5AAN5000 – Neuroscience and the Mind

General Course Outline

This course will encourage students to think critically about the relation between neuroscience and aspects of the human mind that are familiar from everyday experience. Two aspects of the mind are central: the process of thinking or entertaining a stream of thoughts (beliefs, desires, etc.); and the subjective character of conscious experience. We will critically examine the extent to which current neuroscientific theories are adequate to explaining these two central features of the human mind. Conversely, we will see cases where findings from neuroscience and psychology put pressure on our pre-theoretic understanding of these aspects of the mind.

The first semester focuses on two central mental phenomena: conscious experience with its striking subjective character, and the mental representations that are processed in thought. Both these topics soon generate deeper questions about the relation between the mind and the brain in general. These pressing questions will be tackled in the second semester, offering students an appreciation of the surprising range of different possibilities about the place for the mind in the physical world. The second semester also draws general lessons about merits of explaining mental phenomena like perception partly in terms of external world objects, properties and events. This externalist approach will be compared critically to purely internalist explanation.

The course does not presuppose any knowledge of neuroscience, and is not mathematical. All the relevant neuroscientific findings that students need to understand will be explained in an introductory and informal manner. Many of the required readings, especially for the second semester, are found in the following collection, which those taking the course are recommended to buy:


All other required readings will be linked or posted on KEATS. Some of these readings are also available via the links in the lecture timetable below.

Lecturers

Dr Nicholas Shea
nicholas.shea@kcl.ac.uk
Office hour: Wednesday 11-12

Prof Bill Brewer
bill.brewer@kcl.ac.uk
Office hour: Wednesday 12-1

(Both located at the Philosophy Building, Surrey Street, Strand Campus)
Students are free to drop by during office hours to discuss any problems they may be having, or issues of interest. Students may also email with questions pertaining to the course.

Lecture details

Monday 11:00-12:30
Room: K4U.12: room 12, upper fourth floor, King’s Building, Strand Campus
Attendance is very important – doing well in philosophy courses takes considerable effort. Although we will circulate lecture notes, it is very easy to misunderstand those notes if you did not attend the corresponding lecture(s). Circulated notes are no substitute for attendance.

First semester topics

Part I: The Neuroscience of Consciousness
The first semester starts with consciousness, distinguishing various senses of the term and grappling with the special methodological problems with studying consciousness empirically.

Primary aims. Students will:
1. Gain a perspective on the philosophical problems raised by phenomenal consciousness and the search for its neural correlates.
2. Understand access consciousness and its relation to phenomenal consciousness.
3. Appreciate how these philosophical issues arise in the case of vegetative state patients.
4. Understand a range of views about the prospects for the scientific study of phenomenal consciousness in the absence of access consciousness.

Part II: Representations in the Mind and in the Brain
In the second half of the first semester the focus shifts to thought processing and the status of information-processing explanations in cognitive neuroscience, with the aim of achieving a deeper appreciation of one of neuroscience’s most fundamental explanatory constructs.

Primary aims. Students will:
1. Gain a perspective on the relation between mental and neuroscientific levels, and between personal and subpersonal modes of explanation.
2. Understand the hypothesis that the brain processes mental representations in virtue of syntactic or other non-semantic causal properties.
3. Appreciate the difference between a language of thought and representational processing that does not depend on semantically-significant constituent structure.
4. Arrive at an understanding of the computational efficiency an informationally-encapsulated modular architecture.
Second semester topics

Part III: The Metaphysics of Mind
Key questions here are: what is the relation between the bearers of mental and physical properties; are various mental properties categorical or dispositional in nature, and what is their relation with the physical properties of human animals?

Primary aims. Students will:
1. Come to understand the central problems in the metaphysics of mind that have engaged philosophers of mind throughout the history of the discipline.
2. Acquire an appreciation of the arguments for and against some of the most influential positions in the area, such as dualism, behaviourism, various identity theories, and functionalism.
3. Arrive at their own assessment of the relative strengths and weaknesses of these approaches.

