MSc Cognitive Neuropsychology

Disorders of Language Module

Spring Term, 2009

Convenor: Dr. Michael Thomas

Module Description
This module will contain topics on language breakdown following brain damage, and on language and speech disorders in development. The emphasis is on the types of deficits observed, for example, problems in sentence processing and in word finding, with special reference to how these inform our understanding of normal language processing. Both acquired and developmental disorders of language will be considered. Issues relating to brain imaging and to computational (connectionist) modelling of disorders will be treated in relation to specific processes. The module will include lectures, discussion of transcripts from patients, and seminars focusing on selected material.

Aims
The aims of this module are:

• To provide students with an overview of the main types of aphasia, including their historical origins
• To demonstrate how acquired deficits in language have been used to constrain theoretical models of language processing
• To demonstrate the relationship between acquired and developmental deficits of the language system
• To identify the contributions of new technologies to our understanding of language deficits, including neuroimaging and computational modelling
• To describe the recovery patterns at different ages following language deficits

Objectives
By the end of this course, students should be able:

• To describe the principal classes of aphasia and the processing models they support
• To outline the current debate in how such disorders inform our understanding of the structure and development of the normal language system
• To discuss current views of the link between the neural substrate and the cognitive level description of the adult language system
• To describe the contributions of different methodologies to studying language deficits, including behavioural studies, brain imaging, and computational modelling
Course Timetable

### Disorders of Language, Spring 2009

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk1</td>
<td>Thursday 15\textsuperscript{th} Jan</td>
<td>Introduction to aphasia and its basic forms</td>
</tr>
<tr>
<td>Wk2</td>
<td>Thursday 22\textsuperscript{nd} Jan</td>
<td>Acquired Comprehension Deficits</td>
</tr>
<tr>
<td>Wk3</td>
<td>Thursday 29\textsuperscript{th} Jan</td>
<td>Acquired Production Deficits</td>
</tr>
<tr>
<td>Wk4</td>
<td>Thursday 5\textsuperscript{th} Feb</td>
<td>Dr. David Green: Aphasia in bilinguals</td>
</tr>
<tr>
<td>Wk5</td>
<td>Thursday 12\textsuperscript{th} Feb</td>
<td>Prof. Sophie Scott: The neurobiology of speech perception</td>
</tr>
<tr>
<td>Wk6</td>
<td>Thursday 19\textsuperscript{th} Feb</td>
<td>READING WEEK</td>
</tr>
<tr>
<td>Wk7</td>
<td>Thursday 26\textsuperscript{th} Feb</td>
<td>Dr. Fiona Richardson: Neuroimaging and the architecture of the language system</td>
</tr>
<tr>
<td>Wk8</td>
<td>Thursday 5\textsuperscript{th} March</td>
<td>Dr. Fiona Richardson: Connectionist models of language deficits</td>
</tr>
<tr>
<td>Wk9</td>
<td>Thursday 12\textsuperscript{th} March</td>
<td>Dr. Jennifer Aydelott: Domain-general approaches to language disorders</td>
</tr>
<tr>
<td>Wk10</td>
<td>Thursday 19\textsuperscript{th} March</td>
<td>Developmental disorders of the language system</td>
</tr>
<tr>
<td>Wk11</td>
<td>Thursday 26\textsuperscript{th} March</td>
<td>The right hemisphere. Specialisation, plasticity, and recovery. Course Review.</td>
</tr>
</tbody>
</table>

**Seminar 1** Date to be agreed (see note) Category-specific deficits

**Seminar 2** Date to be agreed (see note) Specific Language Impairment

**Note on the scheduling of seminars**

The dates and times for the seminar will be agreed during the first lecture. Possible slots are Thursday 4.30-5.30pm on Thursday 5\textsuperscript{th} February, Thursday 12\textsuperscript{th} February, Thursday 26\textsuperscript{th} February, Thursday 5\textsuperscript{th} March and Thursday 19\textsuperscript{th} March.

**Handouts**

Lecture handouts will be available as PDF files on my website the day before the relevant lecture:

[http://www.psyc.bbk.ac.uk/people/academic/thomas_m/msccogneuro/handout_page.htm](http://www.psyc.bbk.ac.uk/people/academic/thomas_m/msccogneuro/handout_page.htm)
Essay questions

(5.1) To what extent has brain imaging informed psychological models of language processing?

(5.2) What have computational models told us about the way the language system can break down?

(5.3) What does Broca’s area do in the brain? How is this function related to the notion of a Broca’s aphasic?

(5.4) What implication does the existence of Specific Language Impairment have for the genetic basis of language acquisition?

(5.5) Students may also propose their own essay question related to the domain of language disorders. The question must be agreed in advance with Dr. Thomas.
Disorders of Language: Reading List

General sources


Sources for specific topics

• Broca’s region


• Semantic retrieval:


• Psycholinguistics and aphasia:


• **Category-specific deficits:**


• **Developmental disorders:**


• **Bilingual aphasia:**


• **Language in the right hemisphere**


• **Recovery and rehabilitation**


Seminar Readings

• Seminar 1: Category-specific deficits


• Seminar 2: Specific Language Impairment


