them both struggling with depression. In the narrative segment

he makes reference to insight about connections between affective states and behavior within himself and the relationship.

Uh, Jane [pseudonym] and I had a huge blow up and I left her at the bar. I took all of my stuff and left her. And um, it took me leaving her, for her to realize that she had been in a depression all this time and she contacted me and she was like you know, I realize you know, I realize where I've been messing up and you know. Would you please give me a second chance? And I said you better believe it because she is giving me a second chance you know. But it was, it got to the point where you know, I treated her bad and had not even realized that I was treating her bad, you know. I was in a depression. She got into the depression.

He then enters a reorganizing phase marked by high reflection and low WRAD. He discusses waking with night sweats but not having any nightmares since the trauma processing last session.

Lately uh the only changes I can see is uh for the last few nights I haven't been sleeping. Just that finding comfort in my sleep patterns. Uh, waking up and having from my knee down to my feet just soaking sweat. And it's not the rest of my body just from my knee to my feet and [clears throat] not quite sure what that is. It' s almost like as soon as I identify it you know, it dries up. (Yeah) but I don- it' s something that I've never been through before (mm). It just came out of the middle of nowhere or so. I don't know. I don't know if it's something that could be possibly caused from the medication I'm taking. (Mm) or (Mm) I'm not sure. (Yeah) But my uh, I haven't had a nightmare since the last time I talked to you.

The therapist asks whether the patient has noticed any changes in behavior. This question is immediately followed by an increase in WRAD and Refection and a decrease in disfluency suggesting the symbolizing phase. He is both reflecting upon and immersed in his narrative. The therapist intervention may have contributed to the quality of the narrative at this moment. He notes that his fits of rage are no longer present. He then associated to calling his squad leader to update him on his progress and feeling appreciative of the leader's returning the call since he could sense in his voice the "inconvenience".

After this initial free–associative like period, the therapist asks regarding the patient's feelings about the trauma incident with the lieutenant in the vineyard since processing from last session. The patient states that the thought brings a smile to his face and reports a SUD of 1. He elaborated that he felt some bodily sensation in response to thinking about the trauma but "I

mean, it's something that I can think about now and I really don't have too much issue with it." The therapist wonders if the patient would like to work on the trauma to decrease the SUD from 1 to 0 and they begin by recalling the calm safe place. As in the last session, the patient inquires if the therapist has visited his safe place, a beach. This was noted as a possible rupture in the Results of session 2.The therapist makes a point of saying that he remembers the safe place, has not visited and that he intends to. The patient sounds momentarily disappointed as the therapist proceeds with the EMDR protocol bilateral stimulation. Since there are very few words exchanged (below 25) in this dialogue there are no measures captured on the graph to reflect the quality of the narrative.

The therapist initiates the bilateral stimulation and asks the patient to follow the lateral movement of the therapist's fingers with his eyes. After approximately 30 seconds the therapist states: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. In the first set his disfluency is high but decreasing, reflection is high and WRAD is low suggesting it is the reorganizing phase. The patient response after each set is as follows.

1. *I feel awesome, seriously. I feel awesome. I feel like, I mean, I pictured , I pictured my lieutenant there standing, there with me after he threw me on the ground . And I just um, you know, I thought about what I, what I should have said to him right then and there. But I didn't and it doesn't affect me. It actually made me feel amazing cause as I was, as you were doing the treatment, I was thinking about these words that I, that I, would say to him. That showed me you know. It showed me as I was thinking to myself about that scenario, it sho- showed me where I was lacking. And that makes me feel much more confident.*
2. *Completely black.*
3. *Same thing.*

The therapist directs patient back to the original image of the trauma, the lieutenant's face, and inquires, "What do you get?"

4. *Just a picture*
5. *Just completely gone*

After the 4 sets of bilateral stimulation, the therapist asks the patient to provide a SUD level. The patient reports a 0 out of 10. The SUD decreased from a 1 to a 0. When asked if his positive belief feels "I'm better" feels relevant or another belief is a more appropriate, the patient changes it to "I've accepted" and briefly elaborates upon feelings of acceptance, forgiveness and appreciation to be alive. When prompted to recall the worst image of the trauma and think of his positive cognition, he provides a VOC rating (1 to 7) of how true it feels as a 7. The therapist conducts a bilateral stimulation as the patient links the trauma image with the positive cognition. The patient reports:

6. *Just relaxed*
7. *Same thing*

The therapist instructs the patient to conduct a body scan and patient reports no bodily sensations related to the trauma. He commends the patient on his hard work and the patient expresses relief and a sense of accomplishment in finally discussing the trauma. Typical of EMDR, the therapist gives the patient agency in deciding whether to process another trauma in session or wait until the next session. The patient discusses that the most distressing trauma is the one they processed last week and completed in this session. He feels it has a generalizing impact on the other traumatic incidents since in his view they all involve the lieutenant. The patient elects to work on another trauma incident next time and they identify targets discussed in the first meeting. The therapist inquires about any positive statements or gains the patient wishes to make about the session, which is a characteristic part of the Closure phase. The patient replies by discussing the importance of facing one's fears. He refers to a metaphor of a child who may have fallen off a ladder being taught to overcome his fear. He alludes to a break in communication as the

precipitant of the incident with the lieutenant and reflects on the EMDR treatment as a positive opportunity to “get emotions into it [the trauma] so I can get emotions out of it”. When the therapist asks how the bilateral stimulation feels, the patient says he feels it’s effective and notices a 5 to 10 second headache that dissipates. The patient then expresses positive transference suggesting that he trusts the therapist and the EMDR process. He states that the therapist is competent in the treatment so that he may focus upon his emotional processing.

As is typical of the Closure phase, psychoeducation is provided about how the processing of the trauma may continue after the session. The patient responds to the therapist’s psychoeduation about the EMDR process and reports accessing his affect through treatment. He conveys that EMDR is allowing him to “explore exactly what happened” and “get emotions into it”. He elaborates on his experiences after sessions. The narrative is briefly high in WRAD and Reflection and low in disfluency suggesting that he is in the symbolizing phase.

I go home and have complete silence in our apartment. Just sit down and um I just sit there and think about stuff and just completely relax. And but I'll pick one thing and I'll just stick with that because my attention of course since all of this happened

They agree to continue processing the next trauma target in the following session and as the patient leaves the room he asks about the therapist’s EMDR training seminar and the therapist confirms that he completed the seminar at another site. The patient may be wondering about how his recorded sessions are being used in the training. The recording fades out.

Results: Session 4

Overview:

Session four takes place 2 weeks after the last session due to the therapist’s conducting EMDR trainings at other sites. The session commences with the patient speaking about his increase in nightmares and about anxiety regarding the number of session remaining in the

treatment. The therapist responds with reassurance to provide as many sessions as needed. The patient then reports more about his trauma incidents and reflects on processing of the first trauma target processed in session 2 and 3. The session then becomes more structured by the phases of the EMDR protocol. The therapist works with the patient in the Assessment phase to define 3 trauma targets he wants to process and selects one to process within the session, an incident in which he was sent by his superior to an alley during fire fighting military engagement with a malfunctioning weapon. They conduct phases 3 through 7 of the protocol. By the close of this session, the Subjective Unit of Disturbance (SUD) score does not shift from the initial SUD, rating of 5. The therapist and patient use guided imagery to place the remaining trauma in an imaginary container.

Line by Line Analysis:

The audio sound of the recorded session four begins presumably moments into the session, in the midst of discussion about traffic patterns driving to the session. The therapist asks the patient about how he has been since the last session, which is typical of the beginning of sessions. The patient reports an increase in his nightmares and indicates that the intensity of the nightmares is similar to that which he experienced upon return from deployment. He expresses confusion, and seemingly underlying anger, about the increase in nightmares following a successful trauma processing last session wherein the SUD level reached a 0. The veteran discusses an increase in his anxiety during a recent session with his TBI counselor in which he was instructed to watch clips from past military engagements. While veterans who return from deployment are commonly seen in multiple treatments, the impact of the simultaneous treatments is a confounding factor in assessing the patient's EMDR treatment progress. At this phase in the

treatment it is possible that exposure to the visual imagery of a military engagement in another treatment contributed to the patient's increase in symptoms**.**

In the initial narrative segment of the session, the patient's WRAD varies slightly but remains mostly high while reflection and disfluency fluctuate, suggesting he is in the symbolizing phase.

It's almost like my mind is programming possible scenarios and it's including family members (mm) and friends (mm). Like uh one of the nightmares I had, had my mother in it and it was just that she was present (mm) in the nightmare. Uh (mm) she didn't play like a, a major role or anything. She was just in the in the nightmare (mm) I, uh last night was pretty bad too. I actually, I don't think I actually got to bed until about four. And I had my alarm set up for five. And I was like, cause I woke up, I think I went to sleep for an hour. I woke up at three and I was like man, I'm gonna stay awake try to get this out of my mind a little bit. Went back to sleep at four try to get up at, at five.

He then explicitly expresses his fears about treatment termination and being left to cope with the trauma memories:

I was afraid to come here today because I was like, man what if you know, I know that we've only got two sessions left you know, it' s like man what if I open another [trauma incident]

The therapist replies:

"Yeah. So here is my commitment to you. It's that we got as many sessions as we need to give you, finish with this. So, I will see you as long as I need to see you to get this through."

After this exchange, there is a shift in the patient's content and affect. It is possible that he feels soothed by the therapist commitment, particularly in light of the recent 2 week hiatus in treatment. With the treatment frame secured, he is able to shift away from reporting symptom intensity, perhaps unconsciously trying to engage the therapist. He begins elaborating upon his fears of abandonment by the therapist and reporting ways in which he has felt alleviation of symptoms.

It, it really was scaring me (mm) to think that I can come in here and the next couple of times and now boom I'm just on my own

His narrative then moves back and forth between noting these fears and reflecting upon his improvement in treatment thus far. He proudly reports that he was able to be social, exhibiting a decrease in his PTSD withdrawal. The patient then discusses how processing the most disturbing trauma with the lieutenant in session 2 and 3 has positive generalizing effects in being able to process the next trauma targets. Here there is a sharp increase in the WRAD.

I'm glad that I picked [clears throat] the vineyard first because that was, that was like a one on one real confrontation with my lieutenant. You know, really everything stirs around him.

The patient continues to discuss the trauma incident in more detail. Towards the end of the segment high in WRAD, reflection increases suggesting he in a phase of symbolizing and then moves towards reorganizing about forgiveness and acceptance rather than blame of the lieutenant.

Now that we- we've attacked uh the lieutenant, I look at his decisions that he made, like with the uh [clears throat] with the Jara [location] incident (Mm) of where, called out to do a patrol. We were just doing normal patrol, calling on the phone that uh, uh there was a child that was blown up in the center of the city. So we got dispatched to go out there. (Mm) and you know, kinda perim-perim- perimeter it off and just to check and see if anything is going on. We were not supposed to go in to that area of operation (mm). It wasn't our area of operation. We were just supposed to go, on the outside and patrol. (mm) Uh lieutenant heard some, fire being taken and instead of getting on the radio or doing anything we just went straight in (mm) and it was basically just a set up ambush. (yeah, yeah) And uh, you know, for me to accept there was a brand new lieu- lieutenant. (mm) I mean, lieutenants (mm) they have a certain amount of training (mm). I have to accept the fact that, he had to make a decision at that point (mm). He had to make a decision on, based on the situation and regardless if it was right or if it was wrong, I mean, there were guys in there that knew it was the wrong scenario. That we were not supposed to go into that area of operations but nobody said anything. They just allowed him to lead us in (mm). So I've thought about that a lot you know. I really can't throw a lot of the blame onto him because it's staff sergeants that train lieutenants.

The following segment is precipitated by decreased Disfluency. The narrative captures an increase in Reflection about the impact of the trauma and his EMDR process and suggests the reorganizing phase.

I mean talking about this stuff (Mm) and doing the EMDR has been opening up a few things (Mm). It brought up something that my mind completely covered up. And this is something that I know we need to uh touch base on (Mm). Not so much that I ha- I have a sense of anxiety, but I know that it was a very traumatic experience (Mm) and I don' t remember a lot of it but I think the more that I talk it through with you the even more will come out.

Then, he discusses a different trauma in which his life was threatened by a fellow soldier. The language depicts a sharp increase in WRAD which suggests the symbolizing phase.

Back out the fog at our bunker, uh there is there uh a solider and his, his name was James at the time. He was another seargeant. Him and I got into some kind of dispute and, he uh, he grabbed his weapon system and threatened to kill me. And we had actually taken this outside and he was holding his weapon system up. Now I don' t remember everything that was said. I don' t remember all of my actions (mm) but I do know that his weapon system was loaded and I do know that anytime he could have killed me.

The patient and therapist discuss which trauma target the patient wants to process in this session and which targets they will process in future sessions. The therapist then offers the possibility of meeting twice per week and suggests discussing scheduling at the end of the session. It is unclear but it appears he might have offered an increase in frequency due to logistical aspects of the treatment (the number of targets, scheduling) or perhaps he was pulled to action by the patient's earlier anxiety about abandonment.

The therapist begins the trauma processing. He asks the patient if he recalls his safe place. In this session, unlike the last 2 the patient does not ask the therapist if he has visited this site, a beach, and then express disappointment with the therapist for not having visited. There may be numerous reasons for this change. It may be attributed to the repair in the relationship when the therapist addressed the patient's anxiety about the treatment frame and indicated he would treat him as long as needed. Alternately, he may be avoiding the question to avoid disappointment.

The therapist requests that the patient recall a mental picture of the worst part of the trauma in the military engagement in Jara (location pseudonym). The patient states that there is a

particular alley. The therapist asks what negative belief exists and what positive belief he would like to have about himself related to the image. The patient replies: “scared” and the therapist clarifies that is an emotion. After briefly thinking and describing the feeling, the patient replies “I’m stuck”. He offers the positive belief “I have control”. The patient rates the veracity of his positive belief on a scale (the VOC) of 1 to 7 as a 4. The emotion he feels is fear. The level of Subjective Units of Disturbance on a scale of 0 to 10 was reported as 5.

As the patient focuses upon the worst image of the trauma and the negative belief, the therapist begins the bilateral stimulation and asks the patient to follow the lateral movement of the therapist’s fingers with his eyes. After approximately 30 seconds the therapist inquires: “Take a deep breath. Let it all go. What do you get now?” The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

In the first set the WRAD is briefly above the neutral midpoint and disfluency is briefly above the mean. After clearing his throat numerous times earlier throughout the session, here the patient is able to notice this sensation.

1. *I got uh notice a tightness in the back of the throat (mm.) Um, it was really hard for me to try to keep the focus on the situation and um I got a little bit of a headache (mm, Okay). But nothing that' s not lingering. It just kind of came and now it' s going.*
2. *I get the, anxious and it’s like I'm, like I'm, I’m back feeling that fear.*
3. *I’m feeling almost like, nauseous*
4. *Yeah the nauseousness is not there but I feel really spacey right now.*
5. *I’m noticing that my body is like having spasms (mm) Yeah mostly on my left side of my body, my arm, my chest my like pelvic area, my buttocks (mm) and my left leg (mm). It' s not so much on the right hand side of my body*
   Well now I’m not thinking of the situation so much. I’m more thinking about my body now.

   In the following segment the narrative is briefly high in reflection and low in WRAD suggesting the reorganizing phase.

6. *What I notice is that when your, fingers were, most to the left (mm) that my butt was almost like clenching and I have the sense of anxiety every time that I’m looking off to the*

right (mm) it' s like [takes deep breathe] it's like I'm getting these anxiety feelings (mm) but I can't pair it up with anything.

The therapist then tells the patient that it's his unconscious processing and continues with the bilateral stimulation.

7. *I, uh it was pretty much the same thing.*
8. *It's weird I'm still like really anxious that my body's doing, crazy things (mm). I don't have my mind on anything except for the exercise*
9. *Pretty much the same thing. I, just have uh, slight headache on the right temple.*

The therapist tells the patient he is going to shift the modality of the bilateral stimulation from the hand movement to the tappers. The tappers are penny size pods, one for each of the patient's hands which alternate vibrations. The therapist does not explain the reason for changing the modality. The therapist introduces it to the patient and the patient states: "It' s crazy. It's pulling my eyes to one side to the other." They continue with the bilateral stimulation.

10. *It just, I really notice the uh, how my, eyes were working with my (mm) with the vibration of my hands, went from one side to the to the next (mm). I mean, I'm feeling more calm now because that's where my focus is.*
11. *Mean, I'm seeing the same exact thing. I'm seeing us in the alley (mm). I'm seeing sergeant Calvin in front of me and lieutenant behind me.*
12. *Um okay wha- what came to my mind is uh when the fire started coming in I'm thinking where the hell is this coming from? That' s exactly the words that I was thinking.*
13. *That was I just feel like a shock on my body. I don' t know where it came from.*
14. *That was a strong one (Mm). Yeah I'm just kind of blank right now. I mean, I'm still thinking of the alley*

The therapist inquires if the patient believes his current body sensations are related to the trauma experience. The patient wondered if he is experiencing the sensation of hitting the concrete when he took position with his gun in the alley. They continue with bilateral stimulation.

15. *Just, just kinda blank*
16. *Uh when I jerk that time I was thinking, of the rounds I should have fired to the air (Mm) so that could definitely be tied into into the actual sound of the rounds.*
17. *Just, just kinda blank.*

18. *They weren't hurting before.*
19. *That time when my leg shook I had uh a shooting pain coming up my leg (mm) and I had another, uh hit and then that really tensed up my jaw (mm). It's like it happened right there towards the end.*

The therapist asks the patient to return to the original image of the trauma and the patient imagines : “Well I see myself pinned up against the wall (mm). I see the alleyway”. They proceed with the bilateral stimulation.

20. *I have no idea what my body is doing (mm) but I was sitting here thinking about it. Uh, trying to progress my mind a little more into the rounds. I should be going by and seeing the rounds (mm) following (mm) and that' s why my body was doing things like that.*

The therapist clarifies that the patient’s body was responding to the trauma incident. In the following 6 bilateral stimulation sets the therapist talks to the patient reminding him that the incident is in the past, grounding him partly in the present session.

