Clin Soc Work J
DOI 10.1007/s10615-010-0300-7

ORIGINAL PAPER

EMDR and the Adaptive Information Processing Model: Integrative Treatment and Case Conceptualization

Francine Shapiro · Deany Laliotis

Abstract EMDR is a comprehensive psychotherapy approach that is compatible with all contemporary theoretical orientations. Internationally recognized as a front-line trauma treatment, it is also applicable to a broad range of clinical issues. As a distinct form of psychotherapy, the treatment emphasis is placed on directly processing the neurophysiologically stored memories of events that set the foundation for pathology and health. The adaptive information processing model that governs EMDR practice invites the therapist to address the overall clinical picture that includes the past experiences that contribute to a client's current difficulties, the present events that trigger maladaptive responses, and to develop more adaptive neural networks of memory in order to enhance positive responses in the future. The clinical application of EMDR is elaborated through a description of the eight phases of treatment with a case example that illustrates the convergences with psychodynamic, cognitive-behavioral, and systemic practice.

Keywords EMDR · Adaptive information processing · Integrative treatment · Memory networks

While clinicians from the various psychological modalities agree on the symptomatology of the well-known disorders, their ways of conceptualizing and treating them differ as a result of the specific theoretical paradigm to which they adhere (Barlow et al. 2005). For EMDR (Eye Movement Desensitization & Reprocessing), this paradigm entails the view that psychopathology is based on memories of earlier disturbing experiences that have been incompletely processed by the brain's inherent information processing system. Incomplete processing means that a disturbing event has been stored in memory as it was originally experienced with the emotions, physical sensations, and beliefs fundamentally unchanged. Regardless of how much time has elapsed or whether the person remembers it, the memory remains unaltered and provides the basis of current responses and behaviors. This conceptualization offers a more contemporary definition of the unconscious (Shapiro 1995, 2001; Solomon et al. 2001), and is both complementary to and explanatory of clinical phenomena that are the hallmarks of various orientations, such as transference in psychodynamic therapy, negative beliefs in cognitive therapy, and systemic impasses in family therapies (Dworkin 2005; Kaslow et al. 2002; Shapiro 2001, 2002; Shapiro et al. 2007).

Most mental health professionals would agree that current clinical issues are based at least in part, on previous life experiences. However, the hallmark of EMDR therapy is the emphasis on the physiologically stored memory as the primary foundation of pathology, and the application of specifically targeted information processing as the primary agent of change. The Adaptive Information Processing (AIP) model (Shapiro 1995, 2001, 2002, 2007; Solomon and Shapiro 2008) guides the clinical application of EMDR and has proved both explanatory and predictive of positive treatment effects. EMDR's three-pronged approach of past, present and future guides the clinician in identifying and processing, (1) the relevant past experiences that inform the client's problems in the present; (2) the ongoing present

F. Shapiro
Mental Research Institute, P.O. Box 750,
Watsonville, CA 95077, USA

D. Laliotis (✉)
EMDR Institute, 3825 Morrison St., NW,
Washington, DC 20015, USA
e-mail: info@deanylaliotis.com

Published online: 12 October 2010

experiences that continue to trigger maladaptive responses to current life demands; and, (3) templates of future actions to optimize the client's capacity to respond adaptively given the current context of their lives. This article provides an overview of both the theory and practice of EMDR as a distinct integrative psychotherapy approach used to address both individual and systemic issues.

Efficacy

EMDR has proved to be effective in the treatment of trauma in approximately 20 controlled studies that entailed comparisons to both pharmaceuticals (van der Kolk et al. 2007) and a number of forms of psychotherapy (see Bisson and Andrew 2007). On the basis of this evidence, EMDR has been recommended as a first line treatment in numerous practice guidelines, including those of the American Psychiatric Association (2004). A unique component of EMDR is the use of bilateral stimulation (i.e., eye movements, tactile taps, or auditory tones) as part of the treatment process. This has been the source of some controversy (see Perkins and Rouanzoin 2002), since unfortunately, dismantling studies that have attempted to test the effectiveness of the eye movement component with clinical populations are flawed by their use of inappropriate populations and insufficient amounts of treatment (Chemtob et al. 2000; DVA/DOD 2004). However, a dozen randomized studies testing the eye movements in isolation have found them to be associated with facilitated memory retrieval, reduced negative emotions, increased vividness of mental imagery, and attentional flexibility (see Sack et al. 2008 for a review). All of these are elements that are discernable during the EMDR treatment process.

A typical EMDR session reveals to the clinician a rapid appearance and change in emotions, insights, sensations, and memories with each new set of bilateral stimulation and an accompanying reduction of subjective distress (for session transcripts see Shapiro 2001, 2007; Shapiro and Forrest 1997). The goal is to process pivotal memories which we have found results in not only the elimination of diagnoses, but a resultant alteration in interpersonal relations as the clients experience themselves differently with significant others (see Brown and Shapiro 2006; Shapiro 1995, 2001, 2002; Shapiro et al. 2007).

As a comprehensive treatment approach, EMDR can be successfully applied to a broad range of clinical complaints, some of which have been considered largely intractable or difficult to treat. For instance, subsequent to the processing of pivotal memories, the sustained reduction or complete elimination of phantom limb pain has been reported (Russell 2008; Schneider et al. 2007, 2008; Wilensky 2006; see also Ray and Zbik 2001) in independent evaluations. Further, in a study of ten child molesters who had themselves been victimized as children, after the addition of six EMDR memory processing sessions ninety percent of them demonstrated sustained reduced arousal to children, as measured by the penile plethysmograph. They were also able to recognize the harm they had done to their own victims, and accept the appropriate responsibility for their actions. The treatment effects were maintained at a 1-year follow-up (Ricci et al. 2006). There was no change in the comparison condition.

