Effects of hippocampal amnesia on discourse following traumatic brain injury
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Introduction
We reported the case of AK, who despite a profound anterograde amnesia had a remarkable functional outcome in terms of academic, vocational, and interpersonal success (Duff et al., 2008a). She demonstrated a keen sense of self-awareness and insight into her deficits. Particularly striking was AK’s ability to conceal her memory impairment in everyday settings including in her social interactions.

In a separate line of work, we have been investigating the contribution of declarative memory to the real-world demands that communication places on language-and-memory-in-use by studying the discourse practices of a group of individuals with hippocampal amnesia. In previous studies we have reported the degree of discourse level impairments in patients with amnesia (Duff et al., 2007; 2008b; 2009; 2011; Kurczek & Duff, 2011).

Here we examine the discourse of AK and three demographically matched comparison participants across micro- and macro-linguistic and interactional measures. Of particular interest was whether her discourse abilities differ significantly from those individuals with amnesia who we have previously studied and if her discourse contributes to her unique profile and successful outcome.

Methods

Participants
• AK, 45 year old female with 22 yrs of education and a severe and selective declarative memory impairment secondary to a traumatic brain injury (TBI)
• Three age, sex, education, and handedness matched comparison participants

Table 1. Patient Neuropsychological Characteristics

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Age Corrected SS</th>
<th>Percentile</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal IQ</td>
<td>116</td>
<td>88</td>
<td>High Average</td>
</tr>
<tr>
<td>Full Scale IQ</td>
<td>126</td>
<td>86</td>
<td>Superior</td>
</tr>
<tr>
<td>Memory</td>
<td>94/94</td>
<td>WNL</td>
<td></td>
</tr>
</tbody>
</table>

Sensory Memory

Vocal Production (seconds) | 29/35 | WNL |

Executive Function

WCST Categories | 6 | 16 | WNL |

Results

Table 2. Word and Turn Data

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Subject</th>
<th>In-Session</th>
<th>Intertask</th>
<th>Past</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK</td>
<td>JS</td>
<td>RA</td>
<td>AK</td>
<td>JS</td>
<td>RA</td>
</tr>
<tr>
<td>Narrative</td>
<td>8.00</td>
<td>2.34</td>
<td>2.34</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>Procedural</td>
<td>4.00</td>
<td>0.32</td>
<td>0.32</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

AK produced half as many REs as the comparison group. The reported speech that she does produce is different in both its temporal and interactional type. This type of performance is comparable to the average amnesic performance.

Discussion

Typical of most TBI cases, AK presents with a complicated profile. Her discourse performance appears to be consistent with health comparisons in some areas and more consistent with the findings from our work with individuals with amnesic others. These findings suggest that successful outcome may be derived from the preservation of some but not all discourse abilities. Future work will continue to focus on other interactional discourse resources as conversational narrative, and interpersonal coordination.

References