21. *Well a lot more relaxed.*
22. *Um, I can see myself inside of the school now.*
23. *Uh all I have is this uh a vision of us, consolidated at, at the bottom of the stairs. We haven’t went anywhere (mm). That's, that's it.*
24. *That I’m on a the roof of the school. I climbed over the wall and I’m like looking around seeing people that are firing down at the enemy.*
25. *Confusion.*

In this last narrative of the bilateral stimulation the Reflection is high, while disfluency is low; however, the patient illustrates direct discourse, as if he is speaking directly to the superior who he feels endangered him. While the high Reflection measure suggests the reorganizing phase it is possible that in this short narrative segment the dictionary captured the words “thinking”, “focusing” and “confusion” which led the DAAP to suggest high reflection. This is the only time in the treatment when the patient exhibits direct discourse, possibly an indication of the immersion in retelling. It is possible the level of disfluency and arousal may have been

underestimated in the Disfluency dictionary. This sheds light on the importance of qualitative reading of session materials to accompany all DAAP findings.

26. *Just that I was really focusing on my body' s reaction and I was thinking of the word confusion (mm, mm) and it ties in a lot of things, it ties in, you knew my_weapons system is broke, why did you call me back out to going uh patrolled around the area (mm)? I mean it' s just a lot of confusion*.

The therapist asks if the patient would like to stop for the day. They debrief regarding the session. The patient focuses the discussion about his positive experience of the new bilateral stimulation modality, the tappers. They agree to use it going forward. He comments on the trauma processing stating "I've been stuck on just the just the alley scenario (mm) and now I'm on top of the roof". The feeling of being stuck was the patient's negative cognition and in this excerpt he alludes to a shift in the ability to access later material in the memory, no longer being "stuck"" in one site, the alley. On another level he is referring to progress in the trauma processing.

Upon deciding to stop the trauma processing for this session, the therapist guides the patient in developing imagery of a sealed container to hold the trauma memories until next session. The patient describes a steel container and likens it to the size of the therapy room, possibly indicating his sense of containment and safety in the treatment. The description of the container is based on an image he refers to from a film in which Einstein is a character. In the following segment the Disfluency and WRAD exhibit the same patterns, starting high and then decreasing suggesting the symbolizing phase.

No, but Einstein you know, the young Einstein he tried to um had this theo- theory to come up with a nuclear bomb (Mm) and so and then there' s this a huge capsule of which holds the nuclear device (Mm) and it' s very well put together and it' s, it' s all made out of steel. And there is a door on it that you can access and you can put it your clothes and it' s big. It' s probably about as big as this room (Mm) so that' s going to be my container.

Towards the end of the session the highest period of the patient's reflection occurs suggesting the reorganizing phase.

I didn't realize like how far this would come (mm) you know. I didn't realize how, how much my body and mind would be processing from (mm) all of it.

The therapist responds, by explaining the impact of trauma processing on the body: "so what you found yourself doing was reacting um, in terms of body movements and sensations and all of that was part of that memory". This explanation is followed by the patient describing his physical sensations. It is not clear if these sensations are due to the arousal of PTSD or to the processing from EMDR in which the trauma is released through the body as well as through the narrative. Following the therapist's psychoeducation, there is a significant increase in the patient's WRAD suggesting the symbolizing phase. This pattern is evident at several points in the treatment suggesting that the therapist intervention of providing some structure and normalizing may allow the patient to feel safer and access his experiences with more clarity and vividness.

It' s funny. It makes me think about when I'm standing up in front of a board or whatever. (mm) the same thing is happening to me. It's not so much as a nervous it seems like I'm just shaking (mm) but there is a lot of things that happen. And it's the same thing I had my haircut today and I noticed I was just sitting there just in a state of like just trance and I was noticing like little neck jerks and muscles doing things out of the ordinary.

The therapist provides psychoeducation about EMDR. They discuss scheduling the next session within the week or next week. The patient expresses anxiety regarding the trauma processing, especially more vivid memories and nightmares. He concludes with preference for meeting more frequently. "*I mean, to be honest with you I mean, I am scared of doing this now (yeah) so the more we do it the closer together it is the better it is."*

The therapist inquires what the veteran's SUD level is regarding the trauma. While at the end of the bilateral stimulation he stated a 5, indicating no difference from the beginning of the

session, at this point he states it's a 3 or 4. The patient plans to exit to retrieve his calendar from his truck and they plan to meet at the entry window to schedule the following session. The tape recording ends.

Results: Session 5

Overview:

In the last session, the therapist eased the patient's anxiety about the initially definitive number of sessions offered and committed to provide the number of session needed to complete the trauma processing**.** In addition, they agreed to try to increase to bi-weekly sessions.

Session five commences with the Reevaluating Phase of EMDR with the therapist inquiring about the patient's nightmares and SUD rating of the trauma targeted in the last session, being sent into firefighting with a malfunctioning weapon . The patient enters a long narrative indicating significant improvement in symptoms and reflecting upon a positive interaction with a fellow veteran about EMDR treatment. The session then becomes more structured by phases 4 through 7 of the EMDR protocol. The trauma target from last session, being sent by his superior to the alley during fire fighting military engagement with a malfunctioning weapon, begins at a SUD of 1 and ends at 0. At the end of last session the SUD for this trauma target was a 3 or 4. Presumably some processing continued internally between sessions. A second trauma target is processed, his life being threatened during a dispute by a fellow solider with a gun at the barracks. The SUD level begins at a 3 and ends at 0 by the close of this session.

Line by Line Analysis:

The therapist asks if the patient continues to have nightmares and follows up inquiring about any developments since last session. The patient responds by reporting not having any

nightmares and discussing an interaction with another veteran, the evening prior, in which they bonded over military experience and both benefiting from EMDR. In this interaction, the patient exhibits some trust of another and a decrease in withdrawal. The ability of the patient to speak about rather than avoid memories of his traumas, to experience only mild anxiety in discussing the traumas, and to support and feel supported by another elucidates the decrease in his PTSD symptoms. The session commences with the patient's narrative reflecting high WRAD and high disfluency suggesting the symbolizing phase.

No and I got up on time for work both days (oh). Made it to work on time (yeah) so yeah that's uh that's a definite plus (yeah) [therapist laughs].[patient clears throat] Well last night I met with a uh, a retired police officer and uh, he's a just basically a friend of a friend he was outside the apartment I uh went down and kinda have, had kinda a therapeutic session with him (mm). He told me that he's uh, he had started EMDR a few years back after he got out of the force and uh what he had actually, he started it he did, did it a couple of times (mm) and um didn't really see too much of a difference but he went back. And uh he said after two sessions it was just it was all in. It's uh he basically said that it's changed his life. You know, it's really helped him a lot. And I- he brought that up without me even mentioning that I was in EM-EM, doing EMDR (mm) and I was like wow. I was like I'm doing the same thing you know, and he said that's awesome (yeah). I brought down you know, some loud words (mm). Some of the different things we talked through different uh scenarios. He talked about you know, some of the things he was faced with as a police officer. Even in a small town in Wyoming (mm) and then I talked. I talked about some of the things I've been faced with and I noticed that my level of anxiety was a lot lower (mm) like I really didn't kinda have a hard time reading the award but I was actually talking through the scenario it wasn't, near as bad as it used to be (yeah). So and he did mention he was like you know, um I gathered up some stuff. He's out here visiting his daughter. He wanted to come and see Fort Smith and uh gather up some stuff some extra stuff that I had to give to him you know, just to make his time here memorable (yeah). Uh that was, really nice for me. It made me feel really, really good to be able to give him a piece of wha- what I'm a part of (Sure,sure) and after I did that he invited me up and uh he gave me one his uh off duty badges and a uh and a knife (mm) that he had carried for a long time in the force or whatever (mm). So it was uh like I said he mentioned it was very therapeutic and it, it was for both of us to be able to (yeah). He said he hasn't express his feelings about a lot of the stuff that happened for a long time.

The patient then reports that he is relieved to have restorative sleep. They agree to continue the trauma processing from last session. The therapist requests that the patient recall the trauma incident but the patient does not recall which trauma and attributes it to the imagery exercise of keeping the trauma in a container. When cued by the therapist he immediately recalls

the incident of knowingly being sent into a firefight with a malfunctioning weapon by his superior. The patient states his emotion as “I don't feel anything.” The level of Subjective Units of Disturbance on a scale of 0 to 10 was reported as 1 and is felt in the chest.

As the patient focuses upon the worst image of the trauma, the feeling in his body and any related emotion, the therapist begins the bilateral stimulation with the tappers. After approximately 30 seconds the therapist inquires: “Take a deep breath. Let it all go. What do you get now?” The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

1. *Relief*
2. *Same thing. I was just focusing on, on the relief of the situation.*
3. *Completely at ease with it*

The therapist asks for the SUD level and the patient replies: 0. The therapist asks if his positive cognition, “I have control” remains relevant or if following the processing there is a more appropriate phrase to reflect his feeling. The patient’s increased ability to trust others and seek help is reflected when he uncharacteristically asks the therapist for help and decides his positive cognition is: “I am brave”. He remarks that the trauma processing allowed him to now see the memory as integrated.

I'm trying to come up with a word for it (mm). Maybe you can help me out? (mm) It’s, it's more vivid it to me now (mm). It' s uh, I can see the situation, more as a whole now then. (mm). So, I think I have a better understanding of the situation as a whole.

Therapist: You say you' re looking, looking for a positive word. Um what word would best express a positive feeling about yourself now as you recall that incident*?*

Brave.

The patient rates the veracity of the positive belief when thought of along with the image of the trauma from 1 to 7 as a 7. The patient scans his body during the bilateral stimulation.

4. *Nothing at all.*

The therapist explains that that trauma has been processed since the SUD is 0, the VOC is 7 and there is nothing arising in the body scan. He and patient discuss the next target and if he would like to begin processing today or the next session. The patient selects a target with a low SUD, his life being threatened during a dispute by a fellow soldier with a gun at the barracks, and indicated he would like to begin in this session. The worst image of this trauma is the other soldier holding his weapon. The negative belief is: "I am uncaring" and the positive belief is " I am empathetic". The VOC, scale 1 to 7, linking the positive belief to the image is rated as a 5. The emotion is scared and the SUD is a 3. The patient feels the trauma in his lower back, gut and chest. As the patient focuses upon the worst image of the trauma, the feeling in his body and any related emotion, the therapist begins the bilateral stimulation with the tappers. After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

1. I can feel like um, just saying, just saying that to myself. I am uncaring and looking at the situation, um, in my head I was asking, uh, Private Cole why this all started because that' s something I can' t remember. I' m trying to trigger that in my brain and I, I got a sense of like um the shooting anxiety (mm,mm.). It' s like the your nerves (right, okay). I'd say it was probably like a two.
2. *Still confusion.*
3. Well this time when I was thinking it through. I had some like, um muscle spasms in my left side of my body and in my back.
4. Now my, my body was just doing the same thing it was doing the last time. It was really reacting to whatever. I can' t really explain it.
5. Just, uh, I feel less confused but I also feel less uh focused. Uh I mean, that isn't overall I mean, that is when I uh when I was looking at the situation, this time. I felt that if everything was kinda, kinda blurry (mm.) this time.

6. Well, I, uh, was saying to myself that um, I don' t have an understanding, of why this happened. But I was telling Private Cole in my head that, you know, I don't know why this started but I must have triggered something. And you know, I apologize for whatever I did or you know, the, the word, uncaring popped up in my head. So, I don't know if that was an actual emotion but that's something, that it hit home when I thought of the word so I (mm) I was thinking I must've, I must've done something, to trigger him. So I, I asked him for forgiveness in my head you know (mm). I have, I have a good calming of it. But there's still a sense of anxiety.
7. Really [clears throat] really just still trying to, work everything out. I have my anxiety it's not as bad as it was before (mm) thinking it through. But it's, it's spending a lot more time trying to diagnose and everything. Trying to (mm) paint the picture of where we were, and how the situation started (mm). So that's, that's really where I am right now.
8. Really relaxed, thinking it through. It's, just for whatever reason how my mind decided to react on this one. That I'm having a hard time recalling (mm) you know. I'm having a real, real hard time recalling the situation.

In the following segment the WRAD briefly rises above the neutral midpoint. Reflection starts high and gradually decreases as WRAD increases suggesting the reorganizing phase.

9. It' s funny. I think I just figured out the link. I think I figured out the, the whole link and what I need to do, to get resolution on this. And that's I need to contact Bob because he was present and he has a very good memory and I, I think he he'll remember more in detail. He was present during this and I haven't spoken to him about it so (mm) he uh, he had actually showed up. In the room I saw that he was across from the bunk from me. So, if he was, if he was present he sh- he should have some memory of this.

The therapist inquires what the patient experiences when thinking of the trauma image and the patient replies that he no longer experiences fear and is eager to complete resolution with the incident. They complete the bilateral stimulation.

In the following segment Reflection is high while WRAD and disfluency are low suggesting the reorganizing phase.

10. The word tha- the word popped, just popped into my head is acceptance (mm) and I was just I was thinking about a conversation with uh with Bob, and thinking about the entire situation. And if it was, if I was at fault that I would be able to accept it. Because for whatever reason I cannot remember exactly what triggered him. I know that there was uh a dispute but I don' t remember what it is so (mm) trying to set myself up for, that if I was that trigger to why he you know.
11. I would say that the uh it's probably about the same. But I feel that my um, my mind is opening up more so it' s, it's that the uh my anxiety is still there but I feel that I'm, um more willing to, to attack the situation now.

The patient reports a SUD level of between 3 and 2. In the following segment the patient begins to articulate gratitude for surviving and a separation between past and present, another indication that his PTSD symptoms are decreasing.

12. Well I started uh saying to myself, you know, what, what level of disturbance is this really? And the past is the past. I can't, I can't change you know, what happened. I mean, we're thankful, very thankful that we're still alive. And that you know, I shouldn't be pondering on something that's done. So and I was very relaxed when I was doing that.

In the following segment the patient gains more access to other parts of the trauma memory, particularly what precipitated the life-threatening incident. The theme of boundary violations arises again. In part, he was triggered by what he perceived as the other soldier's intrusive nature.

13. I think I'm gaining some understanding of um, why this situation could have occurred. And uh just really narrowing it down and, the type of, the type of person that he is and the type of person that I am. There was a conflict of interest there from the start. And uh he's the kinda guy that really like to get involved with whatever was going on. And I do I believe that, there was a conversation that was going on and he came into that conversation. And I, I think that' s how all this got started.
14. Pretty uh, pretty calm about it. Thinking it you know, th- thinking about it now I'm pretty calm.
15. I could definitely feel that I'm uh gaining acceptance wi- within myself (mm) and uh, that will power, inside myself is coming out to honestly accept this (mm). Rather than like ponder on it.
16. Nothing really. I mean, I just, yeah.

The patient's SUD is 0 and they conduct another more bilateral stimulation set. The SUD decreased from a 3 to a 0. In the following segments the patient describes the experience of a somatic release of the trauma memory.

16. I can almost feel, this is crazy to say but I can almost feel like this anxiety trying to leave my body (mm). It's like it's, it's not, it's not disturbing me. I-I, it' s a weird kind of anxiety. It's like it's trying to leave my body.
17. [Smiles, shakes head] It's, it's crazy. It seems like everything went to right here [points to left lower abdomen].
18. I almost feel like I could throw this up if I, if I wanted to (mm). I could feel that there was even, that I could feel it my legs anymore (mm). I could feel it a little bit on the back of my right kidney and then it also like shot over (mm). So I'm not feeling it at all right now. Um, but as I

was focusing on my body I was um telling myself, motivation. I was telling myself [clears throat] you know, that I am strong, that I am brave and that I can you know, fight this anxiety. And I was asking the anxiety to leave my body [Clears throat].

After the 18 sets of bilateral stimulation, the therapist asks the patient if his positive belief "I'm empathetic," feels relevant or another belief is more appropriate. The patient changes the belief to: "I'm rational". When prompted to recall the worst image of the trauma and think of his positive cognition, he provides a VOC rating (1 to 7) of how true it feels as a 7. The therapist conducts a bilateral stimulation as the patient links the trauma image with the positive cognition. The narrative is high in reflection, the highest reflection segment in the session. WRAD is starting at slightly above the neutral midpoint and decreasing. The language reflects that he has gained distance from the intensity of the trauma. This pattern suggest the reorganizing phase.

19. Well with the word rational I strongly believe that, [clears throat] whatever the scenario was, there was the confrontation I think. In that confrontation the we, uh, we came to an understanding that I had to be rational, towards the whole thing. That it was, if it was a fault of mine, it was something that I had to admit to right then and there. So you know, rather than being irrational and acting act or doing something, I was able to be rational so that's the way that I feel now. So that definitely stands as a seven.

The therapist instructs the patient to conduct a body scan and patient reports no bodily sensations related to the trauma. He begins the Closure phase of EMDR. He commends the patient on his hard work and inquires if he wishes to share any insights that he gained from the processing in session. The patient expresses that he is enjoying the treatment and appreciating the realization that he may communicate with his body to foster healing.

In this segment the patient verbalizes one of the key healing processes in the EMDR treatment. He elaborates that the experience is both mental and physical. He reports that observing his somatic reactions rather than merely allowing them to occur in a disconnected manner has felt productive. While he feels the trauma is resolved, he remains aware that there are

fragments he cannot recall. He illustrates awareness that his response was normative when in a life-threatening situation.

The therapist reminds him that trauma processing may continue and he should write notes of any new thoughts for the next session. When the therapist reminds the patient of his calm safe place, the beach, the patient remarks that he is amazed that he had no need to call upon the image during any processing since session 2. In the patient's explanation of no longer relying on safe, calm place imagery, it appears that the relationship to the therapist has served to substitute for the imagery of the calm, safe place. The patient expresses that as he grew more comfortable with the therapist he did not feel a need for the calm, safe place.

Results: Session 6

Overview:

Session six commences with the patient speaking about various concerns. The therapist redirects the patient and commences the Reevaluating Phase of EMDR by assessing his frequency of nightmares and SUD ratings of the 3 traumatic incidents processed in earlier sessions. The patient reports that while the SUD level for the incident with the lieutenant remains a 0, he feels slightly tense thinking about it. The therapist and patient conduct several sets of bilateral stimulation to ensure the SUD is truly a 0. The other two incidents, the military engagement in the alleyway and the soldier threatening the patient with his weapon, remained at 0 SUD level. In this session they do not process a new traumatic incident. Rather the patient feels the alliance is strong and reveals to the therapist concerns about what he perceives as compulsive behavior. They enter a lengthy dialogue about the patient's preoccupation with masturbation and pornography. The therapist's interventions are uncharacteristic in the latter half of this session in

that he provides a lot of psychoeducation and self disclosure. It appears the therapist feels activated to help the patient and the patient responds with feeling safe and that his experience is normalized.

