Memory Efficacy In Dementia

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Key Research Question:

- Memory efficacy perceptions in Alzheimer’s Disease
- Spaced-Retrieval
The situation of Mount Lofty was found from hence and from some other cross bearings, to be 34° 59' south and 138° 42' east. No land was visible so far to the north as where the trees appeared above the horizon, which showed the coast to be very low, and our soundings were fast decreasing.

From noon to six o'clock we ran thirty miles to the northward, skirting a sandy shore at the distance of five, and thence to eight miles; the depth was then 5 fathoms, and we dropped the anchor upon a bottom of sand, mixed with pieces of dead coral.
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Memory

- Sensory Memory
- Short Term Memory
- Long Term Memory
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Self Efficacy

- Beliefs or judgements about the capacity to perform effectively in different situations

- Can be applied to Memory
  - Beliefs about own memory – memory self-efficacy
  - Beliefs about another person’s memory – attributed memory efficacy
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Memory Efficacy

- Beliefs can be measured at 3 levels
  - Global
    - E.g., “I have a good memory.”
  - Task-specific
    - E.g., “I can always remember the names of my grandchildren.”
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Measuring Memory Self-Efficacy

- Metamemory in Adulthood Questionnaire
  - *Global memory self-efficacy*

- Memory Self-efficacy Questionnaire
  - *Task-specific* memory self-efficacy
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**Australian Longitudinal Study of Ageing (ALSA)**

- Commenced 1992
- Participants over 70 years
- Wide range of assessments including
  - some of the MIA questionnaire
  - several memory measures
  - Other cognitive measures
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Sub-sample from ALSA

- 75 participants at Wave 7 with some cognitive impairment
- MMSE score less than or equal to 23

<table>
<thead>
<tr>
<th>MMSE Scores</th>
<th>Wave 1 Mean Score</th>
<th>Wave 7 Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 23</td>
<td>25.70</td>
<td>19.30 *</td>
</tr>
<tr>
<td>Greater than 23</td>
<td>27.78</td>
<td>27.15*</td>
</tr>
</tbody>
</table>

*p < .006
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### Stability in MIA Scores

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Wave 1 Mean Score</th>
<th>Wave 7 Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIA – Capacity</td>
<td>52.74</td>
<td>51.67</td>
</tr>
<tr>
<td>max score = 85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIA – Locus</td>
<td>28.40</td>
<td>30.10</td>
</tr>
<tr>
<td>max score = 45</td>
<td></td>
<td></td>
</tr>
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### Differences in Memory Performance

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<tr>
<th>Memory Measure</th>
<th>Mean Wave 1 Score</th>
<th>Mean Wave 7 Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNT – Immediate Recall</td>
<td>5.68</td>
<td>3.95*</td>
</tr>
<tr>
<td>BNT – Delayed Recall</td>
<td>4.32</td>
<td>3.10</td>
</tr>
<tr>
<td>Digit Symbol Recall</td>
<td>5.89</td>
<td>3.31*</td>
</tr>
<tr>
<td>Address Recall</td>
<td>3.91</td>
<td>2.58*</td>
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</table>

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IQCODE
Asks a third-party about observed changes in day-to-day memory function over a period of 10 years

Average in this sub-sample was 3.13

(3 = not much change, 4 = a little bit worse)
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<th>Pearson’s $r$</th>
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<tr>
<td>BNT – Immediate Recall</td>
<td>-.27 ($p = .064$)</td>
</tr>
<tr>
<td>BNT – Delayed Recall</td>
<td>-.24 ($p = .108$)</td>
</tr>
<tr>
<td>Digit Symbol Recall</td>
<td>-.18 ($p = .242$)</td>
</tr>
<tr>
<td>Address Recall</td>
<td>-.22 ($p = .097$)</td>
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Summary so far....

- Global memory efficacy perceptions appear unchanged in people with some cognitive impairment
- Little known about task-specific memory efficacy perceptions
- Implicit memory (relatively) resistant to Alzheimer’s disease processes
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Spaced Retrieval

- Practise at successfully recalling information over progressively longer intervals
- Ultimate goal is retention of AND ability to recall information / skills over long intervals of time
- Focus on what a person can do rather than what they can’t
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Current Research

- Measure task-specific memory self-efficacy in people with Alzheimer’s disease
- Measure attributed memory efficacy perceptions of person close to participant
- Assess memory functioning of participant
- Training using Spaced-Retrieval
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Case Study - Sally

- Female 85 years old
- MMSE = 16
- Sister had higher task-specific memory efficacy perceptions than Sally
- Sally’s task specific memory self-efficacy perceptions fairly consistent over 2 weeks
- Both overestimated memory performance
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**Sally continued**

- Session 1 – 1 minute interval achieved
- Session 2 – 8 minute interval achieved
- Session 3 – information recalled at start of session (1 week interval)
- Session 4 – 16 minute interval achieved
- Session 5 – *(new information)* 8 minute interval achieved
In Conclusion

- Despite a decline in objective memory performance in ALSA participants with some cognitive impairment, perceptions of day-to-day memory functioning did not change.
- The roles of task-specific memory self-efficacy perceptions and perceptions of another are unclear.
- Spaced-retrieval appears to draw on implicit memory processes and offers a mechanism to rehabilitate aspects of memory.
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