A closer examination of episodic specificity in depression

Sylvia Hach$^{1,2}$, Lynette J. Tippett$^1$ & Donna Rose Addis$^1$

$^1$School of Psychology & Centre for Brain Research, The University of Auckland,
$^2$Unitec Institute of Technology
Background

• Autobiographical Memory (AM) and Future Thinking (FT) in depression
  – Reduction in episodic specificity; ‘over-general’ AM/FT
    (e.g., Williams & Broadbent, 1986; Brewin et al., 2010; Williams, 2007)
  – Mood congruent memory; reduction in sensory-perceptual event-specific knowledge
    (e.g., Lemogne et al., 2006; Watkins & Teasdale, 2001, 2004; Vanheule et al., 2009)

Family dinner last Sunday. Aunt Elaine dropped food on her favourite yellow shirt...
Family dinners are usually at Aunt Elaine’s house...
Generic cues to elicit events
Events scored according to event specificity:

3. Specific in time AND place
2. Specific in time OR place (e.g., repeated or extended events)
1. General in time AND place (e.g., personal semantics)
0. Omission

Background
AUTOBIOGRAPHICAL MEMORY TEST (AMT)
FUTURE EVENT TASK (FET)

Spatiotemporal context

Macro measure –
Event

Williams et al. (1996)
Event cues to elicit events
Events scored according to **detail** specificity:

**Internal episodic details**
- Event
- Place
- Time

**External (non-episodic) details**
- Semantic inf.
- Gen. event inf.
- Repetitions

(Re-)experiencing

**Meso measure – Informational bits**

Levine et al. (2002)
Background
Linguistic Inquiry and Word Count (LIWC)

Analyses transcripts
Performs word count for 80 word categories

Function words
  Pronouns
  Preposition
Content words
  Affect words
    Negative/Positive emotion
  Perceptual processes
    Hear
    See
    Feel

Detailed content

Family dinner last Sunday. Aunt Elaine was wearing her favourite yellow shirt...

Micro measure – Word use
Pennebaker, Booth & Francis (2007)
Aims

To determine whether spatiotemporally specific events of a control and depressive group are comparable with

(1) a meso measure (AI) and

(2) a micro measure (LIWC).

Match groups on macro measure (event) and assess residual group differences in meso (detail) and micro (word) measures.
## Participants

<table>
<thead>
<tr>
<th></th>
<th>Control Gp (n=24)</th>
<th>Depressive Gp (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (SD)</td>
<td>23.7 (6.9)</td>
<td>25.2 (7.7)</td>
</tr>
<tr>
<td>Sex (F:M)</td>
<td>20:4</td>
<td>20:4</td>
</tr>
<tr>
<td>Mean years Education (SD)</td>
<td>16.4 (2.7)</td>
<td>15.2 (2.2)</td>
</tr>
<tr>
<td>Mean BDI-II (SD)*</td>
<td>3.5 (3.3)</td>
<td>19.8 (12.6)</td>
</tr>
<tr>
<td>Mean BAI (SD)*</td>
<td>3.5 (1.7)</td>
<td>13.7 (8.0)</td>
</tr>
<tr>
<td>Mean No. of Episodes (range)*</td>
<td>0 (0)</td>
<td>4 (1-10)</td>
</tr>
<tr>
<td>Mean Rumination (SD)*</td>
<td>3 (0.7)</td>
<td>3.9 (0.8)</td>
</tr>
<tr>
<td>Mean Cog Beh Avoidance (SD)*</td>
<td>51.4 (12.6)</td>
<td>79.4 (26.6)</td>
</tr>
</tbody>
</table>

* *p < .05
Methods

Modified AMT/FET with AI & LWIC scoring

PHASE 1

CONSTRUCTION/ELABORATION

- imagine future event
  - next few years
- ON THE MOTORWAY

- remember past event
  - last few years
- FAMILY CELEBRATION

PHASE 2

RATINGS

- detail
  - low 1 2 3 4 high
- emotion
  - low 1 2 3 4 high

EVENT DESCRIPTION

- Family dinners are usually at Aunt Elaine’s house...

ANALYSES

MACRO: AMT/FET
- proportion of specific events

MESO: AI
- number of internal / external details

MICRO: LIWC
- number of affective / perceptual words
Results

- Main effect of Condition ($p = .004$) and Group ($p = .002$)
Results

- Group x detail type interaction ($p < .05$)

- Group x internal detail type interaction ($p < .05$)

**Background**

**Aim**

**Methods**

**Results**

**Discussion**
Results

MICRO: LIWC

number of affective/perceptual words

Aunt Elaine wearing yellow shirt...

- **AFFECTIVE WORDS**
  - all
  - positive
  - negative

- **PERCEPTUAL WORDS**
  - all
  - see
  - hear
  - feel

- **Control group**
- **Depressive group**

- Group x condition x LIWC category ($p = .001$)
Discussion

• Depressive group show subtle but significant differences in the quality of spatiotemporally specific events.

• Consistent with structural and functional imaging literature, evidence of a reduction in internal episodic details – particularly related to the unfolding of the event.
  (e.g., Fairhall et al., 2010; Young et al., 2012; Hach et al., 2015; Campbell & MacQueen, 2004)

• Differences in perceptual word use were evident with a reduction in reference to “see” and increase in reference to “feel”.
Discussion

Russian doll of episodic specificity

Macro measure – Event

Meso measure – Informational bit

Micro measure – Word use

Events matched for spatiotemporal specificity may differ with regard to extent of internal and external event details.

Events similar in internal perceptual detail may, at word level, show a different number of perceptual references.
Acknowledgements

Students
Chris Murray
Carla Bautista

Funding