In this session, the HPWRAD is the lowest of all 10 session. The HPWRAD, the proportion of words above neutral midpoint of WRAD in a segment, is .13 in the session. In other words, 13% of the time the patient speaks, his narrative is above the neutral midpoint of WRAD in the given segment. It is notable that within this relatively low HPWRAD of the overall session, the 3 points during which the WRAD peaks in this session are markedly high when compared to all 10 sessions. The WRAD at these points lies between, all between .58 and .64, illustrating that when the patient is immersed in his narrative, he is *very* immersed in it.

Line by Line Analysis:

The session commences with a typical opening question from the therapist, asking the patient about how he has been since the last session. The patient responds with a lengthy narrative, initially high in disflueny indicating arousal phase. He discusses cigarette addiction, ceasing his 3-day trial of a sleeping medication and poor sleep hygiene, such as daytime naps.

Uh well um that um [clears throat] the night, the night of I had nightmares (Mm) but I haven't had any since. So (mm.) uh [deep breath out] yeah I don't know if it was the, you know, the stress of everything that I went through that day.

The therapist asks the patient to specify any recent relaxing periods of time. This question is not part of the EMDR protocol per se. It is possible that the therapist is consciously or unconsciously shifting the patient's focus to his strengths rather than his struggles after successfully processing several trauma incidents in the past several weeks. The patient briefly complies and discusses enjoying playing music and explicitly requests to return to the topic of his cigarette addiction, "impulsiveness", delinquency in paying bills and concern about his not

caring for others prior to being held accountable in the military service. The patient remains in the phase of arousal indicated by high disfluency and low WRAD:

Falling delinquent with my bills. And thinking that you know, someness- somethings are, are a necessities when really when they're not (mm). And uh, I think that, that part of me, that, that narcissistic part of me, is, is where that kinda lies. It's like, it's not so much, I don't having feelings for other people or whatever (mm) but it' s you know, the impulsiveness.

As it will become more apparent later in the session, the patient is attempting to broach concern about compulsive masturbation, about which he feels shame. The therapist initially misses the cue or chooses to stay on task by reevaluating the EMDR processing but he later addresses this concern with the patient.

The therapist reevaluates the trauma targets that were processed. The patient reports a 0 SUD regarding the military engagement in the alley and a 7 VOC for "I am in control." Similarly he reports a SUD of 0 regarding the incident in which another soldier threatens him with a weapon and a 7 VOC for the positive belief "I am empathetic."

The patient reports that while the SUD level for the incident with the lieutenant remains a 0, he feels slightly tense thinking about it. The therapist and patient conduct several sets of bilateral stimulation to ensure the SUD is truly a 0. The patient reports a VOC of 7, feeling that his positive cognition, "I am confident," is completely true and remarks that he has been "standing up" for himself in interpersonal circumstances since the processing. His body scan reveals tension in the middle of the back and the buttocks. They conduct several sets of bilateral stimulation with the trauma image and the positive cognition.

After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

1. *Noticed some sensation in my feet (mm) and just uh kind of a warm fuzzy (mm) kinda feeling in my feet.*
2. *Pretty much the same um, same sensation and I' m not sure if it' s- I had a Mountain Dew today (mm). I don't know that' s the caffeine that's doing that. (mm) cause it's the same sensation. The only difference that I noticed was with my feet (mm) but I' m still, I'm feeling that same sensation even right now (okay). So I'm not sure.*

The patient's narrative in the following segment is high in Reflection and in WRAD. It captures both reflection upon and immersion in his narrative suggesting the symbolizing phase.

3. *Well when I'm focusing on my body it's, it's pretty much that, the same thing. Um I do have that kind of the, it's really hard to explain, it's almost like a sensation in my in my buttocks (mm) you know, (mm) but and that's really in my feet. It hasn't come back to my feet but I felt the sensation in my, in my buttocks.*
4. *Yeah the, the more I focused on it the more like intense that it became. I started to feel it a little more (mm) in my back (mm.) So kind of shooting up into my back.*
5. *Now what I notice is that just as the, the sensor shut off uh I got I got some feeling in my in my feet again (mm) but I was. I also had, it was coming and going was the sensation I had before (mm) but yeah just, just as it shut off I got the sensation in my feet.*
6. *Yeah, I mean, that time I was perfectly fine. No sensations. You shut it off and I got like a, a surge through my body (okay). Yeah that was weird.*
7. *The same thing happened but it was it wasn't as intense (mm) but the same thing still happened.*
8. *Something that that popped up in my head other than what I was focusing on. (mm) um, is that um, my focus is so much better (mm). Something that popped up in my head is that I don't have all these other things going through my head (mm). Like when we first started seeing each other (yeah). Um, it was weird I was focusing on and I didn't feel anything about it (mm) but I didn't have anything else popping into my head (mm) and, and I feel comfortable with that. (yeah). I was really frustrated before with all these other things popped up into my head (mm) so now I can just focus on this one thing here and (mm) so it feels really good.*
9. *Now my brain is really working cause uh um I'm starting to get a little bit of a headache. I can feel that my (mm) eyes (mm) is they're, they're working along with you know, (mm) working the muscles behind my eyes. I guess that's what I'm looking for so.*

After the bilateral stimulation sets the patient conducts a body scan. In verbalizing his experience to the therapist his disfluency decreases. The therapist asks a question about his bodily sensation and immediately following, the patient's reply reflects increasing WRAD. This pattern suggests the symbolizing phase of the referential process. Here is another example of the therapist's intervention aiding the patient to shift from the arousal to the symbolizing phase.

I'm trying to do a comparison. If um, almost like when you're, when you're cold and you start to get the shivers (mm). Sometimes you feel that sensation like in your ears (mm) and up the back of your neck (mm) kinda got the same thing. And it was like through this portion back of my head.

The therapist then asks for clarification regarding his bodily sensations. The patient's reply reflects one of the highest WRAD segments in the treatment with very low disfluency and reflection suggesting the symbolizing phase.

That was the whole tingling (okay) and I did a full scan to my feet. That was the whole tingling (mm). I didn't feel anything. I came all the way back up and that's when it happened (mm) and I was doing a visual of every portion of my body. All the way down to my feet, when I came back up I got to my neck (mm) and once I got to my neck I felt that sensation in my (mm), in my head (mm), in my ears.

The patient and therapist have a dialogue about the bilateral stimulation process, how it feels somatically and the impact upon treatment. In this discussion the language of the patient may reflect his preoccupation with wanting to discuss his concerns about compulsive masturbation.

They have like a nervous jerk and it's, it's uncontrollable. It's like something (right) is firing within themselves. It's something that they just can' t control.

The therapist then develops a metaphor about the trauma processing and the patient replies joining in the metaphor. While EMDR encourages the therapist to use metaphors in the Preparation phase, the patient spontaneously responding with the metaphor may indicate that the trauma narrative is less embedded. The therapist becomes verbose, explaining the trauma processing and providing metaphors. While metaphors created by the trauma survivor reflect an attempt to comprehend the trauma and reduce its intensity by likening it to something less disturbing, EMDR raises the question of the impact of therapists providing metaphors to the patient.

The therapist reviews all the patient's progress, citing his decreases in SUD and VOC for each trauma target. The patient acknowledges the psychoeducation and shifts topics. He discusses his other treatments for TBI. The following segment illustrates the symbolizing phase of referential activity: disfluency decreases, Reflection and WRAD increase, indicating he is both immersed in the narrative and reflecting upon it.

I just did the, the first portion of the neuro feedback (mm) where they hooked up to the little cap on my head (right). I had to focus. I had to shut my eyes, shut my eyes and not move my eyes at all (mm). And they were tracking, I'm pretty sure you're up to date on how that's all done (mm). It got sent in and I would get the results back in three weeks. (mm). And I'll get started on the neuro feedback (great, yeah). So I'm actually moving the stuff on the computer screen (mm). Really excited to do that (yeah) cause I mean, that really ties in (mm). If I get more, that' s why I'm excited because if I get started on that in three weeks that just makes me stronger (mm) to be able to do this.

The patient continues to discuss his treatment at the Veterans Affairs. He reports that he has not seen his counselor this week and then without prompting reports to the therapist that he is no longer experiencing fits of rage and makes a vague reference to being concerned about his "spontaneous" actions. He relates that his counselor asks him about suicidal and homicidal ideation every week and that he had passive suicidal ideation but never a plan or intent.

The patient then expresses concern about being prone to addiction, a concern he alluded to several times earlier in the session, and the therapist inquires for more detail. The patient tells the therapist that he trusts him and has never discussed these issues with others. He specifies that part of his trust lies in the therapist's also being male. The patient believes he is addicted to pornography, masturbation and gambling. The therapist replies with a lengthy narrative normalizing pornography and masturbation in the combat zone as ways to experience momentary pleasure in a context of misery. The therapist, uncharacteristic of his approach in this treatment, discloses that his shy nature led him to masturbate rather than be socially active. The therapist continues to use "I" rather than the more typical and distancing "you" or "people" when

normalizing and providing education about the development of addiction. Throughout the therapist's narrative, the patient occasionally makes vocalizations of agreement ("mm") or says "yeah." Then the patient enters a brief narrative of high disfluency, one of the highest in all the treatment, suggesting the arousal phase of the referential process. Interestingly, the WRAD is below the neutral midpoint despite the specificity of the recalled memory.

Well I've noticed, like, with me, for pornography and masturbation. I mean, it's, it's deep rooted. You know, I found, found um, my, my father's porno stash when I was like nine years old and um, you know, there was a secretive thing. I knew that it was wrong. You know, and that I would watch it when my parents were away or whenever.

As the patient clarifies that he feels addicted to pornography since childhood, long before the military, the therapist then changes his normalizing to not wanting to masturbate in combat because there is no sense of safety there and again alludes to his personal experience. The patient replies in a manner that indicates he feels comfortable and understood. He explains that his behavior is negatively affecting his sex life with his girlfriend. The therapist suggests a book and asks the patient to fill out a questionnaire that he completed when they first began treatment. The questionnaire is a symptom inventory scale called "Impact of Events-Revised". The patient smiles as they glance at it and note the marked decline in his symptoms. The score decreased from 69 at session 1 to the current score of 8.

The language of the patient and therapist sounds more friendly and informal than in past closings of sessions. For example, the therapist refers to the next sessions as "meeting up" and the patient requests that the therapist "hook" him up with the name of the author and book. The patient takes the paper with the information and shares that he and his girlfriend "connect spiritually" during intercourse which he believes is a gift from God. The patient is perhaps better able to experience closeness with another and communicate non-verbally through the body due to the history of trauma. The language may also be interpreted as an unconscious communication

and appreciation for the therapist-patient relationship. Additionally, the description is reminiscent of earlier narrative discussing the bilateral stimulation and somatic connection in EMDR.

I have orgasms that go throughout my body, (yeah) like stimulation without any type of ejaculation (right). And I think that's on a we, we say that it's on a spiritual level (mm) it's to where we're really tied into each other (yeah). And I'm not even focusing on any type of ejaculation or anything like that (sure, yeah). And that' s where I really look at it at being you know, a spiritual gift from god.

Perhaps the masturbation, which began in his parents' absence, was a way to self-soothe. As he is more able to verbalize his experience of the trauma, he also reports developing more comfort articulating his feelings to his girlfriend. Additionally, the EMDR premise of ongoing engagement with the body in the treatment as well as the therapeutic alliance may allow him to decrease reliance on this self-soothing as illustrated in the next session. The therapist gently interjects and ends the session.

Results: Session 7

Overview:

This session and session 1 are the only ones in which there is no new trauma processing. In this session there are some elements of the EMDR Re-evaluating phase; however, no SUDS are reported. The session begins with review of the patient's current functioning, noting a decrease in PTSD symptoms. The session focuses on the patient's childhood.

Line by Line Analysis:

The therapist inquires how the patient has been since the last session. He replies with a lengthy narrative about identifying his "hold backs," primarily asking others for help. Upon reflecting on this pattern, in the past 2 weeks, he initiated a request for assistance with his

delinquent bills from his chain of command. The patient then proceeds to compare himself with recently returning veterans and his language suggests elements of competition and pride in his progress. He attributes his comparative success to the therapy: “I have a step ahead”, “I have the advantage over a lot of these guys”. While having a sense of a foreshortened future is one common feature of PTSD, in this session, he exhibits the ability to be hopeful and develop specific goals. He aspires to earn a Bachelors degree and reclass in the Military. The earlier narrative, in which he recognizes his former reluctance to seek help, leads the patient to discuss his appreciation for therapy and reflect: “I feel like it was definitely worth me going and askin- asking for help”.

In describing some recent interpersonal experiences the patient illustrates the ways in which decrease in avoidance symptoms of PTSD is maintained. He reports having made contact with his former squad leader and being able to discuss several of the trauma incidents without experiencing arousal symptoms. The patient spontaneously re-evaluates 3 of the trauma incidents and reports no negative response. The segment is low in WRAD and rising in Reflection suggesting the reorganizing phase.

I thought about um, the incident in the in the vineyard (mm) and, said to myself I have absolutely no emotional draw. Like I can think about it. I can talk about it. I can it's something I've completely accomplished (mm) like thi- this is a goal that I accomplished. (mm) I have, no feeling or emotions. No longer does that effect my life anymore

The patient briefly remarks that he is masturbating less since the last session and that he discarded all his pornography but is struggling with his smoking addiction. The therapist helps the patient assess his motivation for decreasing the amount of smoking and they agree to address it with EMDR processing later in the treatment.

The therapist inquires if “there have been any surprises” in the EMDR treatment. The patient replies describing an ability to concentrate, a decrease in PTSD symptoms. His language

is high in WRAD and disfluency and low in reflection, though rising towards the end, suggesting the symbolizing phase.

It's funny uh there was [clears throat] there was a while there, where new things were popping up. Like new things in my mind of you know, some of the scenarios and incidents that happened (mm) but for the last, month I would say there is a, I just have a focus on everything.

This is immediately followed by a further increase in reflection and decrease in WRAD suggesting a phase of reorganizing. In the following segment the patient exhibits recognition of his abilities and reflects on the impact of the treatment.

Yeah as far as the EMDR process it's, I'm finding now that I'm at that stage of, of clarity (mm) where I can actually tell that my mind processing things better (mm) and my memory' s getting better (mm). So, every time I go to uh, TBI, all they keep saying is EMDR, EMDR. Like, they're basically saying, our treatment is helping to some point but no where even close to what the EMDR has done for you (mm) because this was my first stop (mm) before I started anything.

He elaborates upon his experience of clarity and describes formerly feeling confused and actively processing after early sessions requiring rest and isolation versus a more recent ability to concentrate immediately after sessions. The patient does not oversimplify his healing process and acknowledges he has more progress to make. The patient then discusses how he used to feel that "everything was controlling my life" and now "for the first time in my military career I actually feel like I have control". This is part of his central schemas in the treatment and articulated as his positive beliefs ("I have control") regarding the trauma target in which his life was threatened by a fellow soldier. This illustrates a shift from earlier session themes.

The therapist reminds the patient of his wanting to work on some things mentioned last session and the patient replies discussing chronic threat of violence within the family during childhood and specifically his relationships with his father and sister. He enters a long narrative and one of the highest WRAD segments in the entire treatment. The WRAD sharply increases as

he discusses a specific incident of abuse by his father. Reflection and disfluency measures fluctuate throughout, suggesting the symbolizing phase.

I think that the relationship with my father (mm) is a uh, it's, it's funny but in a lot the uh things that I have done a lot of the decisions that I've made. I look at how my father was. (mm) and, I see that I, I have a lot of him in me (mm). And some of that's good (mm) and some of that's bad (mm) I mean, it' s 50 50 right there (mm). Um, he was a very self destructive human being (mm). Um, before he died he had told my mom that he was better off um, that we were better off without him than with him. He would be able to do more for us whil- when he was gone (mm) than he could while he was alive. And, he was such a negative human being the entire time that I knew him (mm), You know, and, I know that had a huge affect in my life (mm) and to be able to use EMDR to go back to some of the incidents. As far as, there is uh a night where, I was sleeping on the floor and um, it was cold, it was a cold Maine winter (mm) and I was sleeping on the floor. And he was out at the bar, and I was sleeping on the floor next to the, the heater. Uh, I had the blanket on me and uh, I had my, my feet up against the, the heater. And he came in. He was stumbling in the, in the house and he uh he came in and he tripped over me. And instead of saying an- anything to me or anything like that he picked me up and he threw me (mm) against the wall. And then he grabbed me again and he threw me against the chair and you know, saying some pretty bad things to me or whatever (mm). And then he just left the room. Well after that happened, the next day I told my mom. My mom confronted him about it but he was so drunk he never remembered (mm). And, from that point on, I don't know, I don't remember how long it was but I would go to sleep with a with a butcher knife (mm). And um, there was like a protective thing (mm). And I think that my dad felt very guilty about what he had done because he used to stand by my, my door (mm) to look in at me. Like he felt horrible (mm) at what he had done (yeah) so he would come stand in and look at me in my bedroom. And um, for me you know, I was still, like what is this guy capable of? (right, yeah) And the other thing I need to work on too is that my sister was very regretful and resentful towards me. She was, up to a certain point she loved that she had a little brother but then it was, I was that third child. You know, (mm) she wasn't the baby anymore (mm) and uh, she used to actually chase me around the house with butcher knives (mm) and attempt to take my life (mm). And so, hence I've kind of tied that in why I choose to go into the infantry (mm). I learned survival tactics at the age of seven (mm). Um, I used to have to set up booby traps and hide under my bed and um, I used to escape the house and run to my mother's work. You know, (mm) three miles down the road to be able to tell her what's going on.

After a very brief decrease in WRAD, he enters a short narrative with increased WRAD, suggesting the symbolizing phase. He describes an incident that sheds light on the impact of hyper vigilance from PTSD wherein about one year ago when he felt his family may be threatened. It appears he associates to this incident unconsciously contrasting his experience of fearing his father to protecting his own children as an adult. Additionally, the hypervigilance

exhibited below may now be understood as emerging from childhood, not solely since the Military traumas.

I was with my daughter and with Jane (girlfriend) in uh Bayno Shopping Center. It was, uh year and half ago. We went to the movies, and before we left to go outside I had noticed that there was some partying teenagers out on the parking lot. They possibly, to me, they, they look like possible gang (mm) and uh, so I thought about what I had to do, to get my family to the car.