These types of clinical results highlight the conceptualization that EMDR processing can eliminate the dysfunctional emotions and physical sensations inherent in the memory itself changing the client's experience in the present. Similarly, the processing of pivotal memories has been reported to result in the normalization of attachment style in adults and children (Madrid et al. 2006; Kaslow et al. 2002; Wesselman 2007; Wesselmann and Potter 2009). It is important to emphasize that memories of even ubiquitous events appear to set the foundation for a wide range of pathologies. For instance, the onset of both body dysmorphic disorder (Brown et al. 1997) and olfactory reference syndrome (McGoldrick et al. 2008) were reported to be childhood humiliations, and the symptoms were eliminated after one to three EMDR memory processing sessions. Although EMDR can successfully address the overt symptoms associated with a variety of clinical diagnoses, its overarching goal is to achieve an alteration of the underlying condition that is generating the dysfunctional response in the present as part of a comprehensive treatment effect. These outcomes are achieved by placing memory networks and information processing at the center of both treatment and practice.

Adaptive Information Processing Model

The theoretical foundation for the therapeutic application of EMDR is the Adaptive Information Processing (AIP) model developed by Shapiro (1995, 2001, 2002, 2007), which emphasizes the pivotal role of experiential contributors to both dysfunction and health. According to this model, and consistent with neurobiological findings, one identifies and makes sense of new experiences within the context of existing memory networks. In addition, the information processing system functions to move disturbances to a level of adaptive resolution. What is useful is incorporated, what is useless is discarded, and the event serves to guide the person appropriately in the future. For example, while most children have experienced humiliation at some time in grade school, for some, the event becomes integrated with many other events, both positive and negative, and is largely forgotten. For others, such a

humiliation becomes the foundation for inappropriate responses in the future. The difference is that when an event is not fully processed, the experience remains stored in memory with the emotions, physical sensations, and beliefs that were part of the original event. As a result, the memory is not integrated with other memories that were successfully processed. Consequently, when a similar experience occurs in the future, perhaps involving an authority figure like an insulting teacher, it triggers the unprocessed memory, which then automatically colors the perception of the present experience.

When clients seek psychotherapy for current problems in their lives, they are often focused on their symptoms as the problem. Consequently, the clinician wants to understand what the client is actually experiencing in the present, i.e., negative thoughts and feelings, uncomfortable body sensations that are out of proportion to the situations that are triggering the negative responses. Additionally, similar to other approaches such as psychodynamic therapy, the EMDR clinician seeks to identify the relevant past experiences that are perpetuating the maladaptive patterns of response, resulting in the client's clinical complaints. According to the AIP model, the pathology is not driven by the person's reaction (e.g., belief, emotion) to the past event as is postulated in cognitive-behavioral approaches. Rather, the reaction itself is informed by the responses and/or perceptions inherent within a dysfunctionally stored memory or network of memories that are disconnected from networks containing adaptive information. The EMDR clinician, guided by the AIP model, explores clients' current difficulties from this perspective from the very beginning of therapy, as the therapeutic rapport is being established, offering this explanation of their problems. Clients are often relieved to understand that their problems have a neurobiological basis, as well as the universality of their human experience as a counterpoint to the common belief that they "should have" been able to resolve their problems on their own. We suggest that the presence of these unmetabolized components of memory explains why clients will often describe their childhood traumas in the same kind of language and intonation they used when the event occurred, and demonstrate the emotions, postures and beliefs consistent with that developmental stage. They do not merely *describe* the feelings of shame and helplessness of the past, but actually *experience* these emotions and physical sensations in the present.

These unmetabolized components of memory are accessed in a systematic way during EMDR processing. The targeted memory that is "frozen" in time becomes "unfrozen," and new associations are made with previously disconnected adaptive information related to survival, positive experiences, and one's sense of identity. Even in the case of a nightmare or "screen memory," processing allows an unpeeling of the veil to reveal and then resolve the core emotional source of the imagery (Shapiro 2001; Wachtel 2002). As this assimilation occurs, new insights and emotions emerge and the earlier affect states and perceptions are generally discarded. With the foundation of the fully processed memory, clients are no longer subject to the same emotional volatility, distorted perceptions and intense somatic responses, and instead experience a new sense of self that is congruent with their current life situation. The changes in transference responses, defensive patterns, cognitions, and somatic reactions are clearly observable as the memories underlying these manifestations are processed. The client's experience is more informed by the present, allowing for greater flexibility in their reactions, thus increasing the likelihood of developing more adaptive patterns of response that are informed by the current context of their lives.

In addition, new memories can be successfully incorporated as the therapist assists clients to acquire the social learning necessary to fill in their developmental deficits. However, until the processing of the earlier memories is complete, the dysfunctional neural storage will hamper the desired personal growth. Significantly, the EMDR treatment of a borderline personality disordered client (Brown and Shapiro 2006), resulted in normalization of affect regulation after twenty processing sessions directed at nodal memories that were informing the client's maladaptive responses. While specific stabilization and affect regulation techniques may be effective and highly desirable in many cases (Schore 2003), the instability is often *caused* by the unprocessed memories that are contributing to the dysfunction.

