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Method-of-Loci as a Mnemonic Device to Facilitate Access to Self-Affirming Personal Memories for Individuals With Depression

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Abstract

Depression impairs the ability to retrieve positive, self-affirming autobiographical memories. To counteract this difficulty, we trained individuals with depression, either in episode or remission, to construct an accessible mental repository for a preselected set of positive, self-affirming memories using an ancient mnemonic technique—the method-of-loci (MoL). Participants in a comparison condition underwent a similar training protocol where they chunked the memories into meaningful sets and rehearsed them (rehearsal). Both protocols enhanced memory recollection to near ceiling levels after 1 week of training. However, on a surprise follow-up recall test a further week later, recollection was maintained only in the MoL condition, relative to a significant decrease in memories recalled in the rehearsal group. There were no significant performance differences between those currently in episode and those in remission. The results support use of the MoL as a tool to facilitate access to self-affirming memories in those with depression.

Keywords

depression, autobiographical memory, method-of-loci, cognitive training

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The recollection of autobiographical memories of self-affirming, positive experiences in the day-to-day has been identified as a core adaptive emotion regulation strategy to counteract downturns in negative affect (Erber & Erber, 1994; Rusting & DeHart, 2000). Accessing such memories appears profoundly difficult for those with depression where recollection seems biased in favor of negative, self-devaluative events (Gotlib & Joormann, 2010). Even when more positive memories are successfully brought to mind, this appears to have little beneficial impact on mood for those with a history of depression (Joormann & Siemer, 2004; Joormann, Siemer, & Gotlib, 2007) and may even be detrimental (Joormann et al., 2007).

This lack of impact on mood may reflect the quality of the recollected memories. When in a negative mood, individuals with a history of depression have been shown to recall positive memories that were markedly less vivid than those retrieved by never-depressed peers (Werner-Seidler & Moulds, 2011). Furthermore, depressed individuals' autobiographical memories have a greater tendency to be "categorical," even when depression is in remission. Such categorical remembering is characterized by general themes reflecting repetition and regularity across personal experiences, including positive events, as opposed to recollection of the sorts of specific individual events that can act in the service of mood repair (Williams et al., 2007).

There is some evidence that enhancing access to specific and sufficiently elaborated positive or self-affirming memories can have beneficial effects on mood for those who are depressed. For example, when positive autobiographical memory scripts of depressed participants are suitably enriched with sensory and affective information, they actually have a greater impact on positive mood than do comparably elaborated memories in never-depressed peers (Dunn et al., 2012). Similarly, when those with depression are asked to focus on concrete aspects of positive memories (i.e., the moment-to-moment experience of the memories), as opposed to processing them in an abstract fashion (i.e., reflecting on the causes, meanings, and consequences), then the memories again have a positive impact on mood (Werner-Seidler & Moulds, 2012).

Together, these findings emphasize that individuals with depression can benefit when provided with the right kinds of

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positive memories to process—memories that are elaborated and vivid and populated with concrete details. However, an altogether different challenge is how to facilitate everyday access to such memories after they have been identified. The current study investigated a candidate strategy to meet this challenge—the method-of-loci (MoL).

The MoL is a mnemonic device that relies on memorized spatial relationships between *loci* (e.g., locations on a familiar route, rooms in a familiar building) to arrange and recollect memorial content. The basic method uses visual imagery to associate each to-be-remembered event or piece of information with one of the loci. By this means, material can be recollected simply by mentally retracing the route around the loci and using the image of each place on this imagined journey as a cue. The MoL was first described in Roman rhetorical treatises. For example, in his *De Oratore*, Cicero advised that:

> persons desiring to train this faculty (of memory) must select places and form mental images of the things they wish to remember and store those images in the places, so that the order of the places will preserve the order of the things, and the images of the things will denote the things themselves. (Cicero, 55 BCE/2001, pp. 351–354)

The MoL is now favored by the world's top "memorizers"; for example, it was employed by Lu Chao to recall π (the ratio of a circle's circumference to its diameter) to 67,890 decimal places without error in 2006 (see Raz et al., 2009).