The patient seeks help from the therapist to gain insight into his experience of chronic threat with his sister, his caregiver. The therapist clarifies the age difference and established that the sister is significantly older. Though not explicit, it is likely that the therapist is guiding the patient, through socratic questioning, to validate his experience of fear. The fear-based relationship to his sister, his assigned caregiver, provides some insight into his distrust of women, which has emerged as a theme in the sessions. He clarifies that there was no element of play in these scenarios. The patient returns to memories of his sister in a brief narrative with high WRAD, fluctuating reflection and disfluency suggesting the symbolizing phase.

She tried to get me in like lock downs holds. She would try to, you know, (mm) to keep me from escaping and I would every time (mm) and that's even as a young child. I had to go in into my room and stand up against the door and think about an exit strategy. (mm) being five six and seven years old (mm, yeah). You know, and it uh, I wouldn- I mean, at no point did it ever become a game.

This is immediately followed by a high reflection, low WRAD segment suggesting reorganizing.

Like when I'm just daydreaming and I'm driving (right). Just some of the things that will pop up in my mind and (mm) I know that they must have, major controlling factors in my life (yeah). How I make decisions (right). Possibly why I'm, why I am so, um, I don't want to say spontaneous, well what's the another word for that? Impulsive (mm). Why I'm so impulsive (mm.) I know it's, a lot of those you know, the situation with my father and the situation with my, sister that happened. I didn't have to but I choose to basically take care of myself at a younger a-age.

He describes at the age of 9 moving into the apartment above his parents and often being responsible for his sister's 3 year old son. He enters a very long narrative which maintains high

WRAD and is followed by a period of high reflection suggesting the symbolizing phase followed by the reorganizing phase.

We couldn't afford a sitter and there was times where I had to make the decisions of, do I, trust my father to be able to take care of my little brother so I can go on to play with my friends? And I would go play with my friends at a football game and find my three year old little brother there at the football game.

He proceeds in this lengthy high WRAD segment to talk about feelings of sadness and guilt about his nephew's predicament, currently imprisonment. This is followed by a realization that he developed a different, positive trajectory from similar circumstances by seeking structure in the Military.

Do I take the responsibility for it? No. They were more than willing to help job train him and do everything he needed to do to live on his own. He failed at that so he got in trouble and now he's in prison (mm). Um, I look at, I was at that point one day in my life. you know, and decided to join the military (mm) to give structure in my life.

He proceeds in a lengthy high WRAD segment remaining in the symbolizing phase and moments later describes what he experienced as a crucial turning point, a decision during childhood in which he asserted himself. Though the patient does not make an explicit link between asserting himself and the father's death, his next thought is regarding being relieved and having a sense of rebirth when his father passed away.

I came to my mom at age 11 and I said I cannot go to this school anymore. I cannot be abused anymore from my peers (mm). I will travel miles a day to go to a new school (mm) and, so I found somebody to drive with. I went with uh to the new school (mm). My dad had a heart attack and we moved to a new city and it was like my life began at that point (yeah). Walked into that school and I was appreciated.

Lastly, in this lengthy high WRAD segment he provides a description of his father, which sheds light on possible mental illness.

He's just, a brilliant, brilliant man but he was very sick in the head (yeah). Um, and I loved that about my father. That he was so (mm) because I love, I love history and I love psychology you know, I've looked into you know, a lot of amazing people throughout our history (mm) and my dad, is a lot like those guys. Where they were so, smart, so intelligent that they were at that point

of insanity (yeah) and that's really how I saw my father (yeah). But he always wanted to do good but he just, his mind was so caught up (mm) in all this other stuff. Like he just used to do math problems, like I found books of just, all these different, odds and, you know, math equations and all this stuff (mm) but he would rather sit out in his van and smoke cigarettes and do this than he would, spend time with his family (yeah).

Towards the end of the session there is a rise in reflection and decrease in WRAD and very low disfluency suggesting the reorganizing phase. The patient recognizes the connections between his childhood and compulsive behaviors while in a non-arousal, low disfluency, narrative. This excerpt exhibits the ability to move from telling the narrative of the incident to reflecting upon its impact on him as an adult and linking his narrative to affect, developing empathy for his child self.

There are some things that, were so messed up (yeah) for me when I was child that I know that it affects my everyday view on things. (mm) And it's just, it's sickening that any child would have to go through some of those things (yeah) or see some of the things that I've seen (sure) and, you know, I'm definitely ready for it [targeting the childhood trauma] cause it' s something I know that, once I am completely emotionless about it, my mind opens up and then can actually comprehend it.

The therapist says they can work on childhood trauma and inquires if there are other combat trauma incidents to address in future sessions. The patient indicates that there are no more combat incidents and reiterates the sense of accomplishment in processing the first, lieutenant trauma.

Following the material in this session the significant impact of the lieutenant trauma is better understood. It appears related to the schema with his father and even precisely to similar imagery. The patient is thrown to the floor by both the father and the lieutenant as the men stand above him. Both are men who are in the role of protecting the patient and not only fail to protect him from external threats but both actively place him in direct danger.

In session 3 he states*: pictured my lieutenant there standing, there with me after he threw me on the ground*

In this session: *I was sleeping on the floor…He (the father) picked me up and he threw me (mm) against the wall.*

The processing of the lieutenant trauma and the therapeutic relationship with an older male figure may contribute to the processing of the relationship to his father. His language illustrates a sense of distance from the trauma and that he had gained other perspectives. Futhermore, he has forgiven the lieutenant.

The therapist provides psychoeducation about compulsive behaviors as normative in PTSD since they offer a means of numbing. The patient believes processing the childhood trauma will be challenging but he is eager to confront them and achieve some resolution. They discuss scheduling and tentatively plan to meet the following week; however the patient needs to check with the secretary. Since the secretary is located outside the reach of the recording, the length of time until the next session is not documented here.

Results: Session 8

Overview:

Session eight commences in the midst of discussion about the patient's anxiety about returning to active duty. The content of the dialogue is regarding paper work and bureacratic errors in his reenlistment contract. The first half of the session is mainly the patient's narrative about his anxiety as well as ways in which he feels improvement from the treatment. The second half of the session they employ EMDR to process his anxiety about his future in the Military, the balance of control he yields and that of the Military assigning his next deployment. The patient reports an initial SUD level of 4 and a 0, after 13 sets of bilateral stimulation, by the end of the processing in this session.

During the first half of the session, when the patient is speaking in longer narratives the graph reflects the measures captured. During the second half of the session, the active trauma processing, the graphs of the measures depict faint dots rather than curving lines, reflecting too few words to be captured.

Line by Line Analysis:

The patient expressed concern about returning to Duty and that once again his role and deployment location will be determined by the Military after an upcoming meeting in which his treatment progress will be reviewed. He reports his main goal is to attend school. He mentions various options including leaving the Service to pursue employment as a paralegal, a physical therapist or assistant in the medical field. He expresses fears of being deployed to locations where he may be in physical danger again and wavers between how he may respond to deployment: exhibiting better coping mechanism after this treatment or completely deteriorating. The therapist segues from the patient's vacillations to Re-evaluation by inquiring about his nightmares. The patient describes a dream about his ex-wife and nonchalantly explains he may be dreaming of her because he is in the early process of divorce without her knowledge. He proceeds to explain that his sleep is greatly improved, which also leads to his feeling more motivated and productive during the day. Here the WRAD in his narrative is high while reflection and disfluency are low suggesting the symbolizing phase.

Throughout the weekend I woke up early and was motivated and ready to go so. Yeah and there was a lot. I was pretty productive you know, went out and raked the yard weekend, (mm) cleaned up the house and you know, was pretty productive. Last night I cleaned out my truck and (mm) so it' s been good.

He continues his narrative above the WRAD neutral point and his WRAD increases further to the highest point in this session suggesting the symbolizing phase. He describes his

improvement reflected by a PTSD and an anxiety symptom inventory administered by his TBI counselor.

Ms. Jones and I filled out my the uh PTSD chart and it was zeros all the way down it and I filled out the uh the anxiety one and there was a, I scored a one [laughs] (yeah). I scored a one and a zero. It was like there was a front and a back to it.

The reflection increases as the WRAD decreases suggesting the reorganizing phase as the patient reflects on his sleep patterns, making links between his sleep hygiene and sleep quality. He ends the narrative with a summary statement indicating that he is proud of his progress in treatment.

Where I am right now is pretty darn good. Yeah and I've been using a lot better [clears throat] reasoning skills and yeah not so um, spon- or what was the word I was using last session, not spontaneous.

The patient expresses concern about ending his treatments and returning to the Military unprepared. One of the main themes of the treatment remerges: his sense or lack of control. In the following segment his WRAD increases as disfluency and reflection remain low suggesting the symbolizing phase.

Again you know, I thought that I had more control and come to find out I still have a little bit of control but it could be from me being in the WTU for two months and now I'm gone and one year from now I could be back in.

The therapist makes a comment about the conflict. He states that the patient's improvement, though appreciated, is leading to the possibility of reentering the system that may return him to the field and inevitably to risk of further injury, trauma or death. The patient responds using "we" in his narrative, a rare feature of his language in the treatment. He may be trying to engage the therapist in helping him and noting his accountability to the patient. His disfluency increases while WRAD remains low suggesting the arousal phase.

We want to make sure that we've got all avenues of this covered (right) before you just send me right back in (sure) because I'm in fear of going back through you know. It's just like with you,

you, you touch base with me to make sure that we've covered those areas and you bring up the stuff you know, to make sure that I'm not still um having any type of anxiety over those areas and that I'm in fear of you know, going back into it without covering all those avenues and then find-finding myself have to come back in you know.

As earlier in the session, he continues to vacillate between this fear and reiterating his improvement and coping skills. He wonders if he has the ability to lead soldiers in full confidence and elaborates that he has confidence in leading others but not into combat. In the midst of this narrative he makes a striking statement about the impact of trauma upon his identity: "I lost a sense of who I am and who I'll always be over there". In session one the patient presents in civilian attire and comments on himself in the third person entering as a civilian. Perhaps this was an attempt to readjust to being home and perhaps it also reflects a deeper sense of fragmentation in his sense of self as the quote alludes to. He follows this statement with hoping that the Military recognizes his past contribution and supports his development by placing him in non-combat deployment. Towards the end of this narrative segment he rationalizes the potential shift into a non-combat role reminding himself that he "served a cause" and "benefited the military" even though his whole career may not be as an infantryman.

The patient and therapist decide to use the EMDR processing to target his anxiety about his future in the Military. The patient reports the mental picture for the trauma processing of his anxiety regarding the Military Board's decision about his future.

I'm thinking then that it'll be this actual scrimmage board or whatever that decides you know, one way or the other you know, and have, I guess, having to hear that.

The therapist instructs the patient to think of the worst part of the image and describe a negative cognition about himself. The patient reports: "I am afraid". His positive cognition is "I am fortunate" and he rates its veracity, scaled 1 to 7, as a 5. He reports that his emotion is "nervous", his SUD level, is 4. The body scans reveals tension in the upper torso, stomach and

heart. As the patient focuses upon the worst image of the anxiety and the negative belief, the therapist begins the bilateral stimulation. After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

1. *I feel it in my stomach like it's butterflies. But I was able to separate myself from it so*
2. *I feel like the kind of like light chills. Like running up my back and a little bit down my legs.*
3. *Like a tingling sensa- [patient laughs] a tingling sensation.*
4. *It's pretty much the same, the same thing. I'm starting to feel it in my feet.*
5. *Well, I can feel my uh my body definitely react to it uh as mental processing. That's the first thing that I've taken in is how my body is reacting to it.*
6. *Still just like nervous trem- trembles.*

The therapist asks where he feels it and the patient replies in his stomach. They resume the bilateral stimulation.

7. *My, my, my body is just on fire I mean, as far as all the tingling sensations and nerves. I can't even think up anything cause I'm very reactive to my body right now.*

The therapist inquires about the SUD level and the patient reports a 2, a 2 point decrease. He adjusts the vibration intensity on the bilateral stimulation and they resume the sets.

8. *Pretty darn calm*
9. *I'm still calm but I noticed some shaking in my legs*
10. *Just uh feel the same. Didn't really have any body reactions that time. I'm starting to get like so relaxed that I'm almost tired now. It's hard for me to open my eyes.*

The therapist laughs and adjusts the intensity of the vibrations on the bilateral stimulation tappers. The patient responds stating that it feels relaxing.

11. *I'm not really getting anything because my mind has processed that, uh, I was just kind of alerting myself for really no reason (mm) as I still do have control (mm). I'm possibly overreacting so, yeah I mean, I don't, my mind just processed that so.*
12. *I'm good.*

When asked if his positive belief “I am fortunate” feels relevant or another belief is a more appropriate, the patient maintains the same positive belief and states:

It works. I’m fortunate to be able to have somebody who cares that mu- that much, for me to be that honest.

It is unclear to whom the patient is referring here since his narrative during the bilateral stimulation was not detailed; however, it is likely that he was directly or indirectly referring to his feelings towards the therapist. He reports that his positive cognition is completely true, a VOC of 7. They conduct a set of the bilateral stimulation.

13. Just relaxed (mm) completely. I wasn't thinking about anything.

He scans his body with the anxiety image and positive cognition in mind and notices his sensations from before are no longer present. The therapist introduces a new intervention. He asks the patient to think of his positive cognition and to imagine applying himself effectively in a challenging situation. The therapist conducts the last set of bilateral stimulation and the patient reports he feels “good” and the vibrations are leading him to feel sleepy.

In the following segment the patient elaborates upon the relaxing effects of the bilateral stimulation. The vibrations may serve to decrease his arousal state and link this experiential state with the imagined impending circumstances. The patient asks if he may purchase the vibrating pods used for bilateral stimulation as a sleeping aid. The therapist replies that he recently heard of something similar and would find the information for him.

As is characteristic of the end of sessions Closure phase, the therapist inquires if the patient would like to share any insights or positive statement regarding his work in this session. The word “overcome” comes to mind and notion of not “sweating the small stuff”. The patient is reminded that processing may continue and he is encouraged to write notes for next session and

use his relaxation exercises with the positive cognition “I am fortunate”. They discuss scheduling and the patient indicates that he has an appointment already scheduled for the following week.

Results: Session 9

Overview:

Prior to this session, the therapist and patient had established that this was his last session. Therefore, throughout this session the patient is under the impression that this is his last EMDR session. In the last exchanges of this session the therapist offers to meet with him again.

Session nine commences with the patient speaking about the road trip he plans to commence after session. He will pick up his daughters and they will stay with him for a few days. They re-evaluate the last 3 trauma targets and all are reported with a SUD rating of 0. The session then becomes more structured by the phases of the EMDR protocol. They conduct elements from phases 3 through 7 of the protocol. Rather than imagine a past trauma, he imagines a challenging scenario with his daughters coupled with the positive cognition “I am empathetic.” There are no SUDS reported. The VOC is a 7 both before and after the processing but there is shift in the patient’s language. Through the processing, he gains a sense of confidence in his ability to care for and be empathetic with his children

During the first half and towards the end of the session, when the patient is speaking in longer narrative segments, the graph reflects the measures captured. During the middle of the session, the bilateral stimulation process, the graphs of the measures depict short lines rather than curving lines, reflecting too few words to be captured.

Line by Line Analysis:

Session nine commences with the patient describing the driving route that he plans to take later in the day to pick up his daughters for a road trip. The narrative is high in reflection

and WRAD is below the neutral midpoint suggesting the referential phase of reorganizing. Characteristic of most sessions, the therapist makes a general inquiry about how the patient has been since the last session. The patient replies describing recently acquiring a puppy. His language is highly disfluent, low in WRAD and reflection which suggests arousal phase. He focuses upon the dual nature of the relationship and the power dynamic with the pet, stating:

Well you know, I mean, it's uh, that she realizes that I'm the master but she's trying [therapist laughs] she' s trying to train me as I'm training her

The description of the female dog is reminiscent of the patient's language and tone when describing the female therapy horse and women in his life such as the female therapist, his ex-wife and his sister. He explicitly makes this link and draws parallels between these "stubborn broads" which leads the therapist and patient to laugh together. The patient describes the challenge and the reward of training the puppy. In the following segment his WRAD increases as reflection and disfluency decrease suggesting the symbolizing phase**.**

I got a stubborn horse (mm) you know, and my comparison to that was my comparison to my ex-wife. I went from one, one stubborn broad to another and then another and now I got another stubborn broad [therapist and patient laugh] but so it's uh, it's challenging but it's very rewarding at the same time.

The therapist inquires about sleep problems and the patient playfully responds: "I don't know. How is it?" This playfulness as well as the spontaneous joining laughter of the dyad has increased over the treatment, suggesting a strong alliance. The increased ability to play is indicative of shift in the trauma and the ability to be in the present. He elaborates that he no longer experiences any nightmares and is able to sleep.

The therapist asks if the patient has noticed any changes in his behavior or thoughts or memories. The patient's narrative becomes disfluent, low in reflection with fluctuations in WRAD. He becomes agitated describing an incident while driving in which his anger escalated

rapidly. Within moments of his response he was able to reflect on his behavior and noted that this was an improvement from before treatment. The theme of initial agitation followed by exhibiting self-regulation continues as he recalls a recent incident with his ex wife. He noticed his increased ability to mentalize, “get into other people’s shoes” and be less “self centered”. For example, in the argument with his ex-wife he thought about her state of mind with the children and the impact her recently quitting smoking had on her mood and subsequently their interaction. He comments on his increased ability to “be rational” and reports that his girlfriend notices it as well.

He begins a long narrative that is high in WRAD with fluctuating disfluency and reflection measures suggesting the symbolizing phase. In the following narrative the patient exhibits that the PTSD symptoms of withdrawal and numbing are decreasing. His capacity for intimacy and the quality of his interpersonal relationships are improving. The highest point of WRAD in the narrative occurs when he looks at his girlfriend and tells her that he’ll meet her at the house.