Part IV: Explanation and Externalism
Issues here cluster around two topics: first, reconciling the causal role of the mental with the rationalizing character of psychological explanation; second, reconciling the direct awareness that we have of our mental lives with the fact that our mental condition constitutively depends on the nature of our external environment.

Primary aims. Students will:
1. Come to understand the motivation for, and various objections to, Davidson’s anomalous monism.
2. Acquire an appreciation of the issues and options concerning the nature of psychological explanation and mental causation.
3. Arrive at systematic understanding of the debate between internalist and externalist approaches to mental phenomena including belief and perception.

Assessment Methods
Marks breakdown. Final marks will be determined as follows: (i) final exam 70%, (ii) coursework essay 20%, (iii) oral presentation 10%.
Descriptive grade criteria are available [HERE.]
Note that we will apply these criteria in a slightly more lenient fashion than usual, taking into account that you are scientists.

Final Exam. The examination is unseen, three hours long, and will contain around 10-12 questions. Students must answer three questions, in the form of short essays. Past papers are available on request. We will circulate potential examination topics, together with advice on how to tackle essay-based examinations, at the end of the course.
Coursework essay. Students must write an essay on one of four topics (see below for questions). Feedback on essay outlines will be offered, provided they are submitted before the deadline below. Note that the outlines do not count towards your final mark, and are optional. Still, you are encouraged to submit them.

Oral presentation. Students must also give one ten minute oral presentation, in groups of two. Each student will talk for around 10 minutes on a pre-determined topic (see below) followed by discussion. 10% of your final mark is available, and it is not uncommon for presentation marks to make the difference between two classes when the final marks are added up.

Essay Titles
Students must answer ONE of the following questions:
1. ‘When it comes to the subjective character of experience, scientists should restrict themselves to studying access consciousness.’ Argue for or against that claim.
2. Is cognitive neuroscience right to assume that physical goings on in the ‘wetware’ of the brain, like the distribution and dynamics of the depolarization of neurons, can be representations with semantic content?
3. Is the possibility of inverted qualia a conclusive objection to the functionalist account of the mind?
4. Does the content of belief supervene upon the subject’s internal condition?

Essay Outlines
Those wishing to submit essay outlines for feedback must do so no later than 5pm Thursday 28th March 2013. Outlines should be submitted as MS Word or PDF documents (.doc, .docx or .pdf) by email to patrick.butlin@kcl.ac.uk and should be no more than one page long. Highlight the overall structure of the essay, the main points you intend to discuss, and your intended conclusion – as a rough guide, you should have around 5 bullet points, with 1-2 sentences text for each.

Final Essay Deadline
Essays should be submitted as PDFs or MS Word documents (.doc or .docx) through KEATS. Essays are due by 5pm Monday April 29th 2013. We are unable to authorise extensions – you will need to discuss such matters with your own department.

Essay Writing Guidelines
Readings for the essays are (i) lecture notes, (ii) primary course readings in the table below. In addition, secondary readings will occasionally be posted on KEATS, which may also be relevant to the essay titles. You may also bring in other material. The essay ought to be 2000-2500 words (do not exceed 2500 words). The essay must include a word count. Part of the challenge is to write succinctly and clearly. All quotations, paraphrases, and uses of specific authors’ ideas must be fully referenced in some standard form (giving author, date, and a specific page number reference where the quotation, argument, etc. is to be found). See note on plagiarism below. Your paper should also have a bibliography section that lists the works you refer to, giving at least
information about author, date of publication, and title of work. Try to avoid merely summarising papers and/or lecture notes. We already know what we think. You will typically get much higher marks if you try to develop arguments of your own in addition to saying what others think. Summarise the main argument or problem briefly (around 500 words), and use the rest of the essay to critically assess this argument or problem and present your own views. You don’t have to think of a brand new theory to be original – presenting a particular author’s views, then discussing how you think other material you have read is relevant to those issues, counts as original thought and can score very high marks.