The MoL also dramatically improves memory performance in naïve participants (Bellezza & Reddy, 1978; Groninger, 1971; Ross & Lawrence, 1968). The more salient, vivid, and bizarre the image linking the material to the location, the easier it is to recollect (Von Restorff, 1933). Similarly, the more emotive the associative imagery, the better the memory for the items (Holmes & Mathews, 2010). The MoL can be readily used for the temporary storage of information (e.g., a shopping list). However, most relevant to its application here is the use of familiar loci as a framework for a more permanent mental repository for material that someone wishes to have easy access to on repeated future occasions. Such repositories are commonly called *memory palaces* (Spence, 1984; Yates, 1966), as they often comprise elaborate and beautiful fictitious locations that the recollector has imagined solely for the purposes of information storage. Memory palaces of this kind have a long pedigree dating back to medieval times (Carruthers & Ziolkowski, 2002).

Given the MoL's ease of use and power as a mnemonic device to facilitate repeated access to material, the current study explored its potential to help those with a history of depression to access self-affirming personal memories of the kind that they would usually struggle to recollect (Teasdale, 1988). We recruited individuals with Major Depressive Disorder (MDD) that was either in episode or in remission, as we felt that the MoL could be helpful regardless of depression status. We nevertheless examined the relationship between remission status and memory performance in our analyses.

There were several important questions to address: Can participants immediately use the MoL to facilitate access to a pregenerated set of self-affirming memories that induce positive affect? Can such recollection improve with a small amount of training until it is at or around ceiling? Following training, can recall levels be maintained without further practice?

An important consideration was the choice of our control condition. We reasoned that all bona fide forms of memorizing, if applied to a discrete body of material such as a preidentified set of autobiographical memories, would improve recollection with training. However, we anticipated that the MoL would continue to facilitate access to memories *even after the training had finished*, and it would be in this context that it would demonstrate its superiority over other methods. We therefore selected a control condition—chunking and rehearsal—in which participants underwent a plausible form of memory training that would provide comparable immediate and posttraining benefits to those accrued using MoL. The effectiveness of chunking and rehearsal as mnemonic techniques is well established (Gobet et al., 2001), and they are advocated as memorization strategies in health and educational settings (e.g., see Nadar & McDowd, 2010).

The MoL and rehearsal training regimes followed the same structure with an initial face-to-face session with the experimenter to generate the memories, learn the respective memory technique, and assess recall of the memory set using the allocated technique (Time 1 recall: pretraining). This was followed by the training, which comprised short sets of memory practice on the same memories (homework) over a 1-week period, prior to a second session assessing recall of the practiced memories (Time 2 recall: posttraining). Participants then completed a surprise recall test 1 week after the second session to reassess memory recall (Time 3 recall: follow-up).

Although we anticipated that both rehearsal and MoL would be effective in facilitating retention when initially applied (Time 1 recall), we predicted that both techniques would improve recall further via training to at or near ceiling (Hypothesis 1: Time 2 recall − Time 1 recall). Our key prediction, however, was that recall in the MoL condition would be maintained on the follow-up surprise recall test (Time 3 recall − Time 2 recall) because of the ability to use the loci to access the memories, relative to a significant decrement in recall at follow-up in the rehearsal condition. We anticipated that this would be true even after controlling for any training-related gains in memory performance from Time 1 to Time 2 showing that it was not simply a carryover of differential initial training effects (Hypothesis 2).

Methods

Participants

Forty-two participants (mean age = 45.67 years, *SD* = 10.72; 27 females) with MDD, either in episode ($n = 21$) or remission ($n = 21$), were recruited via advertisements in local newspapers and health centers. MDD diagnosis and history, and other

current Axis I psychiatric comorbidity, according to the *Diagnostic and Statistical Manual for Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000), were determined using the Structured Clinical Interview for the *DSM-IV* Axis I Disorders Clinician Version (SCID; First, Gibbon, Spitzer, & Williams, 2002) administered by A.G., a postdoctoral health psychologist. Prior reliability training on the presence/absence of SCID Axis I diagnoses, between A.G. and T.D., with 28 separate patients resulted in complete agreement. Exclusion criteria were a current diagnosis of substance dependence, a history of psychosis, or organic brain injury. No participants were excluded. The SCID was administered separately within 4 weeks prior to the first experimental session. Following SCID assessment, participants were randomly allocated to the MoL or rehearsal condition using a minimization procedure stratified for presence or absence of a current depressive episode.

Materials and measures

Self-report measures. In Session 1 (see below), participants provided written, informed consent and completed the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a widely used and well-validated measure of depressive symptoms over the previous week (we used the original version of the BDI to maintain consistency with records on our participant database), and the National Adult Reading Test (NART; Nelson, 1991), a widely used index of verbal IQ that is relatively immune to changes in mental state. The BDI was repeated in Session 2. These measures were included to evaluate the comparability of the two groups at baseline and to evaluate any impact of training on depressive symptoms.

