

## Sacred cows and red herrings: research and the future of EMDR therapy

*As science deepens understanding of the world, it offers us the chance to change the way we do things for the better. This holds true for all areas of inquiry, including EMDR therapy. Omar Sattaur asked Ad de Jongh about the implications of the latest Dutch research findings.*



We were forewarned by the moderator, Maeve Crowley, and so were prepared for controversy. But Ad De Jongh's and Suzy Matthijssen's presentation still sounded iconoclastic; sacred cows were being lined up for slaughter. Having dispensed in their keynote presentation with the question of stabilisation or, as De Jongh

thinking it must be something to do with the two hemispheres of the brain. That was the only explanation she had in 1987. So she chose to go with bilaterality. Perhaps if she had talked to the psychologist Alan Baddeley, who developed his working memory theory 13 years earlier, we wouldn't have been emphasising bilateral

to the work of the British psychologist and researcher, Alan Baddeley from the University of Leeds. If you have not seen the YouTube video of a presentation by Baddeley explaining his discovery, it is well worth watching (specifically minute 17.00-18.00). He recounts a frightening experience while driving on a highway in California and trying to listen to something on the radio that interested him – he noticed his car weaving between the lanes just in time to avoid a potentially serious accident. When he returned to the UK the experience sparked a research question and he was later able to demonstrate that: "Holding a visual image is inconsistent with a motor task". De Jongh sees his realisation and later finding as the cornerstone of the working memory model for explaining the mechanism by which memories are degraded in the desensitisation phase of EMDR. He went so far as to muse whether Baddeley, and not Shapiro, is the true discoverer of EMDR.

A paper by Van den Hout and Engelhard in 2012 explains the working memory model very clearly.

*"Stored information that is currently active and is used to perform cognitive operations is located in working memory (WM). Long-term memory, on*



*Alan Baddeley pioneered research on the structure of memory and is best known for his multiple components model of working memory*

prefers to call it (more accurately), emotional regulation, the first to fall was Bilateral Stimulation.

De Jongh sees the emphasis on bilaterality as an accident of history and a red herring. "Francine Shapiro had a very nice treatment called EMD. Everyone was very enthusiastic about it. But when she wanted to write up her work, she had to come up with an explanation. She talked with neurobiologists and she ended up

stimulation today." Twelve years ago, Gunter and Bodner's study on the impact of eye movements on emotionality and vividness of disturbing memories showed that vertical eye movements were just as effective as horizontal eye movements (2008). Despite this, many of us still hold fast to bilateral stimulation and why we do this, in itself, might be a worthy candidate for psychological research.

The presenters drew attention

the other hand, contains memories and knowledge that is not currently active. The capacity of this long-term memory is extremely large, but the capacity of WM is limited (Baddeley, 1998). When we simultaneously do two tasks that each tax WM, the tasks compete for this limited capacity. Recalling an emotional memory and making eye movements both require WM capacity, so moving your eyes from side to side while recalling a memory leaves less capacity for the memory. As a consequence, Andrade et al. (1997) explain, the memory should become less vivid and less emotional. This is not unique to traumatic memories; it should also apply for mildly negative memories. The next step is important. During recall, a memory becomes 'labile', meaning that events during recall can influence how the memory is restored (or "reconsolidated" as in current parlance) and may be recalled in the future.

When a person tries to form a vivid and detailed image during recall, this influences the original memory, which becomes more vivid and realistic. This 'imagination inflation' effect (e.g., Goff & Roedinger, 1998) is a notorious phenomenon in police interrogation. When a suspect or witness has visualised a scenario several times, the level of vividness and credibility of the original memory change, meaning that imagination inflation affects the next recall. From a WM standpoint, the 'recall + eye movements' combination will lead to 'ima-



gination deflation'. And this should also be evident when the memory is recalled after the dual-task session. So the WM theory explains the findings described above: eye movements tax WM and, for this reason, the memory is reconsolidated less vividly. According to this theory, it makes no difference whether eye movements are horizontal or vertical. The effects of vertical eye movements do not agree with an 'interhemispheric communication theory', but they do agree with a WM theory."

In conventional EMDR therapy, the mode of distraction proposed is bilateral, ideally bilateral eye movements. But De Jongh holds that any distraction will do the same job, bilateral or otherwise. The stronger the distraction, the greater the

degradation of the memory and its reconsolidation into long term memory in a less vivid form.