We don’t care what your position is – all we care about is how convincingly you are able to argue for it. It’s not what you think that matters, it’s why you think it. Always read questions carefully, and justify your answers as fully as you can. Don’t try to solve all the problems of philosophy in one essay. The less you attempt to do, the more likely you are to succeed. For further information and advice, please consult James Pryor’s excellent (2001) ‘Guidelines on Writing a Philosophy Paper,’ [available HERE.] You should not treat this guide as optional reading – it will be extremely useful to you as science students, and everyone should read it before beginning to write their essays.

Plagiarism
The college takes a very dim view of plagiarism, and the best case scenario for you if any is detected is a zero for your coursework. This has happened in previous years, so be warned. Follow the general rule: any material that is not your own work is explicitly attributed to its author. That way you can be sure you are not passing off someone else’s ideas as your own. You should therefore also reference your lecture notes, if you use them to help write your essays. Critically assessing the work of others, in your own terms, is not plagiarism, and is what you should be aiming to do. [See HERE] for more details.

Oral presentations
Students will be divided into groups of two. Both students should re-read paper A (which will be familiar from week 5 in the first semester) and read papers B1 and B2, which set out an opposing point of view. The other commentaries included with paper A, together with Block’s responses, should be read for background. In each group one student will be assigned to present the argument in paper A and the other to present the argument in papers B1 and B2. Each student’s presentation should last about 10 minutes, with the remainder of the tutorial devoted to discussion. Presentations will take place in semester 2 – Patrick Butlin will contact you with times.

Tutorial papers

**Lecture Timetable and Primary Readings**

**First Semester – Dr Nicholas Shea**

**Part I: The Neuroscience of Consciousness**

**Week One** - 1 October 2012
The Subjective Character of Experience

**Week Two** - 8 October 2012
Phenomenal Consciousness and Access Consciousness

**Week Three** - 15 October 2012
Neural Correlates of Consciousness

**Week Four** - 22 October 2012
Consciousness in Vegetative State Patients

**Week Five** - 29 October 2012
Studying Phenomenal Consciousness: Methodological Obstacles
Block, N. 2007. ‘Consciousness, accessibility and the mesh between psychology and neuroscience.’ *Behavioral and Brain Sciences* 30, 481-548.

6 November 2012: READING WEEK – NO LECTURE
→ additional reading required for weeks 6 and 7
Part II: Representations in the Mind and in the Brain

**Week Six** - 12 November 2012
Levels of Explanation and the Personal-Subpersonal Distinction

**Week Seven** - 19 November 2012
Homuncular Functionalism and the Representational Theory of Mind

**Week Eight** - 26 November 2012
The Language of Thought Hypothesis

**Week Nine** - 3 December 2012
Connectionism and Non-conceptual Representations

**Week Ten** - 10 December 2012
Modularity

Second Semester – Prof Bill Brewer


Part III: The Metaphysics of Mind

**Week One** – 14 January 2013
Dualism
Chalmers: 1, 2, 4.
**Week Two** – 21 January 2013  
Behaviourism  
  Chalmers: 5, 7.

**Week Three** – 28 January 2013  
Identity theories  
  Chalmers: 8, 9, 25, 28, 29, 32, 33, 38.

**Week Four** – 4 February 2013  
Identity theories contd.  
  Chalmers: 8, 9, 25, 28, 29, 32, 33, 38.

**Week Five** – 11 February 2013  
Functionalism  
  Chalmers: 11, 12, 13, 14.

18 February 2013 READING WEEK – NO LECTURE

Part IV: Explanation and Externalism

**Week Six** – 25 February 2013  
Anomalous monism and mental causation  
  Chalmers: 17, 22, 23.

**Week Seven** – 4 March 2013  
Anomalous monism and mental causation contd.  
  Selected papers from Heil and Mele (eds.), *Mental Causation*.

**Week Eight** – 11 March 2013  
Internalism and externalism  
  Chalmers: 54, 55, 56, 57, 58, 59.

**Week Nine** – 18 March 2013  
Internalism and externalism contd.  
  Chalmers: 54, 55, 56, 57, 58, 59.

**Week Ten** – 25 March 2013  
Review