Memory generation

For both conditions, memory training comprised two face-to-face sessions with an experimenter (the same person for all participants) of around 1 hr each, scheduled a week apart, and either side of three short (15- to 20-min) home-based sessions. In the first face-to-face session, following completion of the NART and BDI, participants were given as long as they needed (typically, 30 to 40 min) to generate 15 positive and self-affirming autobiographical memories with the assistance of the experimenter. The emphasis was on generating memories that they would wish to be able to access with relative ease during times of low mood or distress and that were particularly difficult to access easily in such states. The experimenter worked with the participants to enrich and elaborate the memories (cf., Dunn et al., 2012) using imagery and a focus on the specific and concrete details of the original events (cf., Werner-Seidler & Moulds, 2012). These would be the memories that participants would practice with during the training. Participants then compiled a short phrase as a "tag" for each memory so that it could be readily identified during recall. Following memory generation, participants rated each memory on a number of dimensions. Most importantly, we asked participants to rate the extent to which thinking about the memory recalled in this way had a positive impact on their current mood (10-point Likert-type scale from *neutral* to *extremely positive*; Dunn et al., 2012). This allowed us to verify that contemplating these memories had affective benefits (cf., Joormann et al., 2007). To ensure comparability across groups, we also asked participants to use a 4-point (ranging from *not at all* to *often*) Likert-type scale to answer the question "How often do you think about the memory?" and to record the age of each memory.

MoL Training

Following memory generation, the MoL participants were introduced to the MoL technique. The advantage of creating emotive and salient associations between to-be-remembered items and loci was emphasized. Participants were taken through a worked example of a shopping list using familiar London landmarks as loci. For example, to remember the item *milk*, it was suggested that they might imagine a torrent of milk gushing out of a lion statue's mouth in Trafalgar Square, splashing everywhere, and forming a lake. Participants practiced with items on the list until they were happy with the technique.

Participants next identified their own loci either along a familiar route (e.g., the journey to work) or within a familiar location (e.g., their childhood home). They practiced recalling the loci several times by mentally journeying around them until they expressed confidence in remembering the 15 locations. Participants then worked with the experimenter to form appropriate associations between the loci and the previously generated set of memories. For example, one participant in the main study had generated a memory of an important conversation over coffee in New York with her best friend. She associated the memory with the front of her childhood home (one of her selected loci) by imagining the fascia of the house transformed into an outlet of a popular U.S. coffee chain with her friend standing outside smiling and dressed as a barista. Another participant selected the birth of his daughter as one of the memories. He associated it with a red U.K. post box on his journey to work by imagining his daughter as a baby lying peacefully in a crib balanced on top of the post box. Once participants reported that they had formed associations with which they were happy, they were given a blank recall sheet and asked to use the loci to access the 15 memories without access to their notes (Time 1 recall). Following the recall test, participants filled in any memories and/or loci they had not been able to remember after consulting with their notes.

The home-based tasks were comprised of three 8- to 10-min exercises over the following week. Participants began each exercise by using their notes to remind themselves of their loci and memories and then, without notes, mentally navigating their chosen loci, bringing each memory fully and richly to

mind as they did so, and writing down the memory tags. If they could not remember certain locations and/or memories, then they could use their notes to remind themselves of the one(s) they had forgotten at the end of the exercise. After each exercise, participants rated "How long did you spend practicing your route? (in minutes)" and "How easily were you able to keep within the 10-minute time frame?" (using a 7-point Likert-type scale from *not at all* to *very easily*). After the final exercise, participants rated "How closely did you follow the instructions and practice your route and learn your memories using the MoL technique?" (using a 7-point Likert-type scale from *not at all closely* to *very closely*) and "How easy have you found it to learn your memories using the MoL technique?" (using a 7-point Likert-type scale from *not at all* to *very easily*). These ratings were included to check comparability across the two training conditions and to provide feasibility data.

In the second face-to-face session, participants were asked to mentally retrace the route around their loci, fully generating as many of the memories as they could without notes and recording them (Time 2 recall). They then filled in any memories and/or loci they had not been able to remember. Participants were paid an honorarium, and consent was elicited for phone contact regarding participation in future research into memory.