The overall goal of EMDR, therefore, is to address the current problems of daily living by accessing the dysfunctionally stored memories that are being triggered by the client's current life conditions, and engage the natural neural processes by which these memories are transmuted into appropriately stored memories (Shapiro 1995, 2001, 2007; Shapiro et al. 2007; Siegel 2002; Stickgold 2002, 2008; van der Kolk 2002). The end result is an assimilation of the new information into extant memory structures. When this has occurred, individuals discover that, while they are able to verbalize the event and what they have learned from it, they no longer experience the associated negative affects and physical sensations. It is this rapid form of learning (i.e., reprocessing) that is the essence of EMDR treatment.

Eight-Phase Treatment Approach

The proper application of EMDR as a comprehensive treatment approach that addresses a wide range of clinical complaints caused or exacerbated by prior negative

Table 1 Overview of EMDR treatment

Phase	Purpose	Procedures
Client History	• Obtain background information	• Standard history-taking questionnaires and diagnostic psychometrics
	• Identify suitability for EMDR treatment	• Review of criteria and resources
	• Identify processing targets from positive and negative events in client's life	• Questions regarding (1) past events that have laid the groundwork for the pathology, (2) current triggers, and (3) future needs
Preparation	• Prepare appropriate clients for EMDR processing of targets	• Education regarding the symptom picture
	• Stabilize and increase access to positive affects	• Metaphors and techniques that foster stabilization and a sense of personal self-mastery and control
Assessment	• Access the target for EMDR processing by stimulating primary aspects of the memory	• Elicit the image, negative belief currently held, desired positive belief, current emotion, and physical sensation, and baseline measures
Desensitization	• Process experiences and triggers toward an adaptive resolution (0 SUD level)	• Process past, present, future
	• Fully process all channels to allow a complete assimilation of memories	• Standardized EMDR processes that allow the spontaneous emergence of insights, emotions, physical sensations and other memories
	• Incorporate templates for positive experiences	• "Cognitive Interweave" to open blocked processing by elicitation of more adaptive information
Installation	• Increase connections to positive cognitive networks	• Identify the best positive cognition (initial or emergent)
	• Increase generalization effects within associated memories	• Enhance the validity of the desired positive belief to a 7 VOC
Body Scan	• Complete processing of any residual disturbance associated with the target	• Concentration on and processing of any residual physical sensations
Closure	• Ensure client stability at the completion of an EMDR session and between sessions	• Use of guided imagery or self control techniques if needed
		• Briefing regarding expectations and behavioral reports between sessions
Reevaluation	• Evaluation of treatment effects	• Explore what has emerged since last session
	• Ensure comprehensive processing over time	• Re-access memory from last session
		• Evaluation of integration within larger social system

(Shapiro 2005)

experiences follows a prescribed set of eight phases, as seen in Table 1. These phases represent a systematic way of addressing and reprocessing the negative experiences contributing to the current dysfunction, along with the positive experiences needed to bring a client to optimal health. A case example illustrates the Eight-Phase approach of EMDR.

"Jenny" is a 39 year-old woman who has come to therapy at the suggestion of her psychiatrist because she is overwhelmed by the ongoing demands of her daily life. She experiences symptoms of anxiety and depression, is fearful of making mistakes, and is hypercritical of herself and others. She reports little satisfaction in her marriage and in her job, but "goes along to get along." She is being treated with antidepressants with minimal benefits. She had previously been in therapy for many years attempting to address her low self-esteem and her overwhelm with the demands of her daily life. Just prior to the initial consultation, she had witnessed her mother and aunt having a serious fight, attempted to intervene unsuccessfully, and subsequently experienced acute symptoms of sleep disturbance, irritability, increased anxiety and stomach aches.

Jenny is the younger of two children and grew up in a chaotic family environment. Her parents fought often; her mother had frequent outbursts of rage towards her and her brother. Her alcoholic father was passive and unavailable. She tried to be a "good girl" hoping it would keep her out of trouble, but to no avail. Her overall sense of emotional and physical safety in the world was tentative.

This rudimentary case history offers a number of ways of understanding the nature of Jenny's current problems from an EMDR perspective. In the History-taking Phase, the clinician attempts to understand not only the nature of the client's issues in the present, but the past experiences that are contributing to current difficulties. The overall goal of EMDR is to achieve the most comprehensive treatment effects while maintaining the client's stability within that person's existing social system. It is important therefore, to evaluate a given case from a systems perspective, as well as individually, to assess the client's preparedness for EMDR and identify the early negative experiences and developmental deficits that should be targeted for processing.

From the AIP perspective, Jenny's anxiety and depression about being able to meet the demands of her daily life

and her sense of overwhelm are rooted in her early childhood experiences of living with parents who were emotionally abusive, neglectful, physically violent and unpredictable. Watching her older brother being beaten when she was a 2-year-old, would likely have led to fear for her own physical safety and a lifelong vigilance about making sure she did everything she could to keep herself safe. Furthermore, we hypothesize that her current proclivity to assume that it is always her fault when something goes wrong is based on the direct and indirect communications from her mother that she and her brother were the cause of her mother's distress. Jenny also reported a number of incidents in which her father made promises to her he didn't keep, further reinforcing her sense of unworthiness and defectiveness as a person.

From a psychodynamic perspective, Jenny's problems in daily living were shaped by the early events within her family of origin and the intrapsychic conflicts that developed as a result of these formative experiences. While she loved her mother and longed for her comfort, nurturance and approval, she also feared her and was often criticized and rejected by her. Her father, who was passive and only intermittently available, did not protect her from her mother's verbal and physical assaults. Consequently, she learned to avoid depending on others, lest she be met with rejection, disapproval or, worst of all, be punished at the cost of having her dependency needs unmet. Additionally, she currently regards herself as unimportant as she has internalized her parents' abuse and neglect as a reflection of her own unworthiness as a person. Finally, her husband resembles her father in his passivity and inattentiveness, thereby reinforcing her negative experience of self.

