Treatment of Specific Phobias With EMDR

Conceptualization and Strategies for the Selection of Appropriate Memories

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Eye movement desensitization and reprocessing (EMDR) has been shown to be a structured, noninvasive, time-limited, and evidence-based treatment for unprocessed memories and related conditions. This paper focuses on EMDR as a treatment for specific fears and phobias. For this purpose, the application of EMDR is conceptualized as the selection and the subsequent processing of a series of strategically important memories of earlier negative learning experiences concerning specific objects or situations. Firstly, the practical application and conceptualization of the treatment of phobias with EMDR is presented and compared with an exposure-based treatment approach. Next, specific attention is given to the assessment and selection of appropriate memories for processing. It is hypothesized that phobias with a nontraumatic background, or those in later stages of treatment after some reduction in anxiety has been achieved, would profit more from the application of a gradual in vivo exposure, whereas trauma-based specific phobias and those with high initial levels of anxiety would respond most favorably to EMDR.

Keywords: EMDR; specific phobia; in vivo exposure

Apart from its protective function, an anxiety response can be disruptive and maladaptive in itself, especially when a person starts to demonstrate an excessive and unreasonable fear of certain objects or situations that are in fact not dangerous. When this is the case, it is likely that the person fulfils the criteria for a specific phobia (*Diagnostic and Statistical Manual of Mental Disorders*, *DSM–IV–TR*, American Psychiatric Association, 2000). This means that (1) the fear is elicited by a specific and limited set of stimuli (e.g., snakes, dogs, injections, etc.), (2) a confrontation with these stimuli results in intense fear and avoidance behavior, and that (3) the fear is unreasonable and excessive to a degree that interferes with daily life.

Phobic symptoms are remarkably common in the general population (Agras, Sylvester, & Oliveau, 1969). Epidemiological studies that have attempted to evaluate the prevalence of specific phobias show that these are more prevalent than any other group of psychiatric disorders studied, with lifetime prevalence rates of over 10% (Chapman, 1997; Robins et al., 1984).

The *DSM–IV–TR* distinguishes the following five main categories or subtypes of specific phobia: (1) animal type (phobias of spiders, insects, dogs, cats, rodents, snakes, birds, fish, etc.), (2) natural environment type (phobias of heights, water, storms, etc.), (3) situational type (phobias of enclosed spaces, driving, flying, elevators, bridges, etc.), (4) blood-injury-injection type (phobias of getting an injection, seeing blood, watching surgery, etc.), and (5) other types (choking, vomiting, contracting an illness, etc.). Statistical analyses, however, applied on epidemiological data suggest that a distinction between three groups of phobias (i.e., situational type, animal type, and mutilation type) would be more appropriate (Fredrikson, Annas, Fischer, & Wik, 1996).

The literature on anxiety and phobias suggests that the problem of clinically appropriate anxiety can best

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be understood by the application of the behavioral paradigm, which includes the principles of *classical conditioning* and *operant conditioning* (Craske & Rowe, 1997; Davey, 1997). For example, when an individual is bitten by a ferocious dog, that person will respond with fear the next time he or she encounters the dog. That is, the individual has been taught, or conditioned, to associate the dog (the *conditioned stimulus*, CS) with being bitten (the *unconditioned stimulus*, UCS) and will respond to dogs with fear. This phenomenon is known as *classical conditioning*. The person's response has become a learned (i.e., conditioned) response (CR) to a danger signal, which for that individual has predictive value in a potentially harmful situation.

The dynamic of certain types of phobias displays many similarities with that of posttraumatic stress disorder (PTSD). Many phobias develop after a distressing event, such as a dog bite, a terrible motor vehicle accident, or an extremely painful injection as a child (Menzies & Clarke, 1995). For example, a study on dental phobia by de Jongh and his colleagues (De Jongh, Aartman, & Brand, 2003) found that 87% of these highly anxious individuals indicated that they had experienced a horrific dental event that could explain the onset of their dental phobia. Typical examples of traumatically induced phobias include driving phobias, which are generally acquired through a severe automobile accident (Kuch, 1997). The same holds true for choking phobias, which usually develop following an episode of choking on food (De Jongh & Ten Broeke, 1998). In addition, with regard to agoraphobia, there is evidence to suggest that clients' first panic attack can be considered as a traumatic incident comparable to that seen in PTSD (McNally & Lukach, 1992).

