MSc Cognitive Neuropsychology

Disorders of Language Module

Term 2, 2005

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 problem that occur, for example, problems in comprehension, in sentence processing and in word finding, with special reference to how these inform our understanding of normal language processing. Research on rehabilitation will be included where appropriate. Issues relating to connectionist modelling of disorders and brain imaging will be treated in relation to specific processes. The module will include lectures, discussion of transcripts from patients, and seminars focussing 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 current approaches to rehabilitation of language deficits, and the recovery patterns at different ages

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, brain imaging, and computational modelling
## Course Timetable

### Disorders of Language, Spring 2005

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Wk1</td>
<td>Thursday 13(^{\text{th}}) Jan</td>
<td>Introduction to aphasia and its basic forms</td>
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<tr>
<td>Wk2</td>
<td>Thursday 20(^{\text{th}}) Jan</td>
<td>Acquired Comprehension Deficits</td>
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<td>Wk3</td>
<td>Thursday 27(^{\text{th}}) Jan</td>
<td>Guest Lecture: Dr. Andrea Mechelli: <em>Functional imaging of semantic retrieval</em> (Seminar)</td>
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<tr>
<td>Wk4</td>
<td>Thursday 3(^{\text{rd}}) Feb</td>
<td>Guest Lecture: Dr. David Green: <em>Aphasia in bilinguals</em></td>
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<tr>
<td>Wk5</td>
<td>Thursday 10(^{\text{th}}) Feb</td>
<td>Guest Lecture: Dr. Sophie Scott: <em>Neurobiology of speech perception</em></td>
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<tr>
<td>Wk6</td>
<td>Thursday 17(^{\text{th}}) Feb</td>
<td>Acquired Production Deficits</td>
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<td>Wk7</td>
<td>Thursday 24(^{\text{th}}) Feb</td>
<td>Developmental disorders of the language system</td>
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<td>Wk8</td>
<td>Thursday 3(^{\text{rd}}) Mar</td>
<td>Guest Lecture: Dr. Jennifer Aydelott: <em>Speech perception, psycholinguistics and aphasia</em> (Seminar)</td>
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<tr>
<td>Wk9</td>
<td>Thursday 10(^{\text{th}}) Mar</td>
<td>Connectionist models of language deficits</td>
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<td>Wk10</td>
<td>Thursday 17(^{\text{th}}) Mar</td>
<td>The right hemisphere. Specialisation, plasticity, and recovery</td>
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<td>Wk11</td>
<td>Thursday 24(^{\text{th}}) Mar</td>
<td>NO LECTURE</td>
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| Seminar 1 | 4-5pm on Thursday 27\(^{\text{th}}\) January | Category-specific deficits or Treatment of aphasia (students choice) |
| Seminar 2 | 4-5pm on Thursday 3\(^{\text{rd}}\) March   | Specific Language Impairment         |
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

Essay questions

(5.1) Evaluate the Wernicke-Geschwind model in the light of modern brain imaging evidence.

(5.2) What can we learn about language comprehension based on the extent to which semantics and syntax can dissociate?

(5.3) “Language develops in the left side of the brain”. To what extent does neuropsychology support this (popular) conclusion?

(5.4) Have connectionist models told us anything about how the language system can break down?

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

(5.6) What is the cause of Specific Language Impairment? What does it tell us about normal language acquisition?
Disorders of Language: Reading List

General sources


Sources for specific topics

- **Semantic retrieval:**
  

- **Psycholinguistics and aphasia:**
  

- **Category-specific deficits:**
  


• Developmental disorders:


• Bilingual aphasia:


• Language in the right hemisphere


• Recovery and rehabilitation

Seminar Readings

• Seminar 1: Option (a) Category-specific deficits


• Seminar 1: Option (b) Treatment


• Seminar 2: Specific Language Impairment


