Stop the Use of Eye Movements in Resource Development and Installation, Until Their Additional Value Has Been Proven: A Rejoinder to Leeds and Korn (2012)

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This brief article responds to Leeds and Korn's (2012) commentary on our article (Hornsveld et al., 2011) in which we found that eye movements (EMs) during recall of positive and resourceful autobiographic memories (such as those used in resource development and installation [RDI]) led to *decreases* of (a) vividness, (b) pleasantness, and (c) experienced strength of the intended quality or resource. Hence, we found an opposite effect than what was intended and critically discussed this in our article. In their comments, Leeds and Korn stress their positive clinical experience with RDI and emphasize the limitations of our study. Here we argue that our results, despite their limitations, are fully in line with mounting evidence supporting a working memory account for EMs. Moreover, opposite effects for EMs in the RDI and the safe place procedure accord with several other clinical observations. Given the absence of any confirmatory results, we again advocate, and now even more strongly, to stop the use of EMs in the RDI and safe place procedures until their additional value has been proven.

Keywords: RDI; safe place; resource development and installation; working memory; clinical impressions

Both the safe place protocol (Shapiro, 2001) and the related resource development and installation (RDI; Korn & Leeds, 2002; Leeds, 1995, 2009) use horizontal eye movements (EMs; or another form of bilateral stimulation) as an essential part of how these procedures are applied. The assumption is that EMs stimulate the information processing process (Shapiro, 2001) and are therefore helpful to strengthen the positive memory material. The safe place and RDI are integral parts of eye movement desensitization and reprocessing (EMDR) trainings; both procedures are widely practiced and highly valued among EMDR therapists.

We are grateful that the founders of RDI, Andrew Leeds and Deborah Korn, have taken our research seriously and responded with a comprehensive commentary. Their attempt to pinpoint the limitations of our study highlights the question of the role of EMs during RDI and provides us the opportunity to emphasize the seriousness of our doubts and considerations. In their commentary, Leeds and Korn (2012) continue to defend the use of EMs as a beneficial part of RDI. They stress the existence of positive clinical experience and the weaknesses of our study. We believe, however, that the main problem lies not in the weaknesses or limitations of our study but in the striking *absence* of any study demonstrating the additional value of EMs in RDI or the safe place protocol. Whereas EMs in traumatic memories have been subject of a growing body of research and their desensitizing effect is now widely accepted, no prior study has been presented on the role of EMs in RDI or the related procedure for installing a safe place.

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The goal of our study was to examine one of the mechanisms of EMs in RDI posited by Korn and Leeds (2002). They wrote that

> the inclusion of the bilateral stimulation in the protocol appears to lead to spontaneous, rapid increases in affective intensity within an initially selected memory network and to rich, emotionally vivid associations to other functional (positive) memory networks. These increases in intensity of positive emotions and new functional associations bring additional ego-strengthening material into consciousness. (p. 1469)

Our study evaluated whether EMs lead to an increase in positive emotions, and—more specifically—to an increase in experienced strength of the resource quality. Several studies have shown that positive memories and images become *less vivid* and *less emotional* when these are retrieved with concurrent EMs (Barrowcliff, Gray, Freeman, & MacCulloch, 2004; Engelhard, van Uijen, & van den Hout, 2010; van den Hout, Muris, Salemink, & Kindt, 2001). This fading effect is a consistent finding and is fully in accordance with the working memory explanation of the role of EMs within EMDR, which predicts that, as a consequence of competition in working memory, traumatic memories fade and lose their emotional charge. The results of the Hornsveld et al.'s (2011) study are exactly in line with this theory. Fading effects in positive memories are *not* predicted by an "adaptive information processing" account or an "interhemispheric" account for EMs.

In their commentary, Leeds and Korn (2012) acknowledge these fading effects but note that we did not measure "increased sensory detail" and "increased accessibility" as dependent variables. This is true, we did not measure that, but we *did* measure "vividness" and "experienced strength of the resource quality." Experienced strength of the resource quality was measured by the question "to what extend do you feel you possess the quality (i.e., pride, perseverance, or self-confidence) right now?" We believe this is the most important and clinically relevant dependent variable in RDI. If increased sensory detail and increased accessibility are specifically induced by the use of EMs, we should have found a positive (enhancing) effect on vividness and experienced strength of the resource quality; instead, we found significant decreases in both these variables.

Leeds and Korn's (2012) critique of our study further concentrates on the fact that it was conducted among undergraduate students and not in a clinical population. They emphasize the potential importance of RDI for disorders of extreme stress, not otherwise specified (DESNOS, or complex posttraumatic stress disorder [PTSD]), and conclude at the end of their commentary that "only a study that randomly assigns *DESNOS patients* to either EM or no-EM conditions, with prebehavioral and postbehavioral measures, can assess the contribution of EMs to RDI" (p. 172). However, it has never been argued before that RDI is a procedure exclusively meant for DESNOS, and there is no compelling reason to assume that the underlying mechanisms of patients differ from those of nonpatients. Findings may be stronger or weaker for clinical samples, but it is unlikely that DESNOS patients would—for example—demonstrate an increase of self-confidence as a response to the use of EMs, whereas our healthy controls would show a decrease.