The chief difference between specific phobias and PTSD is that the latter involves more compelling trauma at the onset and more generalized distress. Although bringing up the memory of the past event may automatically evoke an emotional response, in general (and by definition) phobic patients do not experience recurrent upsetting memories and sleep disturbances. What PTSD and specific phobia do have in common is that both involve fears of specific cues. In many cases, previously stored memories of conditioning events, such as distressing medical treatments, car accidents, or dog bites can easily be activated as a result of a particular present stimulus or situation. In such moments, the person reexperiences his "nightmare," which results in a level of helplessness and fear comparable to that experienced during the actual event. For example, studies on dental anxiety have shown that almost half of the dentally high anxious individuals endorse trauma-related sequelae (e.g., intrusive memories, sleep disturbances, and avoidance of reminders of past dental events) typically observed in individuals who have PTSD (De Jongh et al., 2003; De Jongh, Fransen, Oosterink-Wubbe, & Aartman, 2006; De Jongh, van der Burg, Overmeir, Aartman, & van Zuuren, 2002).

Based on the behavioral conceptualization of fear acquisition, a basic assumption underlying the notion of successful treatment is that a fear response gradually extinguishes when the CS (e.g., spider, injection needle) is repeatedly presented but not followed by the UCS/unconditioned response (UCR) (the original associated painful or otherwise aversive event). Behavioral treatment approaches to specific phobia employ interventions like flooding, systematic desensitization, imaginal exposure, and real-life exposure. Research on specific phobias has shown comparable effectiveness for systematic desensitization and flooding in imagery, while in vivo exposure (i.e., graded and prolonged exposure to the CS) has been found to be more effective than imaginary procedures (Emmelkamp, Bouman, & Scholing, 1989; Öst, 1997).

Although the positive results of outcome studies using (cognitive) behavioral treatment procedures for specific phobias has left the impression that any specific phobia can be treated successfully within a few sessions, it would seem that certain phobic conditions are less suitable for a short-term in vivo exposure approach (De Jongh, Ten Broeke, & Renssen, 1999). This is clearly demonstrated by the results of studies on dental phobia. For example, the results of a study among 332 extremely anxious persons who applied for exposure-based treatment at a Dutch dental fear clinic showed that 15% of them did not start treatment, 12% stopped visiting before treatment was completed, while 36% started to avoid appointments with a dentist after the dental work was done (Van Der Zijpp, Ter Horst, De Jongh, & Makkes, 1996). These findings suggested that the empirical evidence supporting the application of in vivo exposure for a specific phobia cannot simply be generalized to the whole range of phobias, particularly those that developed after a powerful conditioning event (e.g., a horrific medical procedure or otherwise terrifying event). This is illustrated by the following case report.

CASE EXAMPLE: JOHN, PART 1

John is a 40-year-old man who developed a phobia of medical situations after a horrifying event during his recovery from a heart operation 20 years earlier. After a new heart valve was implanted, blood leaked into his chest.

As his condition worsened, medical emergency personnel were forced to intervene rapidly by opening his chest. This happened while he was still in his hospital bed. He remembered that they used a pair of scissors to cut loose the stitches in his chest and a large flow of blood gushed from the wound. Although he survived the operation that followed the incident, he later learned that the heart valve had a technical defect. Meanwhile, now 20 years later, many of the people who received the same type of heart valve have died, while others have had their valve removed and replaced by another one. John is fully aware that he should undergo the same operation, but an extreme fear prevents him from doing so. A cardiologist refers him to a psychologist in order to create a psychological opening for the life-threatening situation.

Clearly, this example of an extreme fear of medical situations differs from situations in which the client can easily be exposed to an object, insect, or animal. It is far more difficult to imagine how, in the above case, the phobic condition could be treated using traditional in vivo exposure and how the client should be prepared for such a confrontation. In other words, what type of conditioned stimuli should the client be exposed to? A combination of hospitals, pairs of scissors, blood, or operations? Another question refers to the issue of preventing the client from dropping out of psychological treatment before it is successfully concluded, perhaps due to a lack of motivation or fear-driven avoidance.