From a systems perspective, Jenny has replicated in her current family the dysfunctional patterns of relating that she experienced in her family of origin. How Jenny presents herself to her husband, friends, boss and co-workers serves to crystallize her identity as unimportant, unworthy and not good enough as a person, as people respond to her in kind. Finally, from a cognitive-behavioral perspective, Jenny engages in maladaptive patterns of thinking and behaving, and these learned patterns are the source of her difficulties. It can be seen that these three psychological orientations all recognize the role of early experiences as the foundation of pathology.

In adaptive information processing terms, children accumulate physiologically stored memories that set the foundation for the way they experience themselves in relation to other people. These memories, when dysfunctionally stored, are the cause of current maladaptive responses. In Jenny's case, the daily demands of life, such as completing a report for her boss, putting her daughter to bed, or dealing with her parents when they come for a visit, "trigger" in the present the early feelings of anxiety and the sense of "not being good enough" inherent in these stored memories, causing her to feel overwhelmed and fearful that something bad is going to happen.

Part of the clinician's task in the History-taking Phase is to evaluate the client's positive experiences, because the dysfunctional memories that will be reprocessed link into these adaptive memory networks, and new learning takes place as the memory is transmuted to adaptive resolution. The clinician evaluates the extent to which the client has the necessary skills and experiences to address future challenges and identifies memory templates that need to be developed. In Jenny's case, the clinician determined that while she is intelligent, loves to read and has a great sense of humor, she has few friends and no current outside activities. As a family they are socially isolated; they do not know their neighbors and they do not participate in a community. As parents of a 2-year-old daughter who want to have more children, it would be important for Jenny and her husband to develop a social network. Incorporating EMDR's three-pronged approach to developing a comprehensive treatment plan, the clinician will have to (a) address Jenny's past experiences of abuse and neglect, (b) assess her present anxieties about current relationships, and (c) assist in incorporating the social skills necessary to develop new relationships in the future. In short, the past, present, and future must all be addressed through appropriate targeting and processing.

During the History-taking Phase, the clinician can use a variety of techniques to identify the relevant life experiences as well as the current triggers that need to be processed with EMDR. Adults can be asked to identify the ten worst experiences in their lives from childhood, or they can map out chronologically with the therapist the nodal events of their history that relate to the current issue (Shapiro 1995, 2001). Some clinicians construct genograms (Shellenberger 2007) to identify systemic issues and the significant family members that are involved. It is also important to inquire about other relationships with significant figures such as teachers, coaches and peers who may have had an important impact on the client for better or worse.

Typically, the clinician asks clients to elaborate on the present situations that are causing the distress, asking them to recall other times in their lives when they had similar experiences, identifying the first time they remember them. Some clients, however, cannot recall through direct questioning the first time or an earlier time that such an event occurred. For those clients, a memory retrieval technique is used including asking them to remember the most recent time, notice where they feel it in their body and allow their mind to scan back to an earlier time (Shapiro 1995, 2001). The goal is for them to bring to conscious awareness the memories that are contributing to the current dysfunction.

In Jenny's case, she could easily identify a number of early experiences from childhood that made her feel unsafe and unworthy. For example, she recalled several times when her mother became furious with her–when she went outside without a shirt like her brother, had trouble tying her shoes at age 4, tried on a bra when she was 6 years-old, over-baked chocolate chip cookies that came out too dark, and was held down and beaten at age nine for having a headache because "children don't get headaches," to name a few. The earliest memory was that of watching her mother beat her brother against the radiator. These are some of the nodal experiences, starting with the radiator incident, which caused her to conclude that she wasn't safe and that there must be something wrong with her because she was unable to do much about it. While she always experienced distress when recalling the incident, she did not make the connection that her current symptoms of anxiety and low self-esteem were in any way related to this and other similar childhood experiences. The History-taking Phase is the first opportunity to begin to make past connections to present difficulties with the client, identifying developmental deficits as well as mapping out a course of action for EMDR reprocessing.

The Preparation Phase of EMDR entails a number of important components, not the least of which is establishing the necessary therapeutic rapport and the spirit of co-participation with the client. A therapeutic contract is negotiated that addresses the client's problems and how they will be addressed, what the current reinforcers for these problems are, what choices can be developed for the future, and what this kind of therapy can help them achieve. Establishing client stability and empowerment and a solid therapeutic relationship are the basic elements of the Preparation Phase of EMDR. The importance of the therapeutic relationship and the spirit of collaboration that is inherent in the two-person model of psychotherapy (Dworkin 2005; Wachtel 1977) cannot be overemphasized. The clinician's attentiveness helps the client maintain a simultaneous awareness of the present conditions of safety and security within the context of the therapeutic relationship and the disturbing memories–often solitary and desolate experiences—that emerge during the therapeutic session. This parallel process in EMDR psychotherapy generates a positive relational experience for clients, strengthening linkages to more adaptive memory networks that can alter their relational template (Wesselman 2007).