I was telling you about how we were going to repeat the second phase of our relationship. I took her out on a date and it was pheno- it was phenomenal. We had a great time and it was. She had told me. She had told me that you know, in all relationships that the butterfly effect goes away and I told her I said you know, what if you're madly in love with somebody that butterfly effect does not go away you just need to know how to stabilize, stabilize your relationship. Step outside of it and look at it and um we got that butterfly effect back (mm). You know, both us you know, it was we were both bubbly and you know, we went a week and a half without seeing each other, sustaining from that and then um with control I actually was a little bit spontaneous but controlled. I was sitting with her after the game in her car and I said start up your car. She was thinking that we were just gonna have to separate at that point and I said start up your car. She looked at me and I said I'll see you at the house. So I went and I got in my truck and I met her at the house. We went back to the house, sat on the couch and watched uh a little bit of Survivor together and then uh we slept in the bed. We didn't have sex or anything. Just snuggled and really enjoyed our company.

The patient then makes a playful comment adding that the only other update since last session is that his football team won the game. They laugh together again. The therapist directs

the patient toward EMDR processing and asks whether he would like to do trauma processing considering he has a long road trip ahead of him after session. The patient requests reviewing his "control issues". The therapist reevaluates all 3 targets that were processed by instructing the patient to recall each trauma image and the respective positive cognition. The patient reports 0 SUDS for all targets. Furthermore, his response illustrates that the trauma processing led him to develop a completely different meaning of the incident. This significant explanation is not captured by the measures.

Brings a smile to my face, face because all those people in that situation all, all survived. It's a very happy thought to me now rather than disturbing.

The next segment of his narrative is very high in disfluency and very low in WRAD suggesting the arousal phase. The patient is thinking of what he might have said to instigate the soldier who threatened his life.

So cause as I think of it now I'm like you know, I probably did say something you know, I'm more than, more than, more than likely I said something that triggered this guy (mm) you know, (mm) and you know, at first, I, I wasn't empathetic (mm) you know, but us- using the you know, using that that positive statement (mm) I am empathetic you know, shows me that I can, I can approach any situation.

He then articulates his understanding of the circumstances and exhibits empathy, his positive cognition, as his Disfluency decreases and WRAD and reflection slightly increase.

That' s where I am now. Putting myself into somebody else's shoes, thinking about what I say before I say it (mm, mm). You know, cause you never know people come from all different walks of life (mm) and I know that his childhood was pretty rough.

Typical of EMDR and the sessions in this treatment, the therapist allows the patient to guide the treatment process. The control given to the patient is central to all trauma treatments and particularly to this patient due to the salience of control in his childhood and combat trauma incidents. The therapist inquires what he processed in the past that he may want to apply over the

next few days with his 9 year old daughter and 4 year old step daughter during their road trip. He describes the younger daughter's excitement about her upcoming birthday and anxiety about how he will manage his emotions on a long road trip with a young child. The therapist makes a link between the patient's past processing and the anticipated circumstances. He suggests that his positive cognition "I am empathetic" may be challenged in the coming days and the patient immediately agrees. The patient provides a detailed description of his plan to manage the trip and exhibits the ability to think about the experience from the children's perspective. He describes a structured plan in which the girls and he may anticipate each step. Furthermore, he planned activities to foster joyfulness on the trip. The therapist asks him to rate the veracity of the belief "I am empathetic" in thinking of his time with the girls. The patient responds with a 7, completely true. He guides the patient to imagine a video of being with the children and challenges that may arise. He imagines the older sister leading the younger sister to cry and his anxiety level raising as he is driving. They commence the bilateral stimulation.

As the patient focuses upon the anticipated circumstances and the positive belief, "I am empathetic", the therapist begins the bilateral stimulation. After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

1. *Okay. I got it. Slight tightness in the chest now so I thought about the fact that I don't smoke around the girls so that's going to be you know, of course, of course I'm not just going cold turkey it for the, for the trip. I'll use a patch or something but uh in order to be empathetic I have to make sure that I'm, I'm stable myself (mm) in order to be able to relate to the girls so.*
2. *Some of the things that were uh popping through my head are different ways that I can uh help soothe the situation instead of doing something just uh spontaneous or compulsive (mm) uh impulsive I guess is the word so uh. Like singing a song or changing up, ch- changing up the environment.*

3. *Don't be in a rush, at all. Do not rush this at all (mm). That I have that. I have that feeling inside of me that if I, if I rush this and I show any type of stress to these girls it will be an absolute horrible trip. And that's the feeling that I have right now.*
4. *Uh that one was just completely relaxed and calm.*
5. Well I just came with a, uh kind of a, a solution, almost a, uh, I guess what you would call like a pre mission order (mm). I'm gonna let the girls know exactly what's going on before we even embark on anything (mm). So you know, I'll sit the girls down and let them know exactly you know, how long this trip is going to be and we'll go over uh some different ways to approach situations. Like if they're uncomfortable instead of crying they can do something different, raise their hand or you know. So I mean, that's something that I need to think through a little more thoroughly but I think making sure they're well prepared is going to help.

In the last response to the bilateral stimulation he likens preparation and consistency for his children to a military process, pre mission orders. His narrative in other sessions suggests that throughout his childhood and in one of his combat trauma incidents he did not receive this preparation. His ability to provide it to his children may provide a repair for him as well. Furthermore, his ability to anticipate his own needs and that of others in the future rather than being immersed in the past traumas or present survival are positive indicators of his progress in treatment. The therapist instructs the patient to think about the road trip imagery as well as "I am empathetic" and report his VOC. The patient reports he feels it's a 7, very true. He thinks of reminding the girls that he loves them and will comfort them. They conduct a last set of the bilateral stimulation and the patient reports:

6. *Just calmness (good). About to fall asleep.*

The therapist relates to the patient as a parent by making a brief comment on responding to children based on an understanding of their feelings rather than being reactive. This process entails a shift from reptilian brain processes, prevalent in individuals with PTSD, to more evolved reasoning skills. In response, the patient describes a past situation in which he was initially unable to reflect on his daughter's internal experience and as the interaction proceeded he grew able to reflect and tend to her. His narrative when describing the past incident was

detailed and high in WRAD suggesting the symbolizing phase. The reflecting decreases and the WRAD increases again as he describes that having the strength to lead men into battle indicates that he has the strength to manage the road trip with his children effectively.

The therapist remarks that he is eager to hear about the trip and inquires if they have a session scheduled for when he returns. The patient indicates that this was the last appointment and the therapist responds by offering another session to work on other targets. The patient immediately replies that he would like another session and he will schedule it with the secretary. He notes that it may be difficult to secure childcare while he has the sessions but that it would be useful to be in treatment to manage any anxiety that may arise while his daughters stay with him. He expressed appreciation to the therapist and excitement about seeing his own children shortly. The therapist is affirming and indicating the close of the session. The patient directly expresses gratitude, more explicitly than in past sessions:

Well I appreciate you being empathetic today (certainly) in my, in my concer- in your concern for my drive

As is characteristic of session endings, he enters a brief informal dialogue.

Results: Session 10

Overview:

Session 10 takes place exactly 2 months after session 9. The patient has recently returned to the Service and called the therapist for a follow-up session due to a recent drill triggering an unprocessed trauma memory. A recent vehicle roll over drill triggered a trauma of his actual vehicle roll over in the last deployment to Iraq. When the patient enters he alludes to knowing that he has 2 sessions, including this one, remaining before termination. Presumably they agreed upon this when the patient called for a follow-up session.

Session ten commences with a brief dialogue about the 2 month gap since last session. Unlike past sessions where the patient typically talks freely and is then redirected to the more structured EDMR protocol by the therapist, in this session the patient seeks to commence processing immediately. Through processing, after 23 sets of bilateral stimulation, the SUD rating shifts from a 6 to a 0. The negative cognitions are reported as "I'm to blame" and I'm worthless". The positive cognition shifts from "I did the right thing" and "I'm fine" to "I am thankful". His VOC shifts from a 2 to a 7.

This session is the last session in the data set because it is the last session recorded and provided by the therapist. There is one more session that takes place after this one, the following week in which the target of this session is re-evaluated and the SUD remains a 0.

In this session, the HPWRAD is the highest of all ten sessions. The HPWRAD, the proportion of words above neutral midpoint of WRAD in a segment, is .53 in the session. In other words, 53% of the time the patient speaks in high WRAD, his narrative is well above the neutral midpoint of WRAD in the given segment.

In writing the methods section, prior to receiving this data set, the investigator expected all EMDR sessions to have narrative qualities like those illustrated in session 10, wherein the patient verbalizes his experience throughout the bilateral stimulation sets permitting one to analyze the progression of trauma processing gradually with each narrative segment.

The patient also notices that processing this trauma feels different than the others. He elaborates, "there's no one to blame". While the other traumas are directly interpersonal in nature this incident is less so and perhaps therefore more distanced from his central schemas.

Line by Line Analysis:

Session ten commences with a brief dialogue acknowledging the length of time since the last session. The therapist, as is characteristic of past sessions, asks the patient how he has been since the last session. The patient, aware that he has only 2 sessions remaining, states that he'll quickly summarize his need for treatment. He enters a narrative with high levels of disfluency, low WRAD and low reflection, indicating he is in the arousal phase of the referential process. There is some confusion, frequent repetition and disambiguations. An excerpt follows:

I've already started the EMDR or I've started the um, the return to duty (mm) and uh, last Friday, last Friday we did the roll over drills and um, I have had uh, non stop nightmares ever since so what I did is I uh, I was thinking well, what is triggering this?

He reports returning to duty and being involved in roll over drills, which led him to experience frequent nightmares. He requests to target the vehicle roll over incident in Iraq, which resulted in his TBI. Although this incident was briefly discussed in session 1, when the patient was given options of which traumas to process, he did not elect to work on this target in past sessions. A key premise of EMDR treatment is allowing the patient to guide the process by selecting the trauma targets (see chapter 2).

He then enters a period of high WRAD and low reflection with decreasing disfluency suggesting the symbolizing phase:

Going through the drills I didn't have a hard time. Everything was, everything was fine. Um I was the squad leader. I had everything under control. I did everything right. Uh, after I was done I was successful. I felt successful.

Then, WRAD decreases and reflection increases suggesting reorganizing:

Even now I'm having a hard time sleeping so I didn't get hardly any sleep last night so (well) that's why I'm just so, so thankful that you know, that I called and got this reestablished because you know, I had no idea when that was going to hit but it hit.

The therapist asks if he is ready to begin the processing and if there are other incidents to address. In a narrative segment in which WRAD is above the neutral midpoint, the patient shares a recent conversation he had with a squad leader regarding his nightmares wherein the squad leader suggested a therapy reminiscent of EMDR. The therapist clarifies that this is indeed the same treatment. The patient seems anxious and eager to ask whether the therapist would treat his friend without all the treatment enrollment paperwork. The therapist assures him that the squad leader may contact him for treatment and proceeds to set up the bilateral stimulation tappers. He asks the patient for the image that represents the worst part of the trauma. He replies:

When uh, when it came to a complete stop and just the sand and dust and everything's coming (mm) all inside the vehicle and it's completely on it's side.

The therapist inquires about a negative cognition. The patient pauses for 27 seconds. The therapist suggests the negative cognition may be "I'm going to die. I'm inadequate". The patient replies that he is struggling to find something negative because no one was at fault for the vehicle roll over. He and the therapist discuss the circumstances and the patient states that prior to the Military investigation he held the belief "I'm to blame", "I'm worthless". His positive cognition is: "I did the right thing" and I'm fine." The veracity of the positive statement with the trauma image is reported as a 2. His related emotion is anxiety and his SUD level is 6. In calling up the worst image of the trauma, the patient reports feeling it in front of his head and chest. The therapist initiates the bilateral stimulation. After approximately 30 seconds the therapist inquires: "Take a deep breath. Let it all go. What do you get now?" The therapist repeats this phrase after every set of the bilateral stimulation. The patient response after each set is as follows.

The first responses begin to verbalize bodily sensations and a realization that distances him from blame, that anyone could have been driving during the incident.

1.Uh I'm about to say I was actually just, just getting into uh, into the beginning.

2. Well I can feel, I mean, it's, I can feel it all over my body. I can feel it up my sides and my head.

3. Uh what pops up in my head is that, I guess an- anybody could have been uh driving the vehicle that day. That's what popped up into my head.

4. I remember the uh, the tactical commander that I had he, I remember him getting injured. Uh, I didn't, some- that was a fact that I'd forgot uh.

In the following response to a set of bilateral stimulations the WRAD, Reflection and Disfluency are high with WRAD gradually decreasing. This suggests he is both immersed in telling and reflecting upon his experience as he expresses a sense of guilt. This pattern suggests the symbolizing phase.

5. *I remember uh the feeling, the feeling that I had after it was done and we got pulled from the vehicle. I remember uh looking back at the vehicle and I remember saying to myself I wish that I was in worse condition than I am. Like I wish that I would be I, you know, either dead or even you know, at the point where I couldn't walk or something and I think that seeing what had happened I had almost, I had taken the blame for it. So I, I felt very guilty and I remember laying on the ground saying you know, why did this happen? You know, why am I not in worse shape than I am?*

In the following segment his WRAD slightly decreases below the neutral midpoint and his disfluency increases, suggesting increased arousal.

6. I've gotten where I'm in the hospital now and uh that was a traumatizing experience in it's own because I had uh, all these marine guys that were, that were flown in you know, um some were in pretty bad shape (mm) so um, just thinking of how that situation affected me

In the following segment his WRAD sharply increases while reflection and disfluency decrease suggesting the symbolizing phase. He recalls at the time, fearing returning to duty after the roll over, the fear that also led him to request this session as he returns to duty now.

7. I remember that um even how bad the hospital was I still didn't wanna leave. I didn't wanna, I didn't wanna uh return to go right back into the mix and I think about uh I was in there for seven days immediately after I was released. I was right back into the mix, right back into driving and doing all that. And uh I remember while I was there I had this fear of returning after the roll over.

The following segment begins in arousal phase. The disfluency begins high, with many pauses, and gradually decreases, while the WRAD decreases slightly but remains above the neutral midpoint.

*8. I remember uh Jeff, who um**,** was a part of the, the first incident, one of the first incidents that we talked about. He uh, I remember him telling me you know, you uh, you know, you almost, you almost, killed me, you almost killed us. Um, it was just like there was there was no comforting at all. That it was somebody had to be blamed you know, and I remember now that people were saying well when you're going at that speed in a in a Hum V and you're crossing through a, through a median, um through a median then you, uh, you know, you have to control your steering as you're going through. And you know, they were like well you probably, you probably pulled it and flipped it so it was like they had to throw that blame on me, somebody had to take the blame.*

The following segment continues to illustrate an arousal phase. The disfluency remains high, but gradually decreasing and WRAD and reflection low.

9. I still hear like the voices in my head you know, of um somebody you know, som- somebody's to blame, somebody's at fault then I remember the investigator saying when we were all in the room you know, filling out the sworn statements nobody is to blame. We're just trying to find the truth (mm, okay) so that's, that' s what's going through my head right now

All three measures fluctuate in the following segment. It ends with a sharp increase in Reflection and a decrease in WRAD below the neutral midpoint suggesting the reorganizing phase in which he is actively integrating the material.

10. [grunt] I was just thinking about after I came back from the, from the hospital and I was uh in backseat of the bunker. I remember them saying are you are you ready to go? Are you ready to go back out on a mission? Are you ready to do this? I'm like I'm not ready to be a driver. Well you don' t have a choice in the matter, you know, we only have two drivers and you' re our second qualified driver. In your absence we had somebody not qualified to drive driving. So it was like it didn't matter. It was kind of psycho- psychologically messing with me at that point. It's like it didn't' t matter that this even happened and that I'm a potential risk that if this was my fault but it truthfully and honestly if I was at fault for it why would they want me to immediately go right back into driving? So they ended up having me go right back into being a driver um and I think my aware- my awareness, and my um driving abilities had become better at that point. You know, I had finished out the deployment well and was able to you know, do everything to the best of my ability but I think that conflict there really with people saying, you know, trying to throw the blame on me and saying that it's my fault um and instead of saying you know, things like that happen, you know. And that' s what I'm trying to comprehend in my mind right now. I had never been in through that situation before and crossing the median and in pursuit of the enemy and try to stop an oncoming vehicle with weapons in it. So I had never, I've never had to cross a medium or median at that, at that speed so in my mind I'm trying to you know, just accept the fact that there' s nothing that I could have done or changed (sure). I mean, if I would've been trained better.

In the following 3 narrative segments below, the WRAD starts very high and then decreases to below the neutral midpoint. This shift occurs when the patient transitions from recalling the incident to speaking in more distant language about his thought process at the time. There is a dash mark (--) below to indicate the shift. The disfluency is gradually decreasing throughout the segment and reflection rises at the end of segment 11 and through segment 12 when he gains insight into the larger context of the decision making that led to the incident. He begins to recognize that his negative cognition of inadequacy may be false. The insight he gains is linked to his affect as he reports feeling calm. This suggests a shift from the symbolizing phase to reorganizing phase.

11. I remember uh, when we first got over there and look- they were looking for people to fill positions. They had uh asked around the room. They were saying you know, who has a uh, who has a military driver's license? I didn't have a military driver's license and I didn't raise my hand. They went around the room and then they asked okay well who has a civilian driver's license? And I raised my hand and of course like the automatic the weapon, you know, the

gunners, those guys they couldn't be drivers um, so all the people that weren't qualified for the position they didn't raise their hands. Um, it came up to me and it was between me and Jeff, who was actually um in my vehicle almost for all the entire time. He didn't have a driver's license so they wouldn't pick him. So they picked me and I remember walking next door to go get my military driver's license made up and I had never driven a Hum V until I stepped on the ground in Iraq and we went outside and here's our vehicles. It was like you know, here's like your Hum V---- so uh what I was processing in my head is that I didn't have the proper training. I didn't go through the Hum V training. I didn't know any- really anything about the vehicle. I'd learned how to drive the vehicle and I'd take care of it uh but what I have going through my head now is honestly I can't be uh to blame but I do know what would have needed, possibly would have needed, to be done to preve- to prevent this from happening possibly a second time would be ensuring that I would have had the proper training.

12. The statement that comes to mind now is I did all that I could do and I feel a lot of confidence in that.

13. I get a uh, a uh, I get a sense of calm now.

The next segment captures the highest WRAD in this session. It gradually decreases but remains well above the neutral midpoint throughout the narrative. Disfluency is also high and follows the pattern of WRAD, gradually decreasing. The reflection measures remain low. This pattern suggests the symbolizing phase.