Given that PTSD and specific phobias share a number of important features, and that a wide array of controlled studies support the effectiveness of EMDR (Shapiro, 2001) with treatment for unprocessed events and related conditions, EMDR has also been claimed to be an effective treatment for specific phobias (Shapiro, 1995). This article focuses on EMDR as a treatment for specific fears and phobias. Firstly, the practical application and conceptualization of the treatment of phobias with EMDR is presented and compared with an exposure-based treatment approach. In addition, specific attention is given to the assessment and selection of appropriate memories for processing.

EMDR's Conceptualization of Phobia Treatment

According to Shapiro, distressing events sometimes cause an imbalance of the human information-processing system and remain unprocessed because the immediate biochemical responses to the incident have left it isolated in neurobiological stasis (Shapiro, 2001, p. 338). She asserts that EMDR contains specific elements that stimulate the resolution of negative learning experiences. From an information-processing perspective, Shapiro's adaptive information processing (AIP) model posits that it is the combination of attention to a distracting stimulus and to a mental representation of a meaningful past experience and their associated states of mind that fosters the creation of new memory associations and the integration of previously isolated elements within the neural network maintaining the present pattern of dysfunction (Shapiro, 1995). To this end, the application of EMDR as a treatment of specific phobias can be conceptualized as the selection and the subsequent processing of a series of strategically important memories of earlier negative learning experiences concerning specific objects or situations.

Research has shown that EMDR can be an effective treatment for specific phobias when the EMDR phobia protocol is applied (see De Jongh et al., 1999 for a review; Shapiro, 2001; see Table 1). The types of phobias that have been reported as being successfully treated by using EMDR with specific phobias include phobias of the situational type (Marquis, 1991), animal type (i.e., snakes, moths, spiders, and mice; Muris & De Jongh, 1996; Muris & Merckelbach, 1995; Ten Broeke & De Jongh, 1993; Young, 1994), blood-injury-injection type (injections, dental treatment; De Jongh & Ten Broeke, 1993, 1994, 1996; Kleinknecht, 1993; Lohr, Tolin, & Kleinknecht, 1995), and other type (i.e., vomiting and choking; De Jongh & Ten Broeke, 1994, 1998).

Besides uncontrolled case studies, controlled case reports on claustrophobia (Lohr, Tolin, & Kleinknecht, 1996) and dental phobia (De Jongh, Van den Oord, & Ten Broeke, 2002) also demonstrated positive effects on both fear and avoidance behavior. However, randomized controlled outcome research investigating EMDR treatment of phobias remains scarce and is limited to the treatment of spider phobia (Muris & Merckelbach, 1997; Muris, Merckelbach, van Haaften, & Mayer, 1997). The results suggest that EMDR is less effective than an in vivo exposure approach in the treatment of spider phobia with children (Muris, Merckelbach, Holdrinet, & Sijsenaar, 1998).

TABLE 1. Procedural Steps of Shapiro's Phobia Protocol

1. Preparation
2. Selection and processing of target memories
3. Installation of positive cognition (PC) on a representative image of a possible future situation
4. Test: running a mental videotape
5. Preparation for future confrontations
6. Closure and homework

It has been stated that EMDR has several advantages over an in vivo exposure approach (De Jongh et al., 1999). One advantage involves client comfort, because the alternative, prolonged real-life exposure to anxiety-provoking stimuli is not always easy to achieve. Clients may not always be ready or motivated enough to endure exposure therapy and drop out before treatment can be successfully concluded. Another possible advantage of EMDR relates to the cost of treatment. For example, with flight phobia, EMDR is more cost effective than in vivo exposure treatment, in which clients have to take many costly flights or visit a specialized flight-simulation center. Furthermore, there seems to be a strong advantage for using EMDR in phobias where (1) the critical elicitors cannot be reproduced or simulated in real life (e.g., certain sexual, illness, or death situations); (2) the phobic stimuli are hard to obtain; (3) the client resists exposure to the stimuli (e.g., large dogs, rats, snakes, bees, or wasps); or (4) the phobic condition has a clear, identifiable origin.