It should be noted that the foundation of interpersonal difficulties that can complicate the therapeutic relations are often found in the stored memories that contribute to present dysfunction. The very experience of visiting a therapist is likely to link into the potentially dysfunctional memory networks associated with authority figures, such as previous therapists, teachers, or parents. Hence, whether one is noting negative transference (or countertransference) the source will be the unprocessed memories within the associated network. For instance, therapists have often commented on the problems inherent in treating a person with a Borderline Personality Disorder (BPD) diagnosis. Regardless of the amount of time spent building a relationship, it is common with this kind of client to observe without warning shifts between positive feelings for a therapist (or lover) and rage. The AIP model interprets this behavior as a situation in which positive experiences have been stored in one memory network and disturbing experiences of early abandonment or abuse in another. Until the earlier memories are fully processed and integrated, the anger and feelings of abandonment will continue to emerge whenever an experience in the present triggers the dysfunctional associative memory network. In short, the feelings emerge because they are stored in the unprocessed memories. EMDR clinician will often directly address these kinds of reactions by (a) acknowledging the reality of the current emotional state, (b) exploring with the client past/present connections in reference to the AIP model, and then (c) use the recent interaction as a springboard to identify and then process the earlier memories feeding the negative response. Hence, while transference is not actively utilized as an integral component of EMDR psychotherapy (see Edmond et al. 2004) the psychodynamically trained therapist can utilize the transference reaction as a potential target for EMDR processing, since it provides a point of entry into the memories that are triggering the transference (Dworkin 2005).

For some clients, the very change they seek might be part of the therapeutic challenge, as change itself can be stressful. Another aspect of the preparation Phase in EMDR is to evaluate the client's capacity to self-soothe and manage stress so he or she can continue to function in their lives while reprocessing highly disturbing memories. The ability to use self-control techniques introduces an element of mastery that some clients may not bring to therapy, so the Preparation Phase is an opportunity to develop these skills. While the overall goal of EMDR therapy is permanent trait change so that the negative aspects of the earlier memories are no longer stored, clients need to be able to manage their stress responses in this early stage of therapy in order to minimize triggering, as well as decrease the likelihood that subsequent negative incidents will be experienced (Shapiro 2007). A wide variety of self-control techniques can be used to teach clients how to manage stressful states such as the Safe Place exercise, which is part of the standard EMDR protocol (see Shapiro 2001). Clinicians are encouraged to include other self control techniques commonly used in psychotherapy practice such as mindfulness techniques and progressive relaxation exercises as necessary to adequately

prepare a client for the reprocessing phases of EMDR psychotherapy.

The reprocessing phases in EMDR (Phases 3–7; see Table 1) consist of highly interactive processes starting with the accessing of the memory designated for processing through the closure of the clinical session (see Shapiro 2001). The number of processing sessions needed will range from approximately one-to-three for single event trauma, to whatever is needed to address all the relevant facets of multiply traumatized victims. For those who have been multiply traumatized as children, this will include processing memories to address developmental deficits. The relevance of memories selected for processing with EMDR is understood within the broader context of the client's treatment plan, as agreed upon by therapist and client. In Jenny's case, her fear and overwhelm, along with her low self-esteem, are conceptualized as the result of early childhood experiences that are dysfunctionally stored in her memory networks. These experiences include the numerous familial difficulties and negative responses from others. Although there are many memories that have contributed to Jenny's dysfunctional responses, it is not necessary to target each discrete event individually. Rather, *representative* memories are selected for processing since positive treatment effects often generalize to other memories that are connected to them through associative memory networks.

Jenny's reprocessing work began with the radiator incident in which she watched her brother being beaten. The reprocessing is initiated by having the client focus on the identified components of the target memory experience (image, negative belief, sensations) to activate the associative processes in the brain. In this case, Jenny was asked to focus on the image in her mind with the negative belief of "I'm powerless," with the current emotions of fear and shame and the corresponding sensation in her stomach. As the bilateral stimulation is being administered, Jenny is directed to track the associations that emerge as she is instructed to maintain a receptive posture, "just noticing" what comes up. After a set of bilateral movements (24–36 passes or approximately 30 seconds), the client is asked to report any new associations that may arise. The clinician simultaneously tracks the client's responses and guides the focus of attention to ensure that the memory network is being accessed and the various channels of association within the network are addressed.

A typical reprocessing session for Jenny often revealed multiple experiences that were similarly stored; that is, other memories where her mother was angry, memories that are connected through similar affects such as shame and humiliation, fear, and so forth, or other instances where Jenny wrongly concluded that there was something wrong with her. As these past associations spontaneously emerge into conscious awareness, the negative memories give way to new insights, positive thoughts, feelings and sensations that are more adaptive. For example, Jenny's problems in life are due in part to the overwhelming experience of powerlessness informed by her early experiences. As processing progressed, she could acknowledge that while this sense of incapacity was actually valid when she was a child, as an adult she now had the power to make better choices for herself than those that were made for her by her parents. This insight is not just an intellectualization; it is an integrated experience that is congruent for the client on the cognitive and affective levels, resulting in a trait change, not just a temporary shift in the client's state, as indicated in the numerous previously cited studies demonstrating long-term change (see also Brown and Shapiro 2006; Levin et al. 1999; Manfield and Shapiro 2003; Zabukovec et al. 2000). This integration alters the way the clients experience these memories, allowing them to acquire new skills and develop more adaptive characteristic response patterns. In Jenny's case, her frequent state of overwhelm, which had been previously triggered by the demands of her life on a daily basis resolved within the first 3 months of memory reprocessing with EMDR.

What is described here is the transmutation of a stored memory to a more adaptive form as the result of rapid learning that brings together the relevant information that already exists in the client's memory networks but was unavailable at the time of the event. In Jenny's case, for example, several additional memories of abuse spontaneously emerged during the processing that helped her with the adult recognition that her fear was actually appropriate at the time, given her mother's out-of-control behavior. Since attention is paid to cognitive, emotional and somatic content, the reprocessing phases are not considered complete until the desired positive beliefs are deemed, "completely true," and the client's bodily experience is congruent on a sensory level with the positive cognitive and affective shifts that have been achieved. The Closure Phase in EMDR is used to ensure that the client is sufficiently oriented with an appropriate state of equilibrium at the end of the session and to brief the client about what they can expect to occur *between* sessions. Thus, clients are educated about the likelihood that the processing will continue as the brain continues to make relevant associations and derives meaning out of the "new" memory as it has now been stored.