#### The reprocessing question

Next to fall was reprocessing. The working memory (WM) hypothesis adequately explains the 'D' in EMDR – the desensitisation aspect – but surely it has nothing to say about the 'R' – the reprocessing. Or does it? According to De Jongh, the cognitive reappraisal happens anyway, as the memory is desensitised and the SUDs fall. He draws attention to the finding of his research team when it compared EMDR with prolonged exposure (PE). "We find the same changes taking place in prolonged exposure, the only difference is that we are not necessarily looking for them when we do PE. But they are there if you care to look for

► them and you would find them if you gave these patients questionnaires”, he said. De Jongh recalls that, in the early days, Shapiro’s researchers were reporting intriguing findings. In addition to the expected fall in SUDs with the desensitisation of traumatic memory, they said that subjects were reporting ‘I see a sun’, ‘now I see my children around me’ and they were calling it ‘healing’. Her response was to try to explain these cognitive phenomena, or associations, within the model, hence the ‘reprocessing’ part of EMDR. However, De Jongh asks, “Are they really necessary? They are nice and, as therapists, we like them and believe they are important. But can the same results be achieved without following these ‘associations’?” De Jongh believes they can, and that this is happening all the time. So long as the memory is activated, these changes begin to take place; dysfunctional networks integrate with functional networks as per the AIP model and cognitive reappraisals emerge spontaneously.

The WM hypothesis explains equally well the degradation of imagined images created in the Flashforward technique (Engelhard *et al.*, 2010)

Next for the chop is the perceived need for continuity with the same therapist. Both at PSYTREC and at Altrecht Academic Anxiety Centre, the treatment centre of Suzy Matthijssen, this is positively avoided and clients will see different EMDR therapists during the course of their treatment days. This changing of therap-

ists, called ‘therapist rotation’, again seems to have no impact on their impressive results (Van Minnen *et al.* 2018).

Something they did not mention in their workshop but which should be addressed is raised in Van den Hout’s and Engelhard’s 2012 paper. That is, if the working memory hypothesis is correct (and evidence in its favour is mounting) then taxing the working memory whilst recalling positive events, real or imagined, should similarly degrade positive memories. And indeed, Hornsveld *et al.*, (2011) showed this to be the case. This has important clinical implications because asking clients to do *slow* EMs whilst installing a positive cognition will be counterproductive and similarly for the installation of a calm/safe place. Nor is our penchant for alternating beeps backed up by research. Van den Hout *et al.* (2012) showed in a small study of 12 subjects that the alternating auditory stimulation were ineffective in producing the effects seen with eye movements – about as effective as recall only.

#### **Flash Technique**

EMDR 2.0 has evolved to treat a particularly resistant client group with severe PTSD that has been unresponsive to other treatments. Given the research summarised above (and there is much more) it becomes easier to understand the emphasis on activation and taxation of working memory. In the drive to isolate the parts of the protocol that produce most therapeutic impact in the least time, Matthijssen and De Jongh are

now investigating Phil Manfield’s Flash Technique (FT). “Both Suzy and I had a long conversation with Phil Manfield about FT last week”, De Jongh said. He and Matthijssen are wedded to WM as an explanation of the mechanism for EMDR 2.0 and believe that something else is behind the efficacy of the FT. Phil Manfield disagrees: “De Jongh and Matthijssen explain the mechanism of action for EMDR2.0 in terms of the WM taxation hypothesis, while I explain the mechanism of action of Flash as a distraction or refocusing rather than a taxation. In my mind, the difference is only in the explanation, because I believe that the mechanism of action of EMDR2.0 is actually identical to Flash; that both draw their effectiveness from distraction rather than WM taxation.

From our 2000-member list-serv, I gather that there are many clinicians, including some trained in Flash technique, who think that the effectiveness of Flash as well as EMDR2.0 come from WM taxation. For those who believe this, I ask how they understand Paul Siegel’s spider phobia research that we quote in every webinar. The subjects who did not know they saw the tarantula, because it was flashed on their screen too briefly, achieved significantly better results in reducing their spider phobia than the ones who knew they saw the tarantula. Both seemed to get phobia reduction from their exposure to the tarantula. If we attribute the results to WM taxation, we

► would have to say that somehow those who had 'unreportable exposure' (since they didn't know they were seeing a tarantula), had a greater taxation of WM, a conclusion that doesn't make sense."

One can immediately see the benefits to De Jongh's and Matthijssen's clinical work, as it could cut down the time spent on exposure. As might be expected, they are currently running an experimental study at Utrecht University comparing FT and EMDR therapy and are preparing a trial with PTSD patients at Altrecht mental health centre.

What will all this mean for EMDR therapy generally? What will be next to fall? Some thing tells me we may not have long to wait. A comparison of the Standard Protocol EMDR and EMDR 2.0 is on the cards and presumably

that will be with a less exclusive client group.

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Omar Sattaur is a science journalist who formerly worked for New Scientist magazine and has freelanced for the BBC and national newspapers. He now edits this journal. He is an Accredited EMDR and Cognitive Analytic Therapy Practitioner with a private practice in Cheltenham