CASE EXAMPLE: JOHN, PART 2

In John's case, only one session of EMDR was needed to alleviate his fears related to the horrific memory of his chest being opened up in the hospital bed. After the treatment, he was able to make an appointment with a cardiologist for a consult about his medical situation. However, medical examination showed that the combination of his weak physical health and the complex medical condition, which had developed after 20 years of living with a bad functioning heart valve, would make a new operation too much of a dangerous endeavor. Despite the bad news, John felt relieved as he now had objective, medical information about his condition. He was able to decide whether he would undergo a new operation or not, based on facts rather than fear.

Differences Between a Cognitive Behavioral and an EMDR Treatment Approach

How different is EMDR compared to exposure-based treatment, both clinically and conceptually? The chief difference in terms of practical application between both treatment approaches for the treatment of specific phobias seems to be that during behavioral treatment clients are requested to focus their attention on the fear-evoking stimulus (CS) to investigate its predictive value, whereas in EMDR, the focus is the memory of the traumatic incident that caused or clearly worsened the fear response (representation of the UCS/UCR). Furthermore, in the context of most exposure-based behavioral treatments, it is generally considered most effective for clients to remain focused on the CS until their levels have fully been decreased. In contrast, during EMDR, no explicit attempts are made to maintain attention on either (a representation of the) CS or (a representation of the) UCS. Contrary to seeking heightened arousal, clients are instructed to "just notice" the experience and to follow their mental associations and are encouraged to distance themselves. Experimental research provides empirical support for the contention that emotional processing is equally, or even more, effective when a detached rather than a more focused form of exposure is used (Lee, Taylor, & Drummond, 2006).

Conceptually, these findings do not fit well within a habituation model, but do fit within the theoretical framework of the orienting response model (Barrowcliff, Gray, MacCulloch, Freeman, & MacCulloch, 2003; MacCulloch & Feldman, 1996;). According to this paradigm, a distracting stimulus, such as the eye movements in EMDR, elicits an orienting reaction, but when no immediate threat is identified in the therapeutic situation, the orienting response acts as a so-called reassurance reflex and induces a relaxation response. The authors assert that during EMDR, engagement of the orienting response signals safety and elicits a de-arousal effect, which is subsequently paired with the memory of the traumatic event (MacCulloch & Feldman, 1996). It is suggested that this process can be conceptualized as counterconditioning where distressing stimulus aspects of the traumatic memory are paired with a neutral response. Support for this notion was obtained in a study by Barrowcliff et al. (2003), which showed that electrodermal arousal to autobiographical memory decreased following an eye movement task, but not in an eye stationary condition.

Assessment and Selection of Appropriate Memories

General Aspects of Assessment

Clearly, treatment of a phobic condition cannot be started if the therapist is still unaware of both the factors that cause and maintain the anxiety response as well as the consequences and characteristics of these complaints. Therefore, one of the first tasks of the therapist is to collect the necessary information, which is usually done by means of an open clinical interview. One of the aims of such an interview is to gain insight into the interplay of factors in several possible

problem areas. Since many clients have several interrelated problems, an important component of the assessment is to establish the relative importance of these problems and how they are related to the diagnosis of specific phobia (Anthony & Swinson, 2002). For example, it may be that a client's claustrophobia is not very specific and occurs in a variety of situations. In this case, it may be wise to consider (or to rule out) the possibility of the diagnosis panic disorder, as this condition generally needs more elaborate treatment. Instead of utilizing unstructured clinical interviews for the assessment of necessary information about the dynamic of the anxiety problem, it is most efficient to use a standardized clinical interview such as the Anxiety Disorder Interview Scale (ADIS-R), which is primarily aimed at the diagnosis of anxiety disorders (DiNardo et al., 1985). In addition, to further enhance the reliability of the diagnostic process, it is often desirable to use valid and standardized diagnostic inventories, which can measure the severity of the anxiety complaints, detect other possible problem areas, and evaluate the course of treatment. Examples of useful self-report questionnaires for specific phobias are the Fear Survey Schedule (FSS, Wolpe & Lang, 1964), the Fear Questionnaire (FQ; Marks & Mathews, 1979), and the Symptom Check List (SCL-90-R; Derogatis, 1977).