For the follow-up recall test (Time 3 recall), participants were phoned 1 week after this second session and asked (using a standardized script) to try to recall the 15 memories with which they had been working. They were given no prompts apart from this. They were then also asked whether they had been rehearsing the memories in the previous week using the MoL and if so how often.

MoL pilot study. To examine its feasibility for autobiographical material, we piloted this MoL protocol with 12 unselected participants (mean age = 32.75 years, *SD* = 12.04; mean BDI = 4.42, *SD* = 4.70; mean NART = 34.67, *SD* = 5.43) recruited from the department volunteer panel. All participants could generate 15 self-affirming memories that they reported as having a beneficial effect on mood (mean positivity rating = 8.61, *SD* = .71). Participants showed good immediate recollection after applying the MoL (mean Time 1 recall = 13.67, *SD* = 2.74, out of 15 memories). Recall was further improved by training over a week (mean Time 2 recall = 14.58, *SD* = 0.90), with 9 of 12 participants able to recall all 15 memories. Most importantly, recall seemed to be maintained above Time 1 levels at follow-up (mean Time 3 recall = 13.92, *SD* = 2.35), again with 9 of 12 participants at ceiling. There were no dropouts, and all participants reported completing all three homework assignments. In sum, the pilot study suggested that MoL training was feasible and acceptable and facilitated access to the target memories, at least in this small unselected sample.

Rehearsal training

This followed the same structure and used the same ratings as the MoL training, with the exception that participants received instruction on chunking and rehearsal of memories in Session 1, practicing first with a short list of items as per the MoL protocol and then applying the method to their own memories. With the help of the experimenter, participants were encouraged to group the memories into higher order sets based on regularities across the events in order to aid subsequent recollection. These "chunks" were then used to scaffold rehearsal of the memories. Participants practiced this technique for the home-based tasks by reminding themselves of the list of memories, chunking and rehearsing them several times, and then recalling them without their notes using the record sheets provided.

Results

Description of the sample

Two participants did not complete memory training (one per condition), and 2 could not be contacted at 1 week follow-up (both in the MoL condition). Data are therefore reported for the remaining 38 participants: 18 in the MoL condition and 20 in the rehearsal condition. The groups did not differ significantly on the diagnostic, mood, cognitive, or demographic measures (lowest $p = .13$; see Table 1, and see supplementary Table S1 for a breakdown by remission status). A Group (MoL, Rehearsal) × Time (Time 1: pretraining, Time 2: posttraining) ANOVA revealed a nonsignificant overall decrease in BDI scores as a function of training, $F(1, 36) = 2.17$, $p = .15$, $\eta_p^2 = .06$, but as expected, no interaction across groups ($F < 1$), consistent with the comparable gains in memory accessibility in the two conditions. This numerical decrease in BDI scores across the whole sample from Session 1 to Session 2 provides no suggestion that training in positive recollection has a detrimental effect on depressive symptoms (cf., Joormann et al., 2007).

In addition to MDD, we assessed other Axis I diagnoses on the SCID.[1] In the MoL condition, four participants met criteria for panic disorder (PD), three for obsessive compulsive disorder (OCD), three for posttraumatic stress disorder (PTSD), one for social phobia (SP), and three for generalized anxiety disorder (GAD). In the rehearsal condition, five met criteria for PD, one for agoraphobia, one for OCD, four for PTSD, one for SP, three for GAD, and one for specific phobia.

Recall Performance

Memory and recall data for the MoL and rehearsal groups are presented in Table 1 (for a breakdown by remission status, see Table S2). The two groups did not differ for the mean age of selected memories, $t(36) = 1.14$, $p = .26$, nor on ratings of how often they thought about the memories, how long they spent cumulatively doing the home-based practice, the ease of adhering to the practice, and compliance with task instructions (all ts < 1). Most importantly, both groups reported that thinking about the memories had a beneficial effect on mood (with no difference across groups; $t < 1$), verifying that reflecting on vivid, concrete memories of experiences that are subjectively

Table 1. Participant Characteristics and Memory Recall Data for the Rehearsal and Method-of-Loci (MoL) Groups