We acknowledge that external validity of our study would have been stronger if we had included the question "what are you feeling or noticing now?" after each set of EMs. However, the underlying assumption of the RDI procedure is that the application of EMs elicits a positive association chain and we were evaluating the spontaneous effects of EMs. We were not evaluating the effect of questions designed to elicit associations and therefore we did not ask "what are you feeling or noticing now?"

Moreover, the empirical evidence of the claim that EMs facilitate memory reprocessing is extremely scarce. The research cited by Leeds and Korn (2012) consists of two studies of Kuiken and coworkers who found an increased cognitive flexibility—with small effect sizes, complicated designs, and samples with undergraduates (Kuiken, Bears, Miall, & Smith, 2002; Kuiken, Chudleigh, & Racher, 2010). The results are far less convincing than the bulk of evidence published to date favoring the working memory hypothesis.

The burden of proof that EMs contribute to the RDI and the safe place protocol rests on those who suggest so. Until there is evidence for a positive contribution, empirical data compel us to be extremely cautious using EMs as a catalyst for reprocessing positive material. This sounds counterintuitive; we, too, have long thought of bilateral stimulation as a means to accelerate information processing in both negative and positive material. Perhaps we have relied on our personal impressions too long. The facts are, however, different. Let us summarize eight of those facts.

1. The only evidence for EMs during RDI consists of clinical impressions. Again, in their commentary, Leeds and Korn (2012) write, "*RDI, with its EMs, does work. Consistent and widespread clinical observations support our contention that the full RDI protocol produces notable gains in coping skills and well-being for DESNOS patients*" (p. 172). Although we ourselves have shared these clinical impressions, we know

that clinical impressions are often found to be notoriously unreliable. Because of scientific evidence, we seriously question the value of EMs in RDI.

2. The evidence for a working memory explanation for most of the effects seen in response to the application of EMs is now overwhelming. More than 20 studies have been published favoring a working memory explanation, often at the expense of other explanations of EMDR, including the "bilateral stimulation" or interhemispheric account and the orienting response model (Gunter & Bodner, 2008). The evidence includes the following:

    - In terms of reducing vividness and emotionality, the effects of horizontal EM are equal to the effects of vertical EMs (Gunter & Bodner, 2008; Hornsveld et al., 2011).
    - The effects of EMs are comparable to those of other tasks that substantially tax working memory, including counting (Engelhard, van den Hout, & Smeets, 2011; van den Hout, Engelhard, Smeets et al., 2010); drawing complex figures (Gunter & Bodner, 2008); "attentional breathing" (van den Hout et al., 2011); or playing the computer game "Tetris" (Holmes, James, Coode-Bate, & Deeprose, 2009).
    - Tasks that only moderately tax working memory are inferior to employing EMs, for example, slower EMs (Maxfield, Melnyk, & Hayman, 2008) or tones (de Jongh, Ernst, Marques, & Hornsveld, 2012; van den Hout et al., 2010; van den Hout et al., 2012) or music (Hornsveld, Landwehr, Stein, Stomp, Smeets, & van den Hout, 2010).
    - EMs result in fading effects in positive memories (Barrowcliff et al., 2004; Engelhard et al., 2010; Gunter & Bodner, 2008; Hornsveld et al., 2011; van den Hout et al., 2001).
    - EMs diminish the aversiveness of so called "flashforwards" (Engelhard, van den Hout, Janssen, & van der Beek, 2010; Engelhard et al., 2011).
    - Working memory (WM) capacity and effectiveness of EM are negatively correlated (Gunter & Bodner, 2008; van den Hout et al., 2010). Thus, people with low WM capacity (bad at multitasking) tend to profit more from EM. This replicated finding is counterintuitive and is not predicted by the interhemispheric hypothesis or the orientating response hypothesis.