The aim of the first of the eight phases of EMDR is to assess clients' readiness for treatment and to formulate the optimal clinical goals. Regarding the treatment of specific phobias, there is a wide variety of possible treatment goals, ranging from simple to more global or complex. For example, a limited goal for a needle-phobic individual might be "pricking a finger," while a more global goal might be "undergoing injections or blood sample taken, while remaining confident and relaxed." Generally speaking, treatment is aimed at reducing anxiety and avoidance behavior to an acceptable level and learning how to cope. Goals can be formulated concerning both what the therapist wants the client to achieve during a single therapy session and what exactly the client should manage to do in natural situations when confronted with the phobic object. Usually, an intermediate objective is selected. Sometimes clients set themselves a target that is not within their reach, unnecessarily difficult, or simply hazardous, such as being able to drive at high speed on a motorway. Likewise, a person with a dog phobia might set the target of acquiring the ability to spontaneously pet all sorts of dogs. A more appropriate aim of treatment, however, could be the ability to walk outside without having to change direction because of the arrival of a dog. The therapist should be clear about the objectives for each session but also be prepared to adapt to unexpected happenings. Thus, in the treatment of specific phobias, goals are set in consultation with the client and will depend both on the client's level of commitment and the clinical judgment of the therapist about what seems realistic or feasible.

One issue that merits particular attention during the assessment phase is the gathering of information on the current circumstances under which the symptoms become manifest. To this end, information should be collected about external and concrete (discriminative) anxiety-provoking cues (i.e., the CS). Other types of anxiety producing stimuli are critical internal cues, such as particular bodily sensations (e.g., palpitations). Examples of questions to elicit information about specific anxiety-inducing stimuli are as follows:

- "What exactly (object or situation) are you afraid of?"
- "Which aspect of this object or situation triggers your fear most?"

Based in the work of Beck (1976), the cognitive hypothesis proposes that anxiety occurs as a result of the appraisals of the person's situation as threatening. In this conceptualization, anxiety in a given situation is inappropriately elevated because the person overestimates the probability of danger and/or awfulness of that danger were it to happen, or underestimates his or her ability to cope if the threat were to happen. Since such beliefs are all closely related to levels of emotional intensity and are important in the maintenance of the phobic condition, it is important to identify a client's faulty assumptions and predictions. The most commonly used method to elicit this type of information is to ask the client a series of open-ended questions that can be framed in the context of hypothetical situations (e.g., "What is the worst thing that might happen if you were to drive a car?") or actual episodes of anxiety (e.g., "During your recent appointment with the dentist, what did you think might happen?"). In other words, rather than asking for more general thoughts (e.g., "When you are feeling anxious in the elevator, what are your thoughts?"), it is best to ask the client for specific fearful predictions, assumptions, and interpretations (e.g., "When you are feeling anxious in the elevator, what are you afraid might happen?") as the answers may contain specific information ("I will faint," "I will die," "I will suffocate," etc.), thereby referring to predisposing events and early life experiences that might have set the groundwork for the acquisition of the phobia.

Identification of Appropriate Memories

Given the importance of the role of unresolved past aversive experiences in the AIP model, during the assessment phase the therapist tries to identify particularly unpleasant experiences in order to be able to create a time line containing the critical incidents that have the strongest relation to the client's current symptoms—that is, critical incidents after which the symptoms clearly have begun and/or clearly have worsened. To this end, Shapiro (1995) proposes a model for the identification and processing of meaningful past events, which uses a three-pronged approach of past, present, and future (see Table 2). According to this model, a number of memories should be addressed and processed in a certain order, starting with the first event. Sometimes, additional memories need to be explored and developed. For example, Shapiro (2001) argues that it is important that therapists are also sensitive to memories of experiences prior to the development of the phobia, the so-called ancillary events that may have made the client sensitive to the development of the phobia. Another issue is the possible existence of memories that may have led to collateral damage, by having an effect on the individuals' self-image and self-worth (e.g., children being ridiculed by peers because of their extreme fear response when confronted with a small dog). Such types of damage also need to be assessed and addressed appropriately. By mapping these memories along the same time line, the therapist is able to develop a full case conceptualization with testable hypotheses referring to memories that require processing in order to reach symptom reduction. Next, the set of memories that has been identified is used as a focus for a series of EMDR (basic protocol) procedures that are applied separately, each involving a distinct target memory.