Variable	MoL (n = 18)	Rehearsal (n = 20)
Age	43.72 (10.93)	47.80 (10.79)
Education[a]	1:8:6:3	1:8:5:6
Gender (male:female)	5:13	7:13
NART error score	33.39 (8.34)	37.10 (6.01)
BDI score Session 1	20.11 (18.22)	16.45 (11.66)
BDI score Session 2	18.78 (17.78)	15.45 (10.97)
Number with current MDE	9	9
Median number of previous MDEs	TMTC	7
Memory age (weeks)	90.13 (83.47)	122.38 (90.76)
Memory positivity rating	8.16 (1.12)	8.05 (0.85)
Rating of how often memories are recalled	2.80 (0.54)	2.75 (0.39)
Time (min) spent recalling memories during homework (across three sessions)	21.03 (13.42)	22.25 (12.03)
Rating (across three sessions) of ease at keeping to allotted time for homework	5.81 (0.99)	5.88 (1.22)
Rating of homework compliance	6.18 (0.95)	6.10 (0.91)
Memories recalled Time 1	13.52 (2.46)	14.20 (1.40)
Memories recalled Time 2	14.67 (0.77)	14.50 (1.32)
Memories recalled Time 3	13.78 (2.13)	12.35 (2.54)

Note: NART = National Adult Reading Test; BDI = Beck Depression Inventory; MDE = Major Depressive Episode; TMTC = too many to count.
[a]Education (UK) = Categories—General Certificate of Secondary Education; advanced levels: bachelor degree, postgraduate qualification.

chosen as self-affirming and mood enhancing (cf., Dunn et al., 2012; Werner-Seidler & Moulds, 2012) can have a self-reported positive impact on current affect in those with a depression history.

There was no difference across groups in the numbers of memories retrieved at pretraining (Time 1) ($t < 1$). To address our first hypothesis that both MoL and rehearsal training would lead to significant improvements in recall of memories from pre- to posttraining, we conducted a mixed-model ANOVA with time (Time 1, Time 2) as a within-subjects factor and group (MoL, rehearsal) as a between-subjects factor and numbers of memories retrieved as the dependent variable. As anticipated, there was a main effect of time, with both groups improving across training, $F(1, 36) = 5.00$, $p = .03$, $\eta_p^2 = .12$. There was no significant effect of group, nor a significant Time × Group interaction (Fs < 1), consistent with our expectation that we would find no support for the groups being significantly different in terms of the immediate benefits of training.

We next examined our key prediction (Hypothesis 2) that there would be greater differential reduction in the ability to recall the target memories at follow-up (Time 3) in the rehearsal group relative to the MoL group, after taking account of any memory gains across training to rule out simple carry-over effects. We computed a mixed Time (Time 2, Time 3) × Group (Rehearsal, MoL) ANCOVA looking at numbers of memories retrieved, with training gains (Time 2 memory scores minus Time 1 memory scores) as the covariate. As predicted (Fig. 1), there was now a significant Time × Group interaction, $F(1, 35) = 6.39$, $p = .016$, $\eta_p^2 = .15$. This qualified simple main effects of time, $F(1, 35) = 8.41$, $p = .006$, $\eta_p^2 = .19$, and group, $F(1, 35) = 4.88$, $p = .03$, $\eta_p^2 = .12$. Breaking down this interaction, there was no significant change from Time 2 to Time 3 for the MoL group, $t(17) = 1.76$, $p = .10$, Cohen's $d = 0.48$, but there was a significant decline in recall in the rehearsal group, $t(19) = 3.61$, $p = .002$, Cohen's $d = 0.87$.

This Time × Group interaction effect remained significant when including pretraining (Time 1) memory scores as a covariate, $F(1, 34) = 6.89$, $p = .013$, $\eta_p^2 = .17$. The interaction was also significant after including our stratification variable of depression status (current vs. remitted) in the ANCOVA, $F(1, 34) = 6.33$, $p = .017$, $\eta_p^2 = .16$ (and depression status did not interact significantly with any other variable, Fs < 1; see Table S2) and after including BDI scores at either pretraining, posttraining, or post- minus pretraining change (Fs > 5.76, ps < .023, $\eta_p^2 > .15$). These findings suggest that the relative advantage in memory access at follow-up accrued by the MoL group was not simply a function of pretraining group differences in memory access, or mood, and/or of mood change

