



PSYN855

Neuroanatomy for Neuropsychologists

S1 Day 2015

Department of Psychology

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General Information

Unit convenor and teaching staff

Judi Homewood

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Contact via 9850-8652

X5B 237

by appointment, preferably Tuesday or Thursday

Credit points

4

Prerequisites

Admission to MCLinNeuro or DCLinNeuro

Corequisites

Co-badged status

Unit description

In this unit students explore the human brain, and examine the neuroanatomical and behavioural consequences of brain damage. The unit adopts the standard correlative neuroanatomy approach, discussing development of the nervous system and the anatomy of the mature nervous system (the brain stem and associated structures, diencephalon, and telencephalon; blood supply; white matter pathways; ventricles; and meninges).

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

1. describe the ways the nervous system is classified and know how this classification system came about
2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour

5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
6. present a critique of a published single case with acquired brain injury
7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes
8. understand the ongoing influence of selected early research findings based in neuroanatomy on the clinical and academic discipline of neuropsychology

Assessment Tasks

Name	Weighting	Due
<u>seminal research paper</u>	5%	various
<u>Critique recent case</u>	10%	various
<u>case report</u>	35%	3 June
<u>multiple choice test</u>	20%	30th March
<u>Exam</u>	30%	1st June 2015

seminal research paper

Due: **various**

Weighting: **5%**

Choose a study that has had a major and lasting impact on the discipline of neuropsychology (e.g., Penfield, W. (1959) The Interpretive Cortex. *Science*, 129 (3365), 1719-1725; Gazzinga, M (1967) The split brain in man. *Scientific American*, 217(2), 24-29). I have suggestions of papers that link closely with lecture material or you are free to choose another paper.

With a maximum of three power point slides (not including the references and the title slide which must include your name and reference to the paper presented) and five minutes presentation time (strictly enforced) , explain the findings of the study, why they are important for neuropsychology, the neuroanatomical basis and findings in the current literature that are derived from the paper you are presenting.

On successful completion you will be able to:

- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 8. understand the ongoing influence of selected early research findings based in

neuroanatomy on the clinical and academic discipline of neuropsychology

Critique recent case

Due: **various**

Weighting: **10%**

As a group exercise (n= 4) students will present and critique a recently published single case. Each group will do this once. I've selected the single cases. An important goal is to discuss the cases in an interactive manner. I hope that with a little planning and advance preparation, the case presentations will be a stimulating and enjoyable experience for all. One group of students will present the case: background to the disorder, detail of the case including the CT or MRI scans, details of the tests conducted and what was found, what conclusions can be drawn like they were presenting at a case conference at a hospital. They will also critique the conclusions and comment of what additional data would clarify the conclusions. The remaining students (probably 3 groups of 4) will ask at least two questions.

On successful completion you will be able to:

- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes

case report

Due: **3 June**

Weighting: **35%**

The case presentation fulfil the following criteria:

- a single case published in a peer-reviewed journal from 2010 onwards
- not discussed in class
- the published case must contain both neuroanatomical (imaging or autopsy) and neuropsychological data
- the neuroanatomical data must be presented as Figures, not only described in the text
- the paper must be available electronically via Macquarie University Library
- must not be from the journal Neurocase

Make a power point presentation of the case contained in the report as if you were presenting this case to colleagues at a university seminar. In a maximum of ten slides (not including title slide, which must include your name and student number, and references) include

- a description of the case and context
- the research question: what link was the author trying to establish ? include why this is an interesting question
- the neuroanatomical and test data
- information about the tests chosen, what they measure and their appropriateness
- what conclusion was drawn
- what additional data would strengthen or diminish the conclusion
- any criticisms. There is no need to include criticisms such as the need for more unspecified research or the problem of generalisability per se. Focus on the data collected and the conclusions. Submit via the Ilearn site by 5pm on the due date

On successful completion you will be able to:

- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
- 6. present a critique of a published single case with acquired brain injury

multiple choice test

Due: **30th March**

Weighting: **20%**

There will be a 40 item multiple choice test held on 30 March 2015. Questions will be drawn from the material presented in lectures.

On successful completion you will be able to:

- 1. describe the ways the nervous system is classified and know how this classification system came about
- 2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)

- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
- 6. present a critique of a published single case with acquired brain injury

Exam

Due: **1st June 2015**

Weighting: **30%**

In this exam you will be required to label photographs of brain structures and answer short answer questions. Questions will be drawn from the material presented in the practical sessions and the lectures.

On successful completion you will be able to:

- 1. describe the ways the nervous system is classified and know how this classification system came about
- 2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
- 6. present a critique of a published single case with acquired brain injury

Delivery and Resources

This unit is taught using a combination of lectures, seminar style presentations by students and three practical sessions

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit <ask.mq.edu.au>.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at <ask.mq.edu.au>

IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes
- 8. understand the ongoing influence of selected early research findings based in neuroanatomy on the clinical and academic discipline of neuropsychology

Assessment tasks

- seminal research paper
- Critique recent case
- case report

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- 1. describe the ways the nervous system is classified and know how this classification system came about
- 2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders

- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes
- 8. understand the ongoing influence of selected early research findings based in neuroanatomy on the clinical and academic discipline of neuropsychology

Assessment tasks

- seminal research paper
- Critique recent case
- case report
- multiple choice test
- Exam

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- 1. describe the ways the nervous system is classified and know how this classification system came about
- 2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
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- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes
- 8. understand the ongoing influence of selected early research findings based in neuroanatomy on the clinical and academic discipline of neuropsychology

Assessment tasks

- seminal research paper
- Critique recent case
- case report
- multiple choice test
- Exam

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- 3. conceptualise the relationship between different components of the same system (e.g., the pyramidal and extra-pyramidal components of the motor system)
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 5. explain the anatomical basis of the disorders commonly seen in clinical practice and uncommon disorders
- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes

Assessment tasks

- Critique recent case
- case report
- multiple choice test
- Exam

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- 1. describe the ways the nervous system is classified and know how this classification system came about
- 2. describe the planes of direction and sections used in neuroanatomy and the meaning of the key terms
- 4. identify brain structures (including cortical and subcortical structures and blood vessels) and explain what is known about their role in producing behaviour
- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes

Assessment tasks

- seminal research paper
- Critique recent case
- case report
- Exam

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- 6. present a critique of a published single case with acquired brain injury
- 7. present a single case study by articulating the relationship between anatomical findings and pattern of behavioural changes

Assessment tasks

- Critique recent case
- case report

Changes from Previous Offering

Based on feedback from previous years I've modified the course this year to include recommending a text book and more interactive exercises in class.