The most important memories are those that relate to the onset of the phobia. An example of a question to identify such a memory may be: "Which experience has caused, or clearly worsened, your fear?" However, the process of identifying core memories for processing is not always without difficulties, as clients may not have access to all appropriate memories, particularly the first (i.e., conditioning) event. In the following paragraph, a number of examples are proposed that are helpful for identifying this type of critical memories.

Search Strategies for the Identification of Appropriate Memories

It appears particularly helpful if the therapist starts with conceptualizing clients' fear-related problems in terms of the following if-then relationship:

IF …….[stimulus], THEN…….. [catastrophe]

Here, *IF* refers to the stimulus that used to evoke emotional disturbance (translated in cognitive behavioral terms: the CS), while *THEN* refers to the threat appraisal, the catastrophe the client expects to happen (which identifies the mental representation of the feared consequence, or in cognitive behavioral terms: the UCS/UCR). The association between the phobic stimulus (IF) and client's prediction that as a consequence a negative dangerous event is likely to occur (THEN) makes his anxious belief operational. For example, an individual with a phobia of dogs may believe that if he or she gets too close to a dog (IF), it will attack (THEN); a person with a lightening phobia may believe that he or she will be struck by the lightening (IF) as soon as a thunderstorm starts (THEN); and an person with an injection phobia may

TABLE 2. Order of Steps in Shapiro's Three-Pronged Approach of Memory Selection Proposed for the Treatment of Specific Phobias (Including Examples of Questions That May Help to Identify These Memories)

1. The first event. The conditioning event, which caused or clearly worsened the fear, or any other predisposing event that contributed to the onset of the phobia.
   - "Which experience has caused, or clearly worsened, your fear?"
2. The worst event. The most frightening or disturbing experiences in the past.
   - *"What is the most extreme or most frightening experience related to this fear?"*
3. The most recent incident.
   - *"What is the most recent time that you experienced the fear?"*
4. Present triggers. Any associated present stimuli or specific triggers that elicit disturbance in situations in the present, such as certain physical sensations or other manifestations of fear (e.g., dizziness).
   - *"What kinds of stimuli in the present still elicit this type of fear?"*
5. Future template. A mental representation of a future and anticipated situation with a positive outcome.
   - *"Please bring up a mental image of a desired future situation in which you act adequately? This is a picture of a situation that you, until now, avoided and that you are only able to enter or undergo with fear."*

believe that he or she will faint or that the needle will break off (THEN) in his or her arm if a blood sample is taken (IF).

Using the conceptualization of an if-then relationship, there are two different search strategies that can be used to identify the memories of events that may have laid the groundwork for the phobia. One search strategy focuses on the identification of core memories pertaining to the stimulus (IF) component, and the other pertaining to that of the feared consequence (THEN). For reasons of clarity, we will refer to this distinction in terms of IF-memories and THEN-memories.

Typical questions referring to IF-memories are: "When did your fear begin?" or "What was the first time this fear was experienced?" Other ways of enquiring may be: "Which incident made that you became afraid of . . ." or "When did you experience this fear for the first time?" Although the answers to these questions provide the therapist information about possible events that contain memories for processing, the therapist should not forget to check whether it is indeed the *first* experience. If not, the therapist should identify the incident when the fear was felt for the first time, as well as any other predisposing events that may have contributed to the fear, by asking: "Is this indeed the first disturbing memory related to this fear?" or "Are you sure you weren't already fearful prior to this incident?" It is important that the client understands it is not necessary to know how exactly the fear started but how the client *remembers* it, or better, how it is mentally represented in client's brain.

Typical THEN-memories can be found by identifying the client's catastrophic ideation—that is, what exactly the client expects to happen when confronted with the phobic stimulus. From an AIP perspective, this catastrophic belief can be conceptualized as dysfunctional information from the earlier disturbing conditioning event, which got stuck in the neural memory network. Therefore, it is important to question the client about where this information might have come from—that is, when and how the client has learned that the feared catastrophe (e.g., fainting, choking, severe pain, etc.) might happen.

In this respect, it should be noted that it is a widespread misconception that the therapist should limit the choice of selecting EMDR targets from memories of clear conditioning events in the sense of the person's own painful experiences (e.g., the client once fainted in relation to an injection). As people can acquire their phobias through several so-called pathways of fear (Rachman, 1977), memories of vicarious learning experiences (e.g., the client observed mother's extremely fearful reactions to needles in a hospital) or negative information (e.g., a client read in a newspaper that someone died in the dental chair following a anesthetic injection) may equally well have led to the development of meaningful memory representations that need to be targeted in order to fully treat the phobic condition.