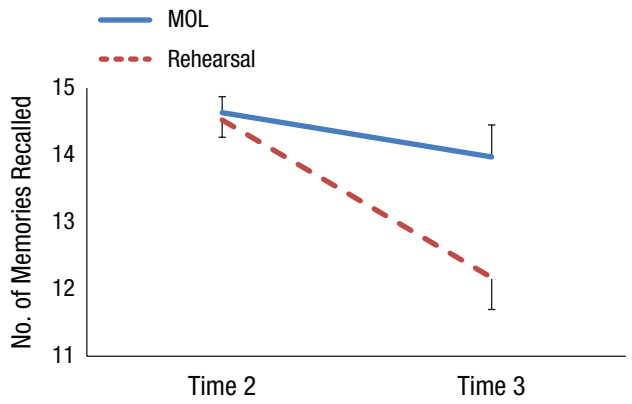

Fig. 1. Estimated marginal means for numbers of memories recalled at posttraining (Time 2) and 1-week follow-up (Time 3) in the MoL (n = 18) and rehearsal (n = 20) groups, adjusting for gains in memories recalled across training (Time 2 − Time 1.) Error bars (depicted as positive in the MoL condition, negative in the rehearsal condition, for graphical purposes) are 1 *SEM*.

across training and was comparable in those in episode and in remission.

Discussion

Our study replicates earlier findings (Dunn et al., 2012; Werner-Seidler & Moulds, 2012) that richly elaborated, concrete positive, or self-affirming memories in those with a history of depression can have a self-reported beneficial effect on mood. The data also indicate that established mnemonic techniques (both the MoL and chunking/rehearsal) can facilitate access to a preidentified set of such memories and that such access can be further enhanced with a week of training. To our knowledge, this is the first report of the deployment of such mnemonic strategies in the autobiographical memory domain literature. Importantly, in support of our key hypothesis, the results suggest that, once training has terminated, those who have trained with the MoL show relatively well-maintained levels of memory access on a surprise follow-up recall test in contrast to a significant drop-off in recall in the chunking/rehearsal group. The MoL appeared comparably effective and feasible for participants experiencing a current episode of depression as well as for those in clinical remission, with good training compliance and low dropouts.

Some possible limitations merit comment. To ensure that participants would be interacting with someone familiar, the 1-week surprise telephone recall test was carried out by the same experimenter who administered Sessions 1 and 2, who was therefore not blind to experimental condition. To take account of this, we sought to eliminate any role for subjective bias. The recall assessment was therefore fully scripted and read out to participants, and no recall prompts were given. The recall data were then double-checked by a second rater, blind to the experimental condition, who had access to the participants' notes and tag words regarding the memories, and no discrepancies were found. We are therefore confident that there was negligible opportunity for experimenter bias to exert an effect, in contrast, for example, to a diagnostic outcome assessment where subjectivity is much harder to eliminate.

A second issue is that we opted for a short follow-up period of 1 week for this initial study. The findings therefore merit replication with a longer follow-up period. That said, it is also likely that use of a short follow-up worked against our core hypothesis as it provided less time for recall levels in the rehearsal/chunking condition (itself an active mnemonic intervention) to fall away. In any extended follow-up study, it would also be important to examine the degree of intermittent rehearsal required to maintain levels of recollection over longer retention periods.

The findings provide encouraging support for the use of the MoL as a mnemonic device to assist recall of positive self-affirming memories in individuals with a history of depression. The next step is to explore whether and how the MoL technique could be employed to facilitate adaptive emotion regulation in this population (Erber & Erber, 1994; Rusting & DeHart, 2000). One way to do this would be to use some form of negative mood induction in the laboratory and examine participants' ability to repair mood and counteract the negative cognitions that arise using memories accessed with the MoL approach. Having established proof-of-principal that the MoL strategy can be used in the service of mood repair, it would then be important to map the spontaneous use of, and benefits associated with, this technique in the day-to-day response to downturns in mood, possibly using a diary measure or some form of experience sampling. An important corollary of this work would be an evaluation of how much training is required to securely establish the memory repository so that it can be readily accessed weeks and months after initial learning and whether such longer term retention requires an intermittent rehearsal regime and, if so, how it would best be facilitated. It would also be interesting to explore the extent to which the ability to access self-affirming memories using the MoL has effects on symptoms of depression other than negative mood. This will inform whether the technique is best conceptualized as an adjunct to extant therapies or has potential as a stand-alone, low-intensity intervention.

The current study has focused on using the MoL to access memories. It is important to examine the broader applicability of the technique. One potential application is for the creation of a repository of information about therapeutic strategies or skills that users could employ to enhance their mental health. Complex interventions such as cognitive behavior therapy provide their recipients with a repertoire of skills that need to be rehearsed and maintained once therapy has finished. Techniques such as the MoL could play a part in assisting such maintenance.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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Note

1. Five participants in each group only completed the Mood Disorders section of the SCID-I.

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