The Reevaluation Phase of EMDR examines the maintenance of treatment effects over time, and any systemic issues that may have arisen between sessions. As the EMDR therapist indicates to the client in the Closure phase, "the processing continues," and often there are changes taking place on multiple levels that bring other issues to the foreground as the identified issue recedes. For

example, a client who initiated EMDR therapy for a panic disorder that started after her spouse left had no idea that the current symptoms were connected to her early experience of being separated from her family of origin. After successfully reprocessing the early experience of being separated, she was able to acknowledge that the decision to be sent away, while a bad one, was made with her best interests at heart and not because she was unlovable (which was her initial negative self belief). Between sessions, however, she noticed that she was becoming uncharacteristically irritable and quick to anger with her elderly mother, who was in her care. In the reevaluation session, it became apparent that her anger was about the fact that she was taking care of her mother in a way that her mother had never done for her. While the initial memory was resolved, the recognition of the impact of the early separation on her life presented a new challenge for her. In conversation with the therapist, she was able to recognize her anger towards her mother had been previously repressed, and this presented an opportunity to process the rejection and betrayal of the past events, and to address how her choice of partners was connected to the early, unmet longings for her mother's love and comfort. What began as a treatment plan that was organized around the elimination of a symptom had become a comprehensive treatment plan with a much broader clinical scope.

In addition to exploring the changes in the larger context of the client's life, the EMDR therapist always returns to the initial target memory to ensure that the treatment effects have been maintained and to explore other aspects of the experience that may have emerged since the previous session. If the memory processing was incomplete, the therapist elicits the memory and the processing is resumed until it is brought to resolution. For Jenny, the initial memory of her mother beating her brother remained resolved. As a result of the previous session, Jenny reported feeling remarkably less anxious at home and at work the following week, and spent more leisure time with her daughter. She also developed a greater appreciation for the level of anxiety she had been managing all her life as she considered what it would be like for her 2 year-old daughter to be exposed to similar events.

As the past memories of neglect and abuse were successfully reprocessed and Jenny began to feel better about herself as a person, she was learning to negotiate the demands of her life and her own needs. Using a recent experience in which she felt neglected by her husband, the clinician targeted for processing her present anxiety about asking for what she wanted. When her anxiety dissipated, additional processing involved the incorporation of a positive memory template, which was used to help her rehearse how she could ask him to attend to her in the future. Several scenarios were generated with the guidance of the therapist in which the appropriate behaviors were operationalized, along with the appropriate thoughts, feelings and sensations, while simultaneously applying consecutive sets of bilateral stimulation. To help strengthen her experience and the likelihood of success, multiple challenge situations were posed, such as receiving an unfavorable response to her request.

The Future Template, as part of the three-pronged approach of EMDR, is used to help the client develop adaptive responses to use in the future, which are strengthened and integrated into the adaptive memory networks. The resolution of the past experiences of Jenny's neglect and abuse cleared the way to address the developmental deficits that inevitably accompany these formative experiences. While many behavioral changes occur spontaneously as a direct result of the initial memory processing, the Future Template is used to augment the client's new sense of self, particularly where skills-training is needed.

Summary and Conclusion

The evolution of Jenny's case can be understood from a number of theoretical orientations. From an EMDR/AIP perspective, the source of the clinical problems are the stored unprocessed memories which are directly targeted, and the additional processing of positive memory templates further enhance appropriate future action. However, all the theoretical approaches described here focus on developing new, more adaptive patterns of response that are informed by the present and future demands of the client's life rather than the past and may be incorporated into a comprehensive EMDR treatment.

From a cognitive-behavioral orientation, Jenny would be taught to learn new patterns of thinking and behaving so that she can be more effective in achieving her needs across social contexts. Just as the experiences underlying the identified dysfunctional beliefs and behaviors can be directly targeted with EMDR memory processing, so too can coping/skills training and modeling be incorporated into Jenny's EMDR treatment and enhanced by processing. From a systemic vantage-point, a marriage is based on specific established interactional styles, so that the individual changes in one partner create the potential for alternative patterns of relating that may require both parties to participate in therapy. Indeed, Jenny and her husband began couples' counseling to address these concerns. Regardless of the kind of systemic orientation used, one generally finds that the therapeutic impasses are based in the earlier memories that set the foundation for the dysfunctional interpersonal interactions (Shapiro et al. 2007). Processing these memories changes the interpersonal

dynamics as the individual's sense of self is transmuted, resulting in new cognitive, emotional, and behavioral responses. The various forms of family therapy can also inform the types of targets used for processing.

From a psychodynamic perspective, the rationale for EMDR processing of the various pivotal memories is based upon an understanding of how the past experiences are manifested in the client's current life. According to the psychodynamic lens, the early negative experiences are the genesis of the client's intrapsychic conflicts and her psychological defenses serve to guard against these painful early experiences. Over time, these childhood response patterns become characteristic of a person, affecting his or her ability to successfully respond to the demands of adulthood. From this perspective, Jenny's life difficulties were a result of her longing to be loved by unreliable attachment figures, fear of rejection, and the denial of her need, using as her defense the conclusion that she was unworthy. In resolving the early experiences that were the foundation of her conflicts, her fears and defensive patterns were rendered obsolete. She was able to develop a healthy self-concept as a competent and worthy person.