CASE EXAMPLE: PETER

Peter had a flying phobia and had been unable to fly for several years. He had experienced panic-like attacks during several flights. He found looking down through the airplane window to be particularly anxiety provoking. In order to identify the origin of this phobia, the therapist asked "When did your fear begin; what do you remember?" Because this question referring to an IF-memory and a question with the same aim ("When did you feel this anxiety response for the first time?") did not reveal an appropriate memory for processing, the therapist used a question referring to the feared consequence of an encounter with the anxiety-provoking stimulus, a THEN-memory**.** The therapist asked, "What do you fear that will happen if you look down below?" The client responded, "It sounds stupid, but I think I will fall." Because this answer could lead directly to another possible memory, the therapist asked, "When did you experience this fear of falling for the first time?" In response to the last question, the client indicated that prior to his fear of flying, he already had a fear of heights. He described a childhood memory of visiting a lighthouse with his parents. At the top, his father took him on his back and performed all kinds of dangerous and anxiety-eliciting acts. His mother was panicking. This image was still disturbing (NC = "I am in danger"). Targeting the fear of heights, by installing a positive cognition (PC = "I am safe now"), an appropriate future template, and the use of an imaginal future video template, resulted in strong reduction of his anticipatory anxiety. Two weeks after the session, the client was able to make a flight in an airplane, during which he felt remarkably calm.

It is clear from clinical practice that solely targeting one or more traumatic events sometimes transforms the disturbing memory into one that is no longer emotionally distressing. For instance, in describing his treatment of a snake phobia, Young (1994) provided the following information about the procedure he used: "She was asked to picture herself with

a snake with the associated feelings of terror and helplessness" (Young, 1994, p. 130). The fact that the treatment was successful suggests that reprocessing a single aspect of the pathology, such as the present emotions or one or more past events may result in a generalizing effect to a larger part of the memory network. However, it is our experience that such a response is rather exceptional. Yet, sometimes it proves useful—when other strategies to identify memories have failed—to try to directly gain access to the core of the appropriate neural network. The next case example illustrates how such a memory can be identified and how reprocessing the mental representation of a client's fear can lead to a situation where the therapeutic goals are met.

CASE EXAMPLE: DONALD

Donald had a water phobia (i.e., shark phobia). Since childhood, he avoided swimming or sailing because of an extreme fear of sharks, even in water such as lakes that have no connection with the sea. He remembered that when he was young, he even felt in danger when in a bathtub. During the EMDR assessment it appeared difficult to find a memory for treatment, as Donald indicated that he could not remember the onset of his extreme and irrational fear. There were recollections of earlier confrontations with water, but bringing up these memories did not cue any significant emotional response. Questions pertaining to IF-memories or THEN-memories did not lead to a meaningful memory that could be used for EMDR. For example, he remembered that he had seen the movie *Jaws*, when he was about 7 years old, but he had no present disturbing memory of it. In answer to the question "Which memory or mental picture represents your fear of sharks best?" Donald answered that he had an image—probably a trailer of a movie he must have seen—of a person swimming in the ocean. There is deep, dark water below him, but there is no actual shark in this picture, although it feels as if there certainly is one, somewhere deep down. This disturbing picture still made him feel powerless (NC). The SUD level was 8.

Remarkably, during processing, the emotion that came up was a sense of loneliness, rather than fear. After about 30 min, suddenly a disturbing memory arose of when Donald was about 5 years old. He was watching his younger brother playing on the other side of a deep ditch, when the brother suddenly slid down the bank and vanished completely underwater. When Donald realized what had happened, he started to scream. A group of horsemen had just passed by. One of them responded, dismounted from his horse, and began searching in the depths of the water. He finally brought Donald's brother to the surface, after which he was resuscitated and revived. Other people arrived and also took care of him. In the session, Donald cries and feels helpless and alone again as he remembers himself as disconnected from his brother. At the end of this first session, the SUD is 2.