14. Well I found some. I remember the humor. There was the three of us sitting in there. We all got med evaced out and I remember we were all sitting there in the reviewing room or whatever. They come and they check you out. The gunner who was completely trapped underneath the vehicle wa- he had the the least amount of concussion and everything. I mean he was good. He got out of there right away. I was there for seven days. The other guys they got out but he was jus, he was over there laughing and joking about it. We called him old man. Like he had been through anything and everything we called him like the old war Vietnam vet you know (yeah) and uh he was just laughing and joking about it like it was no big deal you know.

In the following segment WRAD remains very high but continues to gradually decrease while Reflection increases. This pattern suggesting the symbolizing phase**.** The researcher's experience as a reader of this evocative segment, being moved and having chills, reflects precisely what the WRAD measure seeks to capture.

15. I remember uh [clears throat] being on the ground and uh they were trying to get the the Bradley hooked up to the vehicle so they could flip it just enough to get the the gunner out and I remember uh Sergeant Joe who's not with us anymore he um he was running around you know, trying to check and see if everything um was good and he was always a tough love guy with me anyhow he was always kind of uh always give you the cold shoulder but uh he came around and was checking. Um, it was really hard fo- for me to focus on anything because I uh, I had lost my glasses in the in the roll over. I remember that now and so everything to me wasn't so clear. I don't see very well with out my glasses so um I remember shouting out I don't have my glasses. Can you please help me find my glasses? And I remember him recovering my glasses for me. Like he went over and searched inside the vehicle and found my glasses and brought them over to me (mm). Um, so I remember, I remember that and it was uh. You know, that means a lot to me now.

In the following 2 segments (16, 17) the patient remarks on the emerging vividness of the trauma imagery and is able to recall new details that had been dissociated.

16. Just uh, the, the painted picture is uh becoming more vivid to me every time that I, that I go back into it (mm, okay). Focusing on it.

17. I forgot, I had forgotten about a huge factor of this whole deal and it just came back to me. Uh, before I got the go ahead to cross the median uh the rear of the convoy has to hold the security for you to be able to cross the road. Well when I was crossing the road a vehicle that was traveling in the same direction came up and actually clipped the side of the the Hum V (mm) and my arm was outside of the window and it had actually, it hit my, it hit me right here and it just kind of jammed my arm up against the window. I remember it hitting and then immediately after. It was my hand, it was out the window and I only had one hand on the steering wheel and I got hit. It jerked from one side and jerked to the other then I pulled the wheel in the process and that makes more sense to me. I remember seeing that vehicle fly off the road into the ditch before we rolled.

In the following segment the patient acknowledges the relief of integrating the fragmented memory. The patient's WRAD remains high and decreases to the neutral midpoint. The reflection and disfluency measures fluctuate.

18. I feel almost uh relieved, that you know, that the whole story is coming back to the, from, from beginning to end. It makes makes me feel a lot more comfortable.

Earlier the patient remarks that this trauma is different in that there is no one to blame. Through his processing it becomes evident that he felt blamed and sought accountability from

superiors who he wished had conducted a thorough assessment prior to sending the unit into danger.

19. I remember the call uh being put up on the radio and us taking the call. Um, stating exactly you know, exactly that what color vehicle. It was a white Toyota pick up truck one personnel with a one personnel with a machine gun (mm) and um you just you don't think you just take the call and just do it. And um, when everything was all said and done they actually found out that uh, it was just an Iraqi police officer just going home (mm). Um, and they always keep their weapon system with them in the in the vehicle. So it was a false report that was put on cause they had classified it as enemy. And um, you know, those are, those are some of the coping things too. I, I guess when everybody else went back to the fob and I went I medevaced out and I was gone for seven days. They had done that we usually do that I wasn't a part of. And uh, they could have possibly went over like identified possibl- positive identification of an, an enemy vehicle before sending out the status on it and um I wasn't a part of that. So all I knew was we were pursuing the enemy and then end state report cause I asked about it of course and they they told me that it wasn't at all that. It was just some Iraqi police guy, police man going home.

The reflection measure is very high, the highest within this session. It gradually decreases in the segment. The WRAD remains above the neutral midpoint, though it decreases. Disfluency follows the same pattern as the WRAD suggesting the reorganizing phase.

20. It's funny but I was actually thinking about how nice the showers [upbeat voice] (mm) were thinking just how nice the showers were when I was down for a while. Cause we (mm) had, we had a rough situation where we were and I, I was. I felt very fortunate. I think they had submarine sandwiches cause I remember like, I remember getting like a submarine sandwich when I came back and it was sitting on my, sitting on my bunk and uh, so it was kinda like, kinda like heaven I guess (yeah). You know? Recovery was rough because you're around like screaming and moaning people but I tell you what you get a good shower and get a uh, get something good to eat in your belly after not having anything for so long. Yeah, that that was just a big bright picture in my head (okay). Just brings a smile to my face.

21. I think I'm just going back, like just the over view of everything pretty much.

The therapist checks what arises when calling up the original image of the trauma. The patient replies:

I just get the incident

They conduct another set of the bilateral stimulation. The following segment begins with high disfluency follow by high WRAD and reflection following similar pattern suggesting the shift from the arousal to the symbolizing phase. The patient is recalling details from after the explosion. He refers to these details as “side things”. These are the fragments that can emerge often after the central incident coaleces in the memory.

22. [laughs] Something, something else that occurs to me is in, in Iraq anytime that something exciting happened you know, all the Iraqi people would just you know, all their kids and everybody would just come up to check it out to see what's going on and I could barely see anything cause my glasses were gone but I remember looking around and just seeing all theses different colors and stuff come up to like the side. People trying to shoo them away because they can't be too close to the operation you know, and um I remember the one guy coming up. Instead he was screaming, screaming in Arabic you know, oh you messed up my you messed up my truck you basically (yeah.) you know, and I was, I was like, I was looking over and I remembered at that point I remembered him hitting the vehicle (mm) and how fast he was going and he passed a military convoy (mm) but he came up in the arms. You know, I’m sure that, I’m sure he was probably saying give me, give me some money for my for my truck now (yeah) and yeah, I just remember all the little side things (sure) that were (sure) going on.

The therapist asks the patient his SUD level and he reports a 0. The patient changed his positive cognition from “I am fine” to “I am thankful”. The therapist instructs him to think of the trauma image and the positive cognition and the patient reports a VOC of 7. The conduct another set of bilateral stimulation and the patient states:

23. Calm

During the body scans the patient does not notice any tension. He shares that he feels better and feels he will benefit from the processing. As is characteristic of the Closure phase, the therapist inquires if the patient would like to share any insights or positive statement regarding his work in this session. During this long narrative segment he is in the reorganizing phase. He describes his experience of the bilateral stimulation vibration as calming and how he regulates its intensity. He proceeds to describe that he typically processes and makes links after the session,

likely a part of the reorganizing phase. He develops a metaphor of "unlocking the door" to the memory through treatment. Improvement that he notices, such as initially needing to go home and rest after session, has shifted to now being able to concentrate during the processing as well as after session.

I think that the desensitizing pro- process happens uh once I get up and I leave here I think it starts working. Things in my mind starts uh, actually working the situation out more (Yeah). I think right now this is the process of where I've unlocked the, the door. I've opened the door. I got everything out in the open now. [clears throat] That's why I remember at first I would get so exhausted I just had to go home and take a nap. It was too much for me because my mind wasn't used to processing that much information all at once. Now the healthier that I became I could take on this information uh, be able to address it right away.

The patient is reminded that processing may continue and he is encouraged to make notes for next session or to think of his "safe place". The patient comments that he plans to go the safe place, a beach, in the summer. The therapist indicates the close of session and the patient expresses gratitude. He briefly discusses having confidence in himself and some anxiety. The therapist inquires if they have a session time for the following week established. The patient replies affirmatively and the session ends. While the last session is not provided in the data set, the therapist reports that in the last session he re-evaluates the target of session 10 and the SUDS remains a 0.

Chapter IV: Discussion

The goals of the study were: to describe the level of referential process, as measured by shifts in WRAD, REF and DIS scores, in an EMDR treatment and to describe the treatment process of a short term, effective treatment of a veteran in which PTSD subsided as per a self-report symptom inventory and the therapist's assessment. The key finding was that in this EMDR treatment of a veteran with PTSD there was a high level of RA. It was relatively high when compared to base rates from other psychotherapy samples (approximately one standard deviation higher). In the first section of this chapter, the high RA level findings are discussed in the context of other literature and speculations are made regarding the reasons for high RA levels in this treatment. In the next section there is a discussion of the potentially unique characteristics in the relationship between high RA levels and language in trauma narratives. Lastly, the shifting emotion schemas of the patient in this study are discussed, highlighting the role of the strong therapeutic alliance in the treatment and how EMDR's use of the negative cognition provides a lens with which to assess schema shifts.

Level of Referential Activity In the EMDR Treatment

Link Between a Given Task, Referential Activity Level and Reflection Level

An effort was made to examine RA, as measured by WRAD, in an EMDR treatment of a veteran diagnosed with PTSD. No published studies to date have used the Discourse Attribute Analysis Program (DAAP) in evaluating WRAD in an EMDR treatment. Furthermore, only a limited number of studies have examined RA levels in trauma narratives (Miller, 1994; Grayson, 1995, Jepson & Bucci, 1999; Goldfine, 2010). In this study, the mean WRAD for the 10 sessions

was .464 and ranged from 0.497, in session 10, to.4301, in session 6. The level of WRAD in this treatment is relatively high when compared to base rates from other psychotherapy samples. For example, Murphy (August, 2011) reported means for samples of psychoanalysis and mixed psychotherapy that were both approximately one standard deviation lower than the mean for this treatment. Instances of high WRAD occurred throughout the treatment, before, during and after trauma processing.

Studies (Bucci, Maskit & Murphy, 2009, May; Kingsley, 2009; Nelson, Moskowitz & Steiner, 2008; Nelson & Poligano, 2009, May: Nelson, 2010; Murphy, 2012) have established that the WRAD measure is effectively differentiating between language regarding specific events and other types of language. In an early study in the development of RA measures, Rosow (1997) found higher RA in non-psychotherapy samples than psychotherapy. While initially it was assumed the RA would be higher in the latter since individuals are supposedly more often emotionally engaged within session, upon closer examination it became clear that the *task* of the non psychotherapy materials led to high RA. Murphy (2012) sheds light on the meaning of these finding based upon more recent research. For example, asking a patient to develop a narrative of one event, such as an early memory or dream leads to high WRAD (Murphy, 2012). With this in mind, it may be that the structure of the EMDR treatment, where the patient and therapist work on one single event, one trauma incident, at a time, accounts for the higher WRAD scores in the current treatment.

The notion that EMDR influences WRAD may be conceptualized on two levels: (1) the task of the overall treatment, including the patient's expectation of treatment task and (2) the within session EMDR task/questions prior to each of the patient's narrative segments. When treatment commences, the patient receives psychoeducation about EMDR. The task of the

treatment is explained and expectations are addressed. In step, the patient enters treatment with an explicit task for the entire short-term treatment- - to process specific memories of trauma incidents within a certain number of sessions. Additionally, a sense of impending termination in treatment often fosters focus upon the task. Having this larger task and treatment arc in mind may have led to high WRAD throughout the treatment. Consistent with this understanding, in session 7, in which no trauma processing takes place the WRAD is high (highest peak at.74). This suggests high RA may not be attributed to the specific EMDR interventions per se but the overall task of the treatment, the implicit treatment contract. Though the issue of broad expectations of a treatment, or for that matter other interpersonal interactions has not been studied directly with WRAD, this may be an important area for future research. In particular it would be interesting to attempt to distinguish such general expectations from particular tasks or interventions within a treatment.

Findings of high WRAD, were not consistently precipitated by a specific type of task (EMDR questions/intervention) within each session. The examples in which an EMDR intervention by the therapist was followed by increased WRAD may suggest that attuned, precise questions in a safe therapeutic relationship led to the patient's more detailed evocative language; however, such questions may not be unique to EMDR. A larger sample would allow future researchers to explore the potential relationship between each EMDR task and WRAD scores.

One aspect of why verbal task is related to WRAD levels is the length of narrative that a given task requests. For example, in Five Minute Monologues where research participants are asked to tell about a recent event and speak for a five full minutes, most participants finish telling about their event after the first 2 to 3 minutes and then proceed to search for other things to discuss (Bucci, 1984; Bucci & Freedman, 1978; Dodd & Bucci, 1987; Jepson and Bucci, 1999).

As a result of these brief bursts in narrative, shorter segments of text that focus on specific events tend to have higher WRAD scores (Murphy, 2012). In this study the patient's speech was in the high WRAD zone approximately 30 percent of the time on average and in one session (session 10) was in the high WRAD zone for over 50 percent of the session. In contrast, base rates for a sample of 24 psychotherapy sessions (Maskit, 2012) from varying theoretical orientations showed patient speech to be in the high WRAD zone approximately 20 percent of the time (about 1 standard deviation lower than the current treatment). In part, this may be attributed to the EMDR phases and question structure facilitating short narrative bursts because of the ebb and flow between verbal and non-verbal processing. Additionally, many of the questions in the protocol elicit brief responses.

The reflection mean in this study is .065. and ranged from .06 in session 1 to .07, in session 5. This mean is more similar to that of a conversational speech sample (.063) as reported by Murphy (2012), both of which are significantly lower than the reflection mean in the psychotherapy sample (.093) as reported by Maskit (2012). Comparing the mean Reflection from this study, the psychotherapy sample of CBT and predominantly psychodynamic therapies (Maskit, 2012), and the sample of 514 phone conversations (Murphy, 2012), the sample of psychodynamic and CBT treatments showed a higher level of reflection (approximately 1.5 standard deviations) than EMDR and than everyday conversation. The task of psychodynamic (and perhaps the CBT) treatments in the sample may focus on reflecting upon experiences. In contrast, the task of EMDR emphasizes the memory processing of the trauma material while maintaining some distancing through dual attention with bilateral stimulation (Shapiro, 1995, 2001). In EMDR, too much Reflection may be a barrier to trauma processing, as it may increase

the patient's defenses, primarily the avoidance inherent in PTSD, and hinder access to the somatic experience and the affect.

Despite the overall Reflection mean for the entire treatment being low when compared to other treatments, when examining the Reflection within each EMDR session the intermittent presence of reflection is evident. In the current treatment, peaks in WRAD were often followed by moments where the patient reflected on the memories. In general, WRAD and REF tend to be negatively correlated (Murphy, 2012), and as periods of high WRAD decrease they tend to be followed by periods of higher Reflection. The movement between WRAD and Reflection and inherently symbolizing and reorganizing phases, occurs in treatments in which the therapist is attuned and does not interrupt the natural processing and narrative flow. For example, Bucci and Maskit (2007) showed that the alternation of WRAD and REF as measured by the REF_WRAD covariation is associated with good psychotherapy process as rated by experienced clinical judges. In the current study, though the overall level of REF is lower than in the comparison sample, the REF_WRAD covariation of this treatment is consistent with that of other treatments (less than one standard deviation difference). This suggests that though reflection may be less emphasized in the current treatment, the extent to which the referential process is operating is consistent with other treatment forms. Shapiro (1995) notes that for optimal memory processing, the therapist should "let whatever happens happen." In this study, during trauma processing, the therapist never interprets, reframes or inquires about the patient's narrative. Rather he repeats "Just go with that" and at times offers distancing techniques to remind the patient that he is not reliving the trauma. According to the EMDR model, this allows the patient to process the memory and maintain control over the process and narrative content. The attunement of the therapist is apparent throughout the treatment both in the DAAP measures, as depicted by the

ebb and flow between WRAD and REF, symbolizing and reorganizing, and in the qualitative reading of the sessions.

There were several examples when the therapist's question explicitly pulled for the task of reflection in the patient. At the end of the sessions, in the Closure phase of EMDR, the therapist's questions regarding the patient's insights ("Any new insights?", "What did you gain from the session?") at times led to the highest examples of the Refection measure. Understandably, such questions foster language suggesting high reflection, the main linguistic measure in the Reorganizing phase.

While it might be expected that there would be an emphasis on the task of reflection in this treatment, where the patient significantly decreased PTSD symptoms and more generally in psychotherapy with positive outcomes, this study raises other possibilities. It suggests that some Reflection is necessary following high WRAD but that the high levels of Reflection observed in other psychotherapies may not be necessary for trauma processing. This may be explored in future research. One may examine whether the level of REF relates to improvement measures in treatments of PTSD. One might hypothesize that HPWRAD and the degree to which the REF_WRAD covariation is negative would be related to improved outcome whereas REF alone may not.

Trauma Narrative and High RA Levels

The high levels of RA, as measured by WRAD, before, during and after trauma processing led to examining which factors may aid in distinguishing pre and post trauma processing as captured by the DAAP measures and a qualitative assessment of the language. The levels of Disfluency and Reflection were examined and an assessment of whether any linguistic

characteristics distinguish the excerpts from before and after some of the trauma processing was conducted. While it was expected that the data would offer numerous opportunities to examine such examples, the patient did not verbalize much of his processing. Therefore one clear example in which the patient verbalized the trauma narrative in detail both before and after trauma processing was assessed.

Both excerpts from before processing and after a large portion of the trauma processing was completed, were high, above the neutral midpoint of .5, in WRAD scores. The WRAD in session 1 ranged from .64-.59 and the narrative in session 10 ranged from .60-.56. The excerpts differed in scores of the Reflection measure. The excerpt following some of the trauma processing illustrated higher Reflection: .03-.08, in session 10 as opposed to .01-.04, in session 1. The disfluency, a measure that the authors of DAAP acknowledge still requires greater precision in understanding of what it captures, shifted from 01-.08 in session 1, to .12-.06 in session 10. The higher score in Reflection within the excerpt following some trauma processing may elucidate one way to assess differences in the quality of high RA and distinguish between the underlying processes of reliving a trauma memory versus working through.

Linguistic markers illustrated differences between the trauma narrative excerpts. from before and after some processing. Examining the first excerpt, pre processing, reveals that the patient may be reliving the trauma. The narrative is not coherent, overly detailed, exhibits exact repetition and the patient's physical movement that reenacts the experience at the time of the trauma. In contrast, the excerpt from after some trauma processing, in session 10, indicates he is not immersed and reliving the trauma. Rather the language is evocative and detailed but not overwhelming. The patient's language is more coherent and he appears to be in the present tense, partly as indicated by his use of the reflecting word "remember". Linguistic characteristics

examined in these two excerpts may shed light on the differences between language that is evocative and language that reflects immersion in trauma.