As Jenny's EMDR therapy progressed, there was an increased awareness on her part of the connections between past and present, which helped her understand the source of her conflicts. As the emotional pain and accompanying negative beliefs about herself were "worked through" by means of EMDR, Jenny now experiences a generalized sense of safety and an increased ability to be present and to respond to other peoples' needs along with her own. This, in turn, has allowed her to make better choices for herself and others, resulting in greater satisfaction at home and at work. With her increased sense of worthiness as a person and greater competency in managing her life, Jenny has been able to cease her antidepressant medication after years of use. She subsequently became pregnant with a second child, a goal she had articulated for herself in the initial stages of treatment. At the time of this writing, Jenny and her husband have successfully completed their treatments and are raising their two children.

The three-pronged approach is the framework that organizes the treatment approach for all clinical complaints in EMDR psychotherapy. In information processing terms, the past experiences underlying the client's current difficulties need to be processed to have a more authentic experience of self as a person in relationship with others. Whether seen as processing the survival memories that underlie the client defenses, the disturbing events that manifest as negative transference, dysfunctional beliefs, or interactional disruptions, EMDR psychotherapy is a comprehensive treatment approach with elements compatible with many psychotherapy traditions. Since EMDR is an integrative psychotherapy approach, guided by the AIP model, clinicians can incorporate techniques and interventions from other disciplines, as necessary, to meet the clinical demands of the situation. Within the three-pronged protocol, the various theoretical frameworks (e.g., psychodynamic, CBT, systemic), can also inform the selection of the memories targeted for processing. As we invite our clients to look through alternative lenses as a means of understanding and experiencing themselves and the world differently, it is incumbent upon us as a profession to challenge ourselves in the same way. EMDR offers an opportunity to not only transform memory and experiences, but to transform our relationship to therapeutic change itself.

References

American Psychiatric Association. (2004). *Practice guideline for the treatment of patients with acute stress disorder and posttraumatic stress disorder*. Arlington, VA: American Psychiatric Association Practice Guidelines.

Barlow, D. H., Shapiro, F., & White, M. (2005). *Supervision panel*. Anaheim, CA: Evolution of Psychotherapy Conference.

Bisson, J., & Andrew, M. (2007). Psychological treatment of posttraumatic stress disorder (PTSD). *Cochrane database of systematic reviews* 2007, Issue 3. Art. No.: CD003388. doi: 10.1002/14651858.CD003388.

Brown, K. W., McGoldrick, T., & Buchanan, R. (1997). Body dysmorphic disorder: Seven cases treated with eye movement desensitization and reprocessing. *Behavioural and Cognitive Psychotherapy, 25*, 203–207.

Brown, S., & Shapiro, F. (2006). EMDR in the treatment of borderline personality disorder. *Clinical Case Studies, 5*, 403–420.

Chemtob, C. M., Tolin, D. F., van der Kolk, B. A., & Pitman, R. K. (2000). Eye movement desensitization and reprocessing. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD: Practice guidelines from the international society for traumatic stress studies* (pp. 139–155–333–335). New York: Guilford Press.

Dworkin, M. (2005). *EMDR and the relational imperative*. New York: Brunner-Routledge.

Edmond, T., Sloan, L., & McCarty, D. (2004). Sexual abuse survivors' perceptions of the effectiveness of EMDR and eclectic therapy: A mixed-methods study. *Research on Social Work Practice, 14*, 259–272.

Kaslow, F. W., Nurse, A. R., & Thompson, P. (2002). Utilization of EMDR in conjunction with family systems therapy. In F. Shapiro (Ed.), *EMDR and the paradigm prism: Experts of diverse orientations explore an integrated treatment*. Washington, DC: American Psychological Association Press.

Levin, P., Lazrove, S., & van der Kolk, B. A. (1999). What psychological testing and neuroimaging tell us about the treatment of posttraumatic stress disorder (PTSD) by eye movement desensitization and reprocessing (EMDR). *Journal of Anxiety Disorders, 13*, 159–172.

Madrid, A., Skolek, S., & Shapiro, F. (2006). Repairing failures in bonding through EMDR. *Clinical Case Studies, 5*, 271–286.

Manfield, P., & Shapiro, F. (2003). The application of EMDR to the treatment of personality disorders. In J. F. Magnavita & J. F. Magnavita (Eds.), *Handbook of personality disorders: Theory and practice* (pp. 304–330). New York: Wiley.

McGoldrick, T., Begum, M., & Brown, K. W. (2008). EMDR and olfactory reference syndrome: A case series. *Journal of EMDR Practice and Research, 2*, 63–68.

Perkins, B. R., & Rouanzoin, C. C. (2002). A critical evaluation of current views regarding eye movement desensitization and reprocessing (EMDR): Clarifying points of confusion. *Journal of Clinical Psychology, 58*, 77–97.

Ray, A. L., & Zbik, A. (2001). Cognitive behavioral therapies and beyond. In C. D. Tollison, J. R. Satterhwaite, & J. W. Tollison (Eds.), *Practical pain management* (3rd ed., pp. 189–208). Philadelphia: Lippincott.

Ricci, R. J., Clayton, C. A., & Shapiro, F. (2006). Some effects of EMDR treatment with previously abused child molesters: Theoretical reviews and preliminary findings. *Journal of Forensic Psychiatry and Psychology, 17*, 538–562.

Russell, M. (2008). Treating traumatic amputation-related phantom limb pain: A case study utilizing eye movement desensitization and reprocessing (EMDR) within the armed services. *Clinical Case Studies, 7*, 136–153.