At the beginning of the next session Donald wears a T-shirt that he bought a few days before, depicting the poster of the movie *Jaws* with a big shark. He reports that a few days previously, he walked into the ocean and went into the water up to his waist. EMDR processing continues with the same target image. It is further desensitized until the incident becomes neutral (SUD = 0) and the PC = "I can handle it" is installed. After installing a future template and playing a mental videotape of himself swimming in the sea, his mental representation has changed into a picture of quiet and safe water, of which he is no longer a part anymore. A week after the second session, the therapist gets a telephone call. It is Donald: "Guess who has been swimming last week in the North Sea . . . ?"

Conclusions

With regard to the treatment of specific phobias, EMDR and traditional behavior therapy have many differences, both practically and conceptually. Contrary to traditional behavior therapy, which proposes a strategy of gradual exposures to the feared stimuli (CS-exposure) to extinguish the fear response by way of learning new predictive associations between CS and (representations of the) UCS/UCR, the primary goal in EMDR is the processing of disturbing memories of previous negative learning experiences. Despite these differences, research on the application of EMDR with specific phobias demonstrates that EMDR can produce significant improvements within a limited number of sessions. Is has been recommended that to fully profit from the effects that are achievable with EMDR, the original and all other appropriate related memories should be identified and addressed (Shapiro, 2001). In this article, several strategies aimed at identifying these memories were described.

Clearly, it is the challenge for future researchers to demonstrate that the clinical effects of EMDR with specific phobias exceeds or equals the application of an in vivo exposure procedure per se. On the other hand, there are indications that a combination of both treatment approaches may have additional value. For instance, it is interesting to note that there is evidence from experimental research to suggest that a combination of exposure and distraction (i.e., so-called distracted exposure) is more

effective than exposure alone (Johnstone & Page, 2004; Oliver & Page, 2003). In one of these studies, 27 individuals with phobias underwent three 10-min sessions of *in vivo* exposure followed by one 10-min exposure session at a 4-week follow-up (Johnstone & Page, 2004). Two groups of people with a phobia of spiders underwent either a stimulus-appropriate focused conversation or a stimulus-inappropriate distracting conversation with the experimenter. It was found that those who underwent distracted exposure showed greater reductions in subjective fear within and between sessions, reported lower levels of anxiety, and demonstrated a better performance on a behavioral task than those who received focused exposure. Likewise, Wells and Papageorgiou (1998) found that social phobic patients who were treated with in vivo exposure plus an external attention focus profited more from this treatment than those who received exposure alone.

An interesting finding of the Johnstone and Page (2004) study was that only those with low initial anxiety experienced reductions while undergoing focused exposure. This is in line with Penfold and Page's (1999) findings, which showed that participants with high stimulus-bound anxiety benefited most from the distraction treatment. Thus, it would seem that level of anxiety interacts with distraction and that distraction facilitates anxiety reduction when participants have a relatively high level of anxiety, while focusing facilitates anxiety reduction when participants have a relatively low level of anxiety. This notion is in accord with clinical experience, suggesting that with phobias with a trauma-related aetiology and/or a high level of anxiety, exposure to the CS may be less effective as it will not disconfirm the expected occurrence of the unconditioned stimulus (UCS) but will just activate a representation of the UCS/UCR. Accordingly, it would be enlightening to experimentally investigate whether clients with trauma-based specific phobias and/or high initial levels of anxiety would respond most favorably to an UCS reevaluation intervention such as imagery exposure (see Davey, 1997) or EMDR. Indeed, it has been found that the SUD scores of a subgroup of clients with a trauma-related phobia showed significantly greater reduction after EMDR than the group as a whole (Sanderson & Carpenter, 1992). The other prediction that would be interesting to investigate is whether nonphobic fearful clients with a nontraumatic background, or those in later stages of treatment, after some reduction in anxiety has been achieved, would profit more from the application of gradual in vivo exposure or behavioral experiments, rather than EMDR. In addition, it is conceivable that a combination of both treatments may be of significant practical value in that EMDR can play a major role in the first part of the treatment process (processing memories), while cognitive behavioral procedures are helpful in the second part of treatment, where clients learn to expose themselves to the feared stimuli until they have achieved a degree of self-mastery again and feel that they are able to handle a certain level of anticipatory anxiety and fear with confidence.

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