The WRAD measure is based on the combination of the original 4 dimensions of RA: specificity, concreteness, clarity and imagery. For trauma narratives, individually scoring these 4 measures and examining the linguistic characteristics such as repetition may yield a more precise understanding of high RA in trauma populations and better distinguish between evocative language and language indicative of reliving. In this regard, concreteness and imagery might be particularly important in differentiating traumatic events from other narratives as discussed by Jepson and Bucci (1999) (this study is discussed further below). Computerized versions of these independent dimensions are in the process of being developed. Additionally, in employing the DAAP, one may consider examining the levels of Reflection in instances of high WRAD in trauma populations as a potential indication of reliving trauma versus processed memories. The remainder of this section will discuss other studies of RA and trauma to contextualize these recommendations and the findings discussed above.

Earlier studies suggest that speech that is high in RA typically reflects psychological well-being (Bucci & Miller, 1993; Connelly, 1994; Samstag, 1996) and low RA may connote pathology. High RA levels indicate a strong integration between symbolic and sub-symbolic modes (Bucci & Freedman, 1978; Bucci, 1984; Bucci & Miller, 1993) wherein language is detailed and the imagery evocative. Low RA levels are commonly indicative of vague language and a weak integration between symbolic and sub-symbolic modes (Bucci, 1997). However, the few studies measuring RA in traumatized populations (Miller, 1994; Grayson, 1995; Jepson & Bucci, 1999; Goldfine, 2010) show that participants exhibit high RA in the narratives they provided.

In a study of RA levels among a sample of interviews with Hurricane Katrina trauma survivors (Goldfine, 2010), the mean RA was 0.54. Goldfine compares the RA mean in her findings to the RA in two other data sets (Bucci & Maskit, 2005) and concludes that the relatively high RA among the evacuees suggests that the majority of the participants were immersed in their narrative during the interview. Goldfine explicates that the RA measure does not differentiate between linguistic patterns that reflect traumatic immersion and evocative language. While a certain level of immersion in recalling and retelling the trauma in detail may foster integration of the memory fragments and links among the somatic experiences and language, in some cases the immersion may become too intense leading to overstimulation. Such a state may lead to re-traumatizing rather than the intended processing within treatment. Goldfine concludes:

> High RA in the trauma survivor may reflect the presence of trauma-related pathology. An important limitation of the RA measure is that it does not distinguish between evocative language and language suggestive of traumatic immersion. As a result of this limitation, a non-traumatized person and a traumatized person may receive equally High RA scores based on their use of evocative language. However, the meaning of these scores differs. (p. 110)

The high RA findings of this study of EMDR lend support to Goldfine's (2010) speculation that high RA in the narrative of a trauma survivor requires close examination to determine if it connotes pathology or well-being.

Qualitatively examining the linguistic features in the EMDR examples of high WRAD scores before and after some trauma processing revealed different linguistic characteristics. The characteristic of repetition was examined by Halfon (2011) in her dissertation. In discussing a qualitative analysis of excerpts from a psychoanalytic treatment, she stated:

> High RA and low repetition sessions marked a symbolizing process where the patient was able to bring to consciousness vivid memories and fantasies in differentiated space and time in the presence of the analyst. In contrast, high RA and high repetition sessions revealed a traumatic

narrative associated with the evocation of raw vivid bodily images from patient's past operations that were highly disturbing. Patient lost the psychic space between the immediacy of these memories and her sense of self at that moment and was found to be suffering "in the present tense of the painful past" (Freedman and Lavender, 2002, pg. 192). This kind of remembering has been linked with a form of retraumatization in the treatment (van der Kolk, 1989)

In this study, the differing qualities in the patient's trauma narrative similarly revealed that after some trauma processing, the patient's WRAD remained high but his repetition decreased and he appeared better able to differentiate between the memory and the retelling. An EMDR study (Lee, 2008) comparing the underlying process of EMDR to exposure therapies suggests that it is the degree of distancing in EMDR versus reliving in exposure that delineates a difference between the two treatments. Distancing is maintained by the dual attention through bilateral stimulation, the therapist's interventions encouraging the patient to remain in the present as he narrates the trauma ("You are here now") and therapist use of metaphors ("You are watching a train pass"). Results indicate that there was no correlation between symptom alleviation and reliving responses in EMDR (Lee, 2008). The level of distancing was significantly associated with symptom alleviation and distancing was attributed to the bilateral stimulation more than by therapist instruction. In this study, there was significant symptom alleviation and the patient and therapist employed the distancing practices inherent in EMDR; however, the study aim was not to assess the cause effect relationship between distancing and symptom alleviation and therefore no conclusion may be drawn regarding this correlation.

Grayson (1995) examined RA levels among subjects with a history of trauma. Each subject was asked to share 4 memories from different categories: traumatic, early, neutral and recent, which were scored using the 4 RA scales (specificity, concreteness, clarity and imagery), the measures used prior to the development of the DAAP. She hypothesized that the traumatic memory would exhibit lower RA; however, her findings indicated the opposite, higher RA

levels. She attributed the high RA among subjects to their having worked through the traumas in psychotherapy. Despite her conclusion, in her discussion, Grayson sheds light on the distinct features that each dimension captures. When comparing the early memories to traumatic memories, she specified that the traumatic memories scored higher for sensory imagery than for organization of speech. The notion of examining the 4 distinct RA dimensions to identify such differences may continue to yield greater understanding of the processes underlying shifts in language that the DAAP captures.

An earlier study also highlights the importance of examining the 4 distinct dimensions of RA in trauma narrative. Jepson and Bucci (1999) compared the RA levels of 15 physically abused adolescents with the RA levels of 15 non-abused adolescents. It was hypothesized that abused subjects would struggle more with integrating processes and thus have lower RA. The prediction that the physically abused adolescents would have lower RA scores than the non-abused adolescents, was not illustrated in the data. There were no significant differences in RA levels. Ultimately, the main distinction between the quality of RA in both groups was: abused adolescents had higher levels in 2 dimensions of RA, concreteness and imagery scales. In other words, they employed more evocative imagery than the non-abused adolescents. The authors discuss that the abused adolescents had a greater ability to symbolize and verbalize their experience of the other and that perhaps they have organized their affective schemas around abuse memories. In order to better understand these unexpected results, the authors called for further research. Based upon the more recent research and the findings of this study it may be possible that the high levels of imagery among the abused adolescents was indicative of trauma immersion rather than evocative language. Early studies of RA separated the 4 dimensions into concreteness and imagery (COMIM) and clarity and specificity (CLASP). The more recently

developed WRAD measure is better able to capture CLASP than CONIM. Concreteness and imagery may indicate a different type of immersion in the narrative. Traumatic memories may be more fragmentary, that is vivid with respect to particular objects or moments as opposed to organized into a more coherent narrative.

Another study of RA provides insight into the impact of task upon RA levels as well as the important relationship between WRAD and Reflection. Welsh (2009) examined the levels of RA to analyze differences in linguistic processes underlying narration of stories about emotional events and to measure differences in the emotional impact upon the storyteller. She relied upon the measures WRAD and Reflection. It was hypothesized that high WRAD, more detailed and imagistic story telling, would be correlated with increased emotional intensity and emotion changes. This hypothesis was only partially supported. Welsh speculated that high levels of defensiveness in the non clinical population sample may have affected the results such that they were less robust; however, based on the findings of this EMDR study it may be that Welsh's inquiry to the subjects: " tell as much detail and imagery as possible" led to the defensive narrative. Contrastingly, in EMDR, there is a non-intrusive stance and an effort to evade arousal. The patient is not asked for detail. The patient is to think of the worst part of the trauma image and he may choose to verbalize as much or as little detail as feels appropriate. Allowing the patient to regulate the amount of detail shared and fostering distancing during the telling (i.e. "You are here." "You are watching a train pass") may allow the trauma processing to excel and result in high RA that connotes processed trauma memories.

Welsh's discussion of the relationship between instances of high WRAD accompanied by high Reflection and high WRAD with the absence of Reflection shed light on the findings in

this study of RA in EMDR. She offers that the latter may encourage a stuckness rather than emotional change.

> Without reflection, the event seems to have remained fixed or frozen in the participant's memory. While the high RA language keeps the teller's emotional level high, the absence of Reflection in this narrative limits the teller's ability to move forward in processing the event and perhaps his life…. (Welsh, 2009, p. 78)

This study of WRAD scores in EMDR suggests similar findings; however, it adds that it is not merely the presence or absence of reflection but rather the degree of reflection that interacts with the WRAD measure in the narrative segment. As illustrated in comparing the excerpt from before trauma processing to after some trauma processing in EMDR, the WRAD was high in both instances and the reflection was present in both excerpts. The Reflection range shifted from lower in the pre processing narrative (.01-04) to higher in following some processing (.03-.08).

While Goldfine (2010) did not examine the Reflection measure regarding high RA levels among Katrina Survivor trauma narratives, in discussion of her findings she acknowledges that the relationship between WRAD and Reflection should be explored in future research and refers to studies that support this view.

> This pattern of fluctuating RA and Reflection scores might serve as a graphical representation of a flexible coping style, a style that has been correlated with good prognostic outcomes in the literature (Mancini & Bonanno, 2006; Bonanno et al., 2004). (p. 16)

In this study of EMDR, findings indicated a decrease in PTSD symptoms and high RA levels throughout the treatment. Miller (1994) examined the relationship between PTSD symptoms and RA in early memories. He administered the SCL-90-R Symptom Check List (Horowitz, 1980) and Early Memory Test (EMT) among 25 inpatient PTSD Vietnam veterans pre and post a12 week treatment. It was hypothesized that symptom level and RA would be positively correlated; however findings indicated no change in symptoms and a decrease in RA

levels. He found no significant relationship between PTSD symptoms and RA levels pre or post treatment. In part, Miller attributes the decreasing RA to the type of therapy that was provided, "covering-up" or "sealing over" therapy in which patients are encouraged to tolerate or distract themselves from distressing symptoms. At the time of the study, this treatment was commonly offered to this reportedly low functioning, inpatient, PTSD, population who were perceived to not be able to make use of therapy that engages the patient in understanding and reflecting upon the meaning of the trauma and symptoms. Miller offered the example of a patient who suffers from recurring nightmares and is encouraged to practice relaxation rather than process and reflect upon the nightmare. One of the aims of this treatment is to decrease affect intensity among the patients. In contrast, in EMDR rather than covering up, the patient is encouraged to uncover, to process the trauma at one's individual pace within the containment of the therapeutic relationship and the protocol structure. The Miller study was conducted prior to the development of the DAAP. Examining the narratives in the DAAP may reveal a low level of Reflection as well as low WRAD. Similar to Grayson and Welsh's research this study sheds light on the significance of Reflection as it related to WRAD in trauma processing of memories. Additionally, the "covering up" therapy and low RA levels point to the earlier discussed possibility that treatment task is an important predictor of both WRAD and Reflection.

Emotion Schemas

Emotion schemas, a type of memory schema, develop over repeated interactions with caretakers from birth and create the framework for each individual's interpersonal world. This study sheds light on Bucci's eloquent description of changing emotion schemas in treatment.

The trace of the dreaded trauma must be activated in the session and in the relationship in order for change to come about; but activated in such a way that the tangle of avoidance and protection

can be penetrated to some extent, and the schema can potentially be reconstructed rather than the dissociation reinforced (Bucci, 2011, p.255).

Part II of the Results offered a qualitative examination of the treatment and inherently the shifts in the patient's emotion schemas. As discussed, over the course of the treatment, there is a significant shift in the therapeutic relationship. The patient in this study presented for treatment of his combat PTSD; however, as sessions progressed he revealed chronic neglect and instances of physical abuse throughout his childhood. In this study the shift within the patient's expectations of the other was captured. This change in emotion schemas may be examined from multiple perspectives: the Referential Process; the shifts from negative to positive cognitions assessed in the EMDR protocol; the shifts in the therapeutic relationship and reports of shifts in relationships to others.

Emotion schemas are the crux of change in the referential process. (See Chapter I, page 12 for review of emotion schemas as understood within the multiple code theory.) In this study, the cycle through phases of the referential process and particularly the high prevalence of the symbolizing phase and the interplay between WRAD and REF offer a lens with which to view the processes that underlie the successful outcome in EMDR treatment. Shapiro maintains that psychological health is contingent upon integrating trauma memories into a more generalized network of memories (1995). Similarly, Bucci offers that one's ability to integrate material and maintain flexibility in emotion schema is crucial for psychological well-being. According to Bucci, the patient in this study would be conceptualized as having avoidant dissociation, rather than adaptive dissociation (2011). The former results in one's inability to function. The avoidance permeates all aspects of one's life. When the patient in this study presented for treatment, he exhibited numerous PTSD symptoms, including those of avoidance. He suffered from withdrawal, isolation and deep distrust of others and avoided discussing his trauma

memories. The intensity of the subsymbolic features, such as sensory and somatic processes, in emotion schemas differentiates them from other memory schemas. As exhibited in this study, in the event of trauma, the memory may become stuck, remaining in the pre-verbal, subsymolic level until it is activated and processed.

Bucci maintains that all 3 phases are necessary for a shift in the emotion schema; however, the interaction between the symbolizing and reorganizing phases is the most crucial. The changes within the patient are partially illustrated in the shifts in the therapeutic alliance, the one consistent predictor of treatment outcomes across all treatments and orientations. The development of this therapeutic relationship for patients with PTSD is particularly challenging. Inevitably, they present for treatment having experienced a shattering of basic assumptions - that the world is safe and that they may trust others. A central tenet of the EMDR protocol, and one of the goals particularly in Phase 2 of the protocol, is developing a "rapport" with the patient (Shapiro, 2001). The therapist in this study of EMDR was highly attuned and the dance between the dyad was pivitol to the positive treatment outcome. There was a movement from the patient's fear of abandonment to a space for play, laughter and a growing expectation of empathy and consistency.

Negative Cognitions

In this short-term treatment with little explicit focus on early relationships, evidence of the schema is partially gathered based upon the meaning that the patient ascribes to his recent traumatic experiences and to the verbal and non-verbal, unconscious and conscious dynamic evoked in the therapeutic relationship. Additionally, the patient's schema may be viewed through the patient's reported negative cognitions related to the trauma. The negative cognitions that the patient reported in the treatment were: "I'm a coward", "I'm stuck", "I'm worthless",

"I'm to blame" and "I'm uncaring". EMDR theory recognizes that negative cognitions regarding the trauma being processed link to the internal map of repeated childhood experiences with early care givers. Shapiro refers to this as "childhood folder" (Shapiro, 1995).

Schema Therapy was developed to elaborate upon Beck's CBT model. It is often used in conjunction with EMDR (Young, 2002) and offers a framework to identify and organize the schema of the patient in this study. Young explicates 5 schema domains: disconnection and rejection; impaired autonomy and performance; impaired limits; other directedness; overvigilance and inhibition. The negative cognitions of the patient in this study suggest the patient's primary schema domain is "disconnection and rejection". Within this domain the authors outline 5 early maladaptive schemas: abandonment/instability; mistrust/abuse; emotional deprivation; defectiveness/shame and social isolation/alienation.

The patient's fears of abandonment and expectation that the other is unreliable are evident from the first session where he exhibits anxiety about the termination. The patient appears to be testing the therapist. He warns the therapist not repeat the rupture he has experienced in another therapy and in early relationships. The intensity of the affect leads the therapist to become briefly flustered and seek to avoid disappointing the patient. He then reassures him that he will receive "the continuity of care that you need". The therapist explicitly reassures the patient of his commitment four times throughout this short-term treatment. The patient evokes a dynamic in which the other is activated to ensure he does not feel abandoned. While the verbalization of the therapist's constancy contributes to the patient's experiencing him as a reliable figure, the treatment frame and the non-verbal communication contributes as well. Throughout the treatment the therapist's uses of vocalizations ("mm") is striking in that it illustrates his consistent, gentle presence and attunement to the patient who is preoccupied with

fears of abandonment. In his discussion of EMDR, Siegel offers (2002, p. 98): "The nonverbal behavior of a psychotherapist is crucial for establishing a sense of safety and security within the fragile and vulnerable conditions of therapeutic work."

In session 4 when asked to describe an image of a safe container in which to place the trauma until the next session, the patient likens the container to the therapy room, suggesting he feels he is in a safe place and perhaps contained by the treatment and the therapist. By session 7 he explains that the therapist has replaced his need for the image of a safe place. Young's description of the safe place helps to understand this significance: "When painful affect becomes too intense, the client can imagine being in their safe place…a safe place allows clients to modulate the amount of affect they are experiencing" (Young, 2002, p.197). The patient's replacing the safe place with the therapist suggests that he is able, on some level, to conceive of a non-abandoning figure and to trust another. At the end of the treatment, the patient's schema has shifted. He has grown to rely on the therapist as a reliable other and have an expectation that his needs will be met. This shift was observed in data of his language in session explicitly and unconsciously about the therapist and in his behavior. He seeks help in a manner he was not able to prior to treatment and calls the therapist for a follow up appointment.

The expectation of abuse by and distrust of the other initially emerges in his narratives about relationships to military superiors, his girlfriend, his ex-wife. Later in the treatment, he explicitly relates this feeling to consistent neglect by his parents and chronic threat of physical harm by his primary caretaker, his sister and at times, his father. The expectation that the other is untrustworthy and will hurt or humiliate him emerges in his repeated descriptions of the Lieutenant. For example, during one bilateral processing set he recalled thinking that the Lieutenant would deliberately keep the unit out in danger longer than deemed necessary.

Interestingly, the imagery of the trauma with Lieutenant and the imagery of the trauma with his father are similar, drawing a parallel not only in the knowledge of abuse by both figures but through the imagery of the other standing above him and his physical sensation of being on the ground. Both are men who are in the presumed role of protecting the patient and not only fail to protect him from external threats but actively place him in direct danger when he is already vulnerable -- in combat as an adult and sleeping as a child.

In a later session, when the patient reports the somatic memory of hitting the ground during battle and feels the pain and flinching in the session, the memory may have greater emotional impact because the somatic memory may be associated with the childhood trauma of feeling his body hit the ground as his father threw him. EMDR, and in particular the Body Scan Phase, sets out to achieve one of the goals of processing explicated by Bucci. The process of verbalizing one's experience while maintaining a connection to bodily sensations allows for transformation of experience (Bucci, 1997). The therapist's EMDR intervention, requesting labels for the formerly inchoate bodily sensations, allowed the patient to feel the memory as less foreign and the experience as more tolerable. The negative cognition initially associated with the trauma in which the Lieutenant pushes him to the ground was "I'm a coward". It transforms to "I'm better", "I've accepted" and finally "I'm Brave".