Sack, M., Lempa, W., Steinmetz, A., Lamprecht, F., & Hofmann, A. (2008). Alterations in autonomic tone during trauma exposure using eye movement desensitization and reprocessing (EMDR)—results of a preliminary investigation. *Journal of Anxiety Disorders, 22*, 1264–1271.

Schneider, J., Hofmann, A., Rost, C., & Shapiro, F. (2007). EMDR and phantom limb pain: Case study, theoretical implications, and treatment guidelines. *Journal of EMDR Science and Practice, 1*, 31–45.

Schneider, J., Hofmann, A., Rost, C., & Shapiro, F. (2008). EMDR in the treatment of chronic phantom limb pain. *Pain Medicine, 9*, 76–82.

Schore, A. N. (2003). *Affect dysregulation and the disorders of the self*. NY: WW Norton.

Shapiro, F. (1995). *Eye movement desensitization and reprocessing: Basic principles, protocols and procedures*. New York: Guilford Press.

Shapiro, F. (2001). *Eye movement desensitization and reprocessing: Basic principles, protocols and procedures* (2nd ed.). New York: Guilford Press.

Shapiro, F. (2002). Paradigms, processing, and personality development. In F. Shapiro (Ed.), *EMDR as an integrative psychotherapy approach: Experts of diverse orientations explore the paradigm prism* (pp. 3–26). Washington, DC: American Psychological Association Books.

Shapiro, F. (2005). *Eye movement desensitization and reprocessing (EMDR) training manual*. Watsonville, CA: EMDR Institute.

Shapiro, F. (2007). EMDR, adaptive information processing, and case conceptualization. *Journal of EMDR Practice and Research, 1*, 68–87.

Shapiro, F., & Forrest, M. S. (1997). *EMDR*. New York: BasicBooks.

Shapiro, F., Kaslow, F., & Maxfield, L. (Eds.). (2007). *Handbook of EMDR and family therapy processes*. New York: Wiley.

Shellenberger, S. (2007). Using the genogram with families for assessment and treatment—in EMDR and family processes book. In F. Shapiro, F. Kaslow, & L. Maxfield (Eds.), *Handbook of EMDR and family therapy processes* (pp. 76–94). New York: Wiley.

Siegel, D. J. (2002). The developing mind and the resolution of trauma: Some ideas about information processing and an interpersonal neurobiology of psychotherapy. In F. Shapiro (Ed.), *EMDR as an integrative psychotherapy approach: Experts of diverse orientations explore the paradigm prism* (pp. 85–122). Washington, DC: American Psychological Association Press.

Solomon, M. F., Neborsky, R. J., McCullough, L., Alpert, M., Shapiro, F., & Malan, D. (2001). *Short-term therapy for long-term change*. New York: Norton.

Solomon, R. W., & Shapiro, F. (2008). EMDR and the adaptive information processing model: Potential mechanisms of change. *Journal of EMDR Practice and Research, 2*, 315–325.

Stickgold, R. (2002). EMDR: A putative neurobiological mechanism of action. *Journal of Clinical Psychology, 58*, 61–75.

Stickgold, R. (2008). Sleep-dependent memory processing and EMDR action. *Journal of EMDR Practice and Research, 2*, 289–299.

van der Kolk, B. A. (2002). Beyond the talking cure: Somatic experience and subcortical imprints in the treatment of trauma. In F. Shapiro (Ed.), *EMDR as an integrative psychotherapy approach: Experts of diverse orientations explore the paradigm prism* (pp. 57–84). Washington, DC: American Psychological Association Press.

van der Kolk, B., Spinazzola, J., Blaustein, M., Hopper, J., Hopper, E., Korn, D., et al. (2007). A randomized clinical trial of EMDR, fluoxetine and pill placebo in the treatment of PTSD: Treatment effects and long-term maintenance. *Journal of Clinical Psychiatry, 68*, 37–46.

Wachtel, P. L. (1977). *Psychoanalysis and behavior therapy: Toward an integration*. New York: Basic Books.

Wachtel, P. L. (2002). EMDR and psychoanalysis. In F. Shapiro (Ed.), *EMDR and the paradigm prism* (pp. 123–150). Washington, DC: American Psychological Association Press.

Wesselman, D. (2007). Treating attachment issues through EMDR and a family systems approach. In F. Shapiro, F. Kaslow, & L. Maxfield (Eds.), *Handbook of EMDR and family therapy processes* (pp. 113–130). New York: Wiley.

Wesselmann, D., & Potter, A. E. (2009). Change in adult attachment status following treatment with EMDR: Three case studies. *Journal of EMDR Practice and Research, 3*, 178–191.

Wilensky, M. (2006). Eye movement desensitization and reprocessing (EMDR) as a treatment for phantom limb pain. *Journal of Brief Therapy, 5*, 31–44.

Zabukovec, J., Lazrove, S., & Shapiro, F. (2000). Self-healing aspects of EMDR: The therapeutic change process and perspectives of integrated psychotherapies. *Journal of Psychotherapy Integration, 10*, 189–206.

Author Biographies

Francine Shapiro Ph.D., is a recipient of the *International Sigmund Freud Award* from the City of Vienna, for distinguished contribution to psychotherapy, the American Psychological Association Division 56 *Award for Outstanding Contributions to Practice in Trauma Psychology,* and the *Distinguished Scientific Achievement in Psychology Award* from the California Psychological Association.

Deany Laliotis LICSW, is in private practice in Washington, DC, specializing in the treatment of traumatic stress disorders and attachment issues. She is a Senior Trainer for EMDR Institute and has been part of their faculty since 1993. Ms. Laliotis regularly presents at numerous conferences both in the US and abroad on the clinical applications of EMDR.