3. For many years, in workshops and conferences, others (e.g., Maxfield, 2004) have been cautioning against using EMs in the safe place exercise and so forth because of working memory effects and because of observed fading effects in EMDR treatments.
4. In March 2011, at an advanced (Level II) EMDR training in the Netherlands, we conducted a brief nonrandomized trial among 80 participants. As part of their training, they were taught the details of the RDI protocol and were requested to practice the full RDI protocol on each other using personal "problematic" situations. We asked them to perform the procedure twice: first with EMs (short, slow sets of six movements) and—during the second exercise—without EMs. It was the full protocol, including the question "what are you feeling or noticing now?" We told them we just wanted to learn their experiences and that we had no expectations regarding the outcome (which was, especially in those days, true). Results were astonishing; 77 participants found the procedure *without* EM superior and only 3 participants found EM to be superior. Contrary to the published study (Hornsveld et al., 2011), subjects were stimulated to make associations, which Leeds and Korn (2012) purported to be essential to RDI; nevertheless, no evidence for a positive effect of EMs was found.
5. Most of the earlier mentioned studies are of Dutch soil (mainly from the research group of van den Hout, Engelhard, and Hornsveld) and the clinical implications have been widely accepted among Dutch therapists. In April 2011, a new guideline on the treatment modalities used in EMDR was presented by the Dutch trainers (Beer et al., 2011). This document recommends to apply EMs (and no auditory tones or tapping) as default in EMDR and not to apply EMs in RDI and safe place exercises until scientific evidence validates the contention that EMs are more effective than just imagining the positive experiences as used in RDI. This is also how RDI has been taught in EMDR trainings since then. A brief inquiry learned that many therapists are positively surprised by the effects of EMs (after years of having used headphones and tones) and by the effects of having aborted the use of eliciting EMs in RDI and the safe place exercise.
6. If we accept that RDI without EMs may be more effective, a series of observations makes the pieces of this intriguing jigsaw puzzle fall into place. For example, we observed that therapists often use forms of bilateral stimulation in RDI, which tax working memory much less than EMs. Similarly, we noticed that Philip Manfield, in one of his videos on dyadic resourcing, changed to gentle tapping on the knees of his patient after his patient noticed that the image was fading with EMs (Manfield, 2010).

Another example stems from the international EMDR discussion list (McNally, January 2012) in

response to our paper (Hornsveld et al., 2011). One therapist wrote,

> I do a lot of resourcing with clients using very very slow sets of EM's, doing 4 saccades, no more, and almost without variation clients experience either a deepening of a specific resourced feeling or simply deep, deep calm and relaxation. I've been doing this for years with many, many clients and am always amazed at how well it works.

These examples demonstrate how the fading effects of EMs in RDI are circumvented either by alternative bilateral stimulation or slowing down the speed and amount of EMs to gain a maximum effect.

From a clinical point of view, this is of course legitimate, and it is conceivable that a small distracting task (i.e., low taxing on working memory resources) helps to concentrate or to relax, but this is way beyond the original rational for the use of EMs in the safe place exercise and the RDI procedure. It again demonstrates the need for experimental research, preferably in patients. Once again, those who proclaim that eliciting EMs is an essential element in RDI are the ones that should present the necessary evidence. Simply stating that this research is way overdue—as Leeds and Korn (2012) do in their response—is as true as it is irrelevant to this discussion.

7. Patients are often positive about their therapy and their therapists. This satisfaction makes us believe that our therapies—or parts of it—are indeed helpful. An example of how this can be misleading is the discussion about the potential harming effect of (critical incident stress) *debriefing* (CISD). In the use of debriefing, victims of serious incidents are allowed, even encouraged to talk about the incident and their emotions. The contention is that the people affected return to their daily routine more quickly and do so with less likelihood of experiencing PTSD. Despite the fact that many patients are satisfied, or say that the debriefing has tremendously helped them, several studies have shown that CISD has little effect, and, in fact, may be harmful in that it has a worsening effect on PTSD symptoms (Bisson, Jenkins, Alexander, & Bannister, 1997; Mayou, Ehlers, & Hobbs, 2000; Sijbrandij, Olff, Reitsma, Carlier, & Gersons, 2006).

   Another example of a misguided belief in effectiveness—closer to home—is the widespread use of auditory bilateral stimulation, without any empirical evidence. Patients are satisfied; their therapists, too; and in recent years in almost 50% of EMDR sessions, EMs appeared to have been replaced by other bilateral stimulation like tones or tapping (Van den Hout et al., 2011). Two recent studies carried out using a clinical population, however, have shown that tones are inferior to EMs (de Jongh et al., 2012; Van den Hout et al., 2012). Nevertheless, the therapists reported that they believed the auditory task to be more effective than eliciting EMs. Interestingly, most patients also indicated they experienced tones as more helpful because EMs were "too distracting" and tones helped them "to concentrate on the memory and the painful feelings" (de Jongh et al., 2012; van den Hout et al., 2012). These examples clearly illustrate that clinical impressions and patients' preferences are not enough to continue a therapeutic action when there are serious empirical and theoretical doubts regarding its effectiveness.

8. Finally, it is not based on our own data alone that we question the effectiveness of eliciting EMs in RDI. If that were the case, we would certainly be overestimating the relevance of our findings. It is because of the absence of data that contradicts our findings, and because our data fit so well with all the published new material on the importance of the working memory account for the role of EMs in both positive and negative memory material.

   We take all this evidence seriously. Consequently, pending more sophisticated and clinical trials on the effectiveness of RDI, we suggest that clinicians conduct their own experiments and investigate the effects of the safe place exercise and RDI, without EMs or to use very, very slow EMs among their own patients, so that the (potentially fading) effects of simultaneously executing working memory tasks are minimalized.

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