The schema of defectiveness and shame permeates the treatment. He reports feelings of being defective and unwanted as a child and fears of being rejected by superiors and by the institution of the military. He exhibits hypersensitivity to blame and shame. For example, in processing the vehicle rollover incident, the intensity of his affect was regarding feelings of shame that he was not "good enough" as a driver and that others blame him for the rollover. Through processing, he recalled the military's accountability in the haphazard process by which

he came to be a driver and the lack of training he received. Integrating this part of his memory allowed him to perceive his role in the incident with less emphasis on his feelings of inadequacy and defectiveness. Later in the treatment, he exhibited pride in his role as a competent, caring, empathetic father.

His expectation that desire for emotional support will not be sufficiently met by others is exhibited in the therapeutic relationship and in reports of his early relationship to his parents, to his ex-wife and in the current relationship with his girlfriend. In particular, his narrative regarding lack of empathy from his unit and military superior during recovery after the accident sheds light on his sense of deprivation. While early on he perceives his girlfriend as intrusive and unsupportive, over the course of treatment he reports experiences of relying upon her, verbalizing his needs, and developing a sense of intimacy. In the second to last session, he explicitly expressed appreciation to the therapist for his support and empathy. There is a shift in his sense of the absence of guidance from others and of feeling deprived of protection from those from whom he should expect it. This is most evident in session 6 when the therapist becomes uncharacteristically activated to self-disclose and provide psychoeducation to normalize the patient's experience and by his reference to reading materials. Over the course of the treatment the patient develops a sense that he is supported by the therapist and in an appropriately boundaried manner requests his assistance with navigating the team meeting in which the decision regarding return to duty is made towards the end of the treatment.

Study Limitations and Future Research

While the results of this study may offer insight for researchers and clinicians in working with trauma survivors, there were several limitation to be considered. Case studies offer

invaluable insight into the therapeutic process; however, the sample of one subject places significant limitations on the generalizability of the study findings (Yin, 2003). Study findings are confounded by the traits of the treatment and the subject. Since EMDR is a manualized treatment, the characteristic of this treatment may be more readily generalizable to other EMDR cases; however, the therapeutic dynamic as well as the pace of the interventions cannot be standardized even in strict adherence to a given treatment protocol. In this study, traits of the patient, including but not limited to race, gender, age, experience with childhood caregivers, and trauma incidents, may render some findings specific to the case.

Merrick (1999) offers that in qualitative research the investigator is accountable to provide a detailed description so that the reader may gain insight into the subject and the treatment process. Embedded analysis entails offering such description of the case, treatment shifts and observations regarding the therapeutic relationship. By providing this kind of description, the author enables the reader to make an informed decision about whether findings may be applicable to other patients. Merrick's approach was undertaken in this study.

Utilizing data that had been gathered prior to the study prevented the researcher from being able to access some data that would have allowed for a richer analysis of the treatment. The researcher did not have access to the complete treatment. Two other unrecorded sessions, as well as additional case material -- the self-report inventory scale, the TBI evaluation and the patient's notes which he was instructed to keep, as needed, in between treatment sessions -- were not provided.

The use of DAAP to analyze these data led to a limitation since the DAAP is able to produce reliable outcome data only on narrative segments of 25 words or more. Much of the EMDR process occurred in silence, non-verbally. While EMDR has a clear protocol, it may be

integrated with various psychotherapy orientations (Shapiro, 2002). Prior to the researcher's access to the data in this study, the researcher was trained by and familiar with EMDR conducted by those with a psychodynamic background, whose orientation often encourages patients to associate and thus be more verbal in treatment (for a discussion of how EMDR is similar to the early model of psychoanalysis, please see Wachtel, in Shapiro, 2002). In this study, the patient was often succinct in his verbalizations. Therefore, the numerous segments of the transcripts wherein fewer than 25 words were spoken in each turn of speech are not reflected in the discussion of the DAAP-identified phases of the referential process. In the qualitative analysis, the quotations and discussion of shorter narrative segments were included and discussed so as not to exclude potentially significant moments and shifts in the treatment.

In order to reexamine the findings in this case study, future researchers might consider gathering a large sample of complete EMDR treatments with veterans. The researchers might examine the impact of each EMDR intervention upon the patient's language to assess whether specific tasks within the treatment foster a high RA. They might hone in on the relationship between WRAD and Reflection scores. Furthermore, in addition to the DAAP analysis, examining the excerpts of high RA by rating each of the 4 dimensions individually would offer greater precision in deciphering the qualities that appear to differentiate high RA that connotes processed trauma memories and high RA that connotes trauma immersion. As noted earlier, these 4 dictionaries are in the process of being developed. The clinical implications of knowing this difference would offer clinicians a tool to guide the trauma treatment.

Conclusion

EMDR is effective in treating PTSD; however the mechanism of change that underlies the treatment success is widely debated. These debates have led some clinicians and Institutions to select other treatments for PTSD despite positive reports from veterans about not having to do homework, the non-intrusive quality of the protocol and short-term effectiveness. An attempt was made in this study to assess the Referential Process, as measured by shifts in WRAD, REF and DIS scores, and to provide a detailed qualitative description to elucidate how the patient's PTSD subsided in 12 sessions.

This is the first study to examine levels of RA in an EMDR treatment and more generally RA in any trauma focused treatment. Additionally, whereas most EMDR studies have focused upon one trauma incident, this study adds to the limited literature of EMDR treatment in the military population with numerous trauma memories. Several interesting findings arose: WRAD levels were high compared to other psychotherapy samples, which may be attributed to task; high RA appears to have different qualities in trauma survivors and requires further assessment to decipher the meaning of the measure; the interaction between WRAD and REF, symbolizing and reorganizing appears significant in trauma processing and may relate to the significance of distancing (versus reliving) fostered by the EMDR protocol; schema shifted as depicted by changes in the therapeutic relationship, the negative cognitions and patient reports of relationship with others. These findings co –exist with the knowledge that the patient presented for treatment with PTSD and terminated without PTSD over merely 12 sessions. While the researcher cannot establish that there is a direct relationship between the positive treatment outcome and the findings, the co-existence calls for further research.

APPENDICES

Appendix A: Transcription Rules for DAAP03.4 (version 3)

Bernard Maskit and Wilma Bucci

I – ESSENTIAL TRANSCRIPTION RULES FOR ALL VERSIONS OF DAAP AND FOR ALL DICTIONARIES

1. Word Processing Format. Do not use any of the typography or formatting tools of your word processor, such as bold, italics, justification, etc. Make sure you write or save your final version as a text (.txt) file.

Some word processors break words and insert hyphens. Make sure your word processor does not do this.

2. Top Matter. The transcript begins with a confidentiality and/or ownership statement provided by the project director with the tape being transcribed. Place this confidentiality statement at the top of the transcript.

Follow this with a statement telling: the transcriber's identifier (i.e., name or initials, as directed by the project director), date of transcription, and name of study.

Write the name of the session on the next line.

3. Optional function - Classification indicators. You can choose any number of classification terms depending on the organization of your study. For example, if your transcript has several interviews, with different subjects, at different times, and each subject is asked several questions, your classification terms might be: 'subject', 'time' and 'question'. If, for example, your first subject is labeled Lucy and the interview is at time 1, and the first question concerns food, you would place the following before the transcription of the first speaker:

\t subject:Lucy \t time:1 \t question:food

Note that each of the above lines contains a space after \t, but no other spaces.

If your transcript contains no other classification indicator, then you can proceed to the first speaker. If you will have other classification indicators in the transcript, they must all be identified as above before the first speaker.

The point of these classification indicators is that they can be used to aggregate data. For example, if you want to see data for all responses concerning time 1, tell the operator to aggregate subject and question. If you have a batch of files in a folder to be simultaneously run, they must all use the same classification indicators, and, for each run, they will all be aggregated the same way.

Then, when the interview turns to the next question, which might be love, you would place the marker:

\t question:love

on a line by itself, just before the beginning of this part of the interview. There is no need to repeat the information that the subject is Lucy and that the time is 1.

The program treats each change of classification as a new turn of speech, so you must indicate who is speaking after each change of classification, even if there is no change of speaker.That is, you must have a line beginning with \s

after each change of classification.

All the classifications to be used in your study must be included in the first set of labels. You cannot add a new classification after the beginning of the first turn of speech; and you must spell the classification term exactly the same way each time you use it (the program is case sensitive, spelling includes capital letters).
The classification terms, and the names of the instances of the categories (e.g., Lucy, 1, food) must be made up of ordinary letters, either upper or lower case, and numbers; no spaces or other keyboard characters are allowed; also no accented letters are allowed. Again, the program is case sensitive, T and t are different letters.
4. Confidentiality. The transcriber must consult with the research project director concerning the use of disguises. All proper names of persons, places and animals must be changed; they are usually changed into other names of persons, places and animals, of the same form, but some project directors prefer other codes. This replacement must be done by the transcriber; the software will not do it. These changes must be listed in a code book, and must not appear in any form in the transcript. The form and safety of the code book is the responsibility of the project director.
5. Speaker designators. The sound track contains the voices of several speakers; name these as speaker 1, speaker 2, etc. There is a special rule for psychotherapy and psychoanalytic sessions, and similar dialogues, such as interviews; the patient or interviewee is always speaker 1, and the therapist or analyst or interviewer is always speaker 2. Note that this means that the first speaker on the transcript could be speaker 2; this is not a problem.
There is no a priori limit to the number of speakers. However, you cannot skip a number in the ordering of the speakers: there must be a speaker 1; if there is more than one speaker, there must be a speaker 2; if there are more than two speakers, there must be a speaker 3, etc.
Each time there is a change of speaker, start a new line after a blank line. If the new speaker is speaker 1, start this new line with the speaker designator:
\s1 If the next speaker is speaker 2, start this new line with \s2; etc. Note that there is no space before the backslash, and that there is a space after the number; this is important.
6. Non-interruptions. There is a special rule for turns of speech with no content, such as the case of a speaker who is interrupted by someone else coughing, or laughing, or saying just some non-word, such as “hm” or “um hmm”. In these cases, and in these cases only, start a new line and, if for example, the interruption consists of speaker 2 saying “hm”, type:
\st 2 mm. (Again, note that the backslash occurs at the beginning of a line, and that there are spaces
both before and after the speaker number.)
There is another special rule for interruptions that may contain words, but that do not constitute a redirection of the speaker. Examples are that speaker 2 says: "yes", or "of course", or "but ...", and is then interrupted by speaker 1 continuing. In this case, start a new line and type:
\sc 2 but
7. End of transcript. At the end of the transcription of the last speaker, start a new line and type: \c9 Any material in the transcript after this will not be processed by DAAP.
8. Sounds other than spoken words. Events, or sounds other than words, should be

noted in parentheses, as in (laughs), (coughs), or (telephone rings), etc.
9. Backslashes. The backslash may only be used as indicated above. It must always be the first character of the line it is on.
10. Rules for words. The following are intended to standardize the decisions that the transcriber will need to make. NOTE: These rules do not apply to items in parentheses, as DAAP ignores all items included in parentheses (either round or square brackets).

- Compound words. Write compound words such as "self_sacrificing" using the underscore, rather than a hyphen. Please consult a dictionary if there is any doubt as to whether a word is a compound. For example, while “self_sufficient” is a compound word, “selfless” is one word.

 Here are the rules for extraordinary words: 1. A word or phrase that is in the dictionary should be transcribed as written in the
dictionary (of course, replacing the hyphen with an underscore).
2. If there are two possible forms in the dictionary, such as “goodbye” or “good_bye”, choose the simpler; i.e., no underscore.
3. If the dictionary offers one word or two, such as “chickenpox” or “chicken pox”, choose one word; i.e., “chickenpox”.
4. If the item sounds as if it ought to be one word, but is not in the dictionary, such as “bookturner”, and there is no such item in the dictionary, and both parts are words in the dictionary, write it as two words; i.e., “book turner”.
5. If the item as spoken appears as one word, such as “nonbelief” and there is no such item in the dictionary, and the two separate parts are not words in the dictionary (“non” is not a word in the dictionary; it is listed as a prefix), then write this as a hyphenated word; that is “non_belief.”

- Incomplete words. Denote an incomplete word by ending it with exactly one hyphen. For example, if the speaker stutters and says: "f f fail"; this should be transcribed as "f- f- fail"; note the spaces after the hyphens. If the speaker starts a word, hesitates, and then either completes the word or says another word, type the first partial word with a hyphen at the end, followed by a space. For example if the speaker says "some", then hesitates, then says "somewhat", transcribe it as "some- somewhat". The reason for this rule is that DAAP counts incomplete words. However, if the speaker says “I I I don’t know what to say”; these are not incomplete words, and this sentence should be transcribed as shown.

If at all possible, do not use hyphens for any other purpose. Some word processors, including MS Word, sometimes interpret hyphens used in other contexts as em-dashes or en-dashes, which then appear in the logfile as words that DAAP does not know what to do with; please try to avoid them.

- Unclear words. These are noted in parentheses; if the speaker says "the" followed by one or more unclear words, type "the (unclear)". It is not necessary to try to preserve the number of unclear words.
- Misspoken words. If the speaker misspeaks, or if you hear the speaker as misspeaking, and there is no doubt as to the correct meaning, type the correct word. For example, if the speaker says something that sounds like, “I want to Philadelphia yesterday, and walked on Market Street”, this is clearly a misspeaking, and the correct word is “went”, rather than “want”, so the transcription should read, “I went (want) to Philadelphia ...”.

- Apostrophes. Use apostrophes as usual for contractions, such as "don't", "can't", "I'd", and for possessives. However, type “o_clock” rather than “o’clock”, as this is really one word.
- Filled pauses. Sounds that have no meaning, such as “um”, should always be written as “mm”. If there is any reason to attempt to preserve the original sound more specifically, one can type the phonetics in parenthese, such as, “mm (um)”, or “mm (hm)”. Note that “oh”, “ah”, and “mm_hmm” are words; the usual sounds in the “MM” category are: “um”, “hm”, “uh”, “uhm”, etc.
- Numbers. Numbers up to ten in the text should be written out; that is, type “seven”, rather than “7”. Numbers larger than 10 can be written as numbers, but without commas or periods; that is, if the speaker says "two hundred thousand", you can type 200000. For time, type “eight_forty_five” rather than “8:45". Of course, speaker indicators must be digits (1,2, etc.), and category designators can use digits, including such designators as “mong4”.

11. Punctuation Marks. Use punctuation marks, such as commas (stops), periods (full stops), semicolons, exclamation points and question marks as in customary usage. They do not matter for DAAP, but can be used to make the text more readable.
12. Abbreviations. Some standard abbreviations are usually written with periods, such as “a.m.”, while others, such as “S.U.N.Y”, are sometimes written with periods and sometimes without. Do not use periods, but rather type, for example, “a_m”, since "am" is a word, type “SUNY,” since this is not a word.
13. Pauses. You may use slashes (/), to indicate pauses of up to five seconds (one slash for each second). Do not use longer dashes (em-dashes or en-dashes) or three dots (...) for this purpose. You should leave a space both before and after each of these dashes. (Some word processors, such as MS Word, on occasion, change hyphens to em-dashes, and/or use special symbols for ellipses (...). These will have to be eliminated one-by-one when the transcript is changed into a text file.)

II. SPECIAL DISAMBIGUATION RULES FOR THE WEIGHTED REFERENTIAL ACTIVITY DICTIONARY, VERSION 3 (WRAD3)

1 The word “kind” has two distinct meanings, as in “She’s a kind person”, and “what kind of apples do you like?”. The first meaning should be typed as “kindAFF”, as in “Be kindAFF to your poor old mother”, while the second meaning is typed as simply “kind”, as in “There is more than one kind of happy relationship”.

2 The word “know” has two meanings, which are sometimes hard to distinguish. The first is as part of the verb to know, as in “I know where I’m going”. The second meaning is as a filler, as in “We were in the car, you know, when she told me about Sarah”. Here the first meaning should be typed as simply “know”, as in “I know what you’re thinking”, while the second meaning should be typed as “knowD”, as in “We were just strolling down Fifth Avenue, you knowD what I mean, when the taxicab stopped right in front of us.”

3 The word "like" has two major meanings, as a verb and as a comparative; it is also very generally used as a filler. The verb form is disambiguated by typing "likeV", and the comparative form is disambiguated by typing "likeC". Here are rules to help with this disambiguation.

a. The word "like" is always a comparative after any form of "seem", "look", "sound",

"feel", "smell" or "taste"; that is, "seems likeC ...", "look likeC ... ", “felt likeC ... “, etc.

b. The word "like" is usually a comparative immediately before "this" or "that"; for example, “I won’t put up with stuff likeC that.” However, there are exceptions, as in, “It’s like, this is a dingy rug,” or “I likeV that a lot.”

c. Anytime the word "like" is used in a sentence where the meaning would be unchanged by removing this word, it is a filler, not a comparative. For example, “I ate like about six red apples”.

d. When the word "like" is used with the meaning of “such as”, usually preceding an example or list of examples, treat it as a comparative. For example, “I love soft colors, likeC rose or amethyst”.

e. If there is no obvious comparison being made, treat the word "like" as a filler. For example, “I walked up to him, and he’s like ‘what do you want’, and I’m like ‘I need a telephone’”.

4. The word “mean” has two distinct usages. One is as an adjective, as in, “he’s mean to me”, and the other is a verb, as in “What do you mean by that?”. The first meaning should be typed as “meanAFF”, as in “Don’t be so meanAFF!”, while the second meaning should be simply typed as “mean”, as in “I mean to go ahead with my plan”.

5. The word “well” has at least three distinct meanings. It is often used as a filler; it is an adverb; and it has a special use as a form of conjunction. The filler use, as in, “Well, then we like, you know, went to the country”, is transcribed as simply “well”. The adverbial use, as in “I know him well”, is transcribed as “wellA”. The conjunction use, as in “she knits baby clothes as well as sweaters”, is transcribed as “wellC”. Note that wellC is always preceded by the word “as”.

6. New Disfluency Rule: A word that is not otherwise in the disfluency dictionary (that is, it is different from: ""kind", "know", "like", "mean", "mm" and "well") , but is used in a disfluent manner, should have "DX" appended to it; e.g., "Well, this is sortDX of, you knowD, well ..."

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