Abnormal

Behavioural Neuroscience

Developmental Psychology: current issues

History and Philosophy of Psychology II

Language and Communication

Perceptual Systems

Statistics and Research Design

The Nature/Nurture controversy
Abnormal Psychology

Lecturers
Dr. David. E. Schotte
Ms. Diane Clark
Mr. Simon Milton
Professor Stephen W. Touyz

The course aims to give a general overview of information in the field of adult, abnormal psychology. This includes diagnostic criteria, possible aetiologic influences, and, where appropriate, brief discussion of treatment alternatives. Tutorials focus on videos depicting each of the disorders covered in the course.

Also covered are an introduction to abnormal psychology (e.g., conceptualising abnormality) and overviews of a variety of disorders, including anxiety disorders, mood disorders, addictive behaviours, psychoses, and personality disorders.

Text
Behavioural Neuroscience

Lecturers
Dr Iain S. McGregor  Room 244 Top South Badham
Dr Dale Atrens  Room 476 Main Quad
Dr Evian Gordon  Dept of Psychological Medicine, Westmead Hosp.

Tutors
Dr Iain S. McGregor  (1 tutorial)
Dr Dale Atrens  (3 tutorials)
Dr Ann Topple  (2 tutorials)

Textbook

Overview
This course carries on where Psychology II Neuroscience course left off but gives more specialised coverage than the Psychology II course. Lectures will be in the areas of psychopharmacology and molecular neuroscience (Dr McGregor, 6 lectures), energy balance regulation (Dr Atrens, 4 lectures) and human brain imaging and cognitive neuroscience (Dr Gordon, 3 lectures).

Tutorials
These start in the second week of the semester and are of two hours duration. There will be a 6 week common core of laboratory work which will cover basic neuroanatomy and histology and introduce you to some of the current neuroscience research in the Department. After completing this common core there will be a multiple choice quiz on the laboratory material in week 6 of the semester. This will count for 15% of the final mark.

Those who score in the top 25% in this quiz will be eligible to participate in one of the laboratory research projects offered under the direction of one of the lecturers. In these projects a small group of 4-6 students work on a project in the current neuroscience program in the Department. At least one of the projects will occur at Westmead Hospital under the direction of Dr Evian Gordon. A report, which counts for 25% of the final grade, is to be written at the end of the lab project. Participation in lab projects is particularly recommended for students who are contemplating undertaking an Honours project in the Neuroscience or Psychopharmacology fields.

Those who do not participate in a laboratory project will undertake a library project - similar to a long essay - which also counts for 25% of the final grade. The topics for this library project will be announced at a later stage.

The final examination which is 60 multiple choice questions will count for the remaining 60% of the final grade.

Note about the use of animals. In some of the practicals you will be required to participate in the dissection of sheep brains or rat brains. There will also be tutorials involving observations of rat behaviour and some of the laboratory projects will involve the use of rats. No animal suffering will be involved in any tutorials or practicals. However, if you have strong objections against the use of animals in biomedical research then this course is not recommended.

Summary of evaluation
Laboratory Quiz (multiple choice)  15% (Occurs in week 7)
Report on Lab or Library Project  25% (Due in the last lecture)
Final examination (multiple choice)  60% (Occurs in November)
Lecture content

Dr McGregor
CANNABIS, THE BRAIN AND BEHAVIOUR. Neural actions of cannabis and cannabis-like drugs (cannabinoids). Anandamide and cannabinoid receptors. Effects of cannabinoids on mood and cognition in humans and other animals. Effects of the cannabinoid antagonist SR 141716A. The link between cannabis and psychosis.


MDMA ("Ecstasy"). Neural actions of MDMA. Possible neurotoxic effects and MDMA protective effects of fluoxetine ("Prozac"). Similarities between MDMA and Prozac in thier actions on the serotonin system.

MOLECULAR NEUROSCIENCE. Effects of drugs and sensory stimuli on gene expression in the brain. Use of c-fos as a metabolic marker. Use of knockout mice and antisense oligonucleotides to explore role of specific genes in behaviour.

Dr Atrens
ENERGY BALANCE 1. Obesity, definitions, epidemiology and implications.

ENERGY BALANCE 2. The components of mammalian energy balance

ENERGY BALANCE 3. The psychobiology of weight loss

Dr Gordon
Specific lecture content will be announced at the start of the course. Content will be in general area of cognitive neuroscience and human brain imaging.
Developmental Psychology: current issues

Lecturers

Dr Laurel Bornholt
Dr Pauline Howie (Coordinator)
Dr David Livesey

1. Sex role development (Howie)
   
   (a) Development of gender identity and sex role behaviours
   
   (b) Theories of sex role development

2. The child in the legal system (Howie)
   
   (a) Children's developing understanding of the legal process
   
   (b) Research on memory and suggestibility in children's testimony

3. The developing self: Development of self concept (Bornholt)
   
   (a) Knowing about others
   
   (b) Family and school contexts
   
   (c) Early childhood to adolescence

4. Perceptual Motor Development (Livesey)
   
   (a) Approaches to the study of perceptual-motor development: task oriented and process oriented approaches.
   
   (b) Assessment of perceptual-motor development - identifying children with Developmental Coordination Disorder.
   
   (c) The development of response control (response inhibition). Inhibitory function in children with ADHD.

Text
No set text
History and philosophy of psychology II: philosophical principles

Lecturers
Ms Fiona Hibberd
Dr Terry McMullen

Text (as for semester 1)

Syllabus

A. Psychology as science
1. The roles of observation and theory in science; operationism in psychology.
3. Scientific explanation; causality, determinism and functional explanation in psychology.
4. Constructing scientific theories: instrumentalism, realism and the ontological status of theoretical concepts in psychology.
5. Reductionism in science; the reduction of psychology to neurophysiology.
6. Theory change, scientific progress, revolutions and the role of paradigms in psychology.
7. Proposed alternatives to scientific objectivity: social constructionism and postmodernism.

B. Some fundamental concepts of psychology
1. The concept of behaviour: bodily movements, actions and behaviour as a process.
2. The concept of cognition: the representational concept of cognition and alternatives; the observation of cognitive processes.
3. The concept of motivation: intentions, desires, goal directedness, needs and drives.
Language and Communication

Lecturer
Dr Michael Walker

Course Outline

The course focuses on face-to-face communication. Language is considered in terms of its expressive content, and spoken language is discussed as part of a multi-channel communication system. The topics in the syllabus are:

The structure of conversation. This includes the structure of speech in relation to conversational turn-taking; speech structures with surface and latent meaning, especially irony, sarcasm, and joking; two part contrast and three term sequences and their use in conversation and public speaking; patterns of communication; signalling turns in two person, three person, and multi-person groups; sociolinguistics, especially sex differences, socioeconomic differences, and regional differences in the use of English.

Language in context. Spoken language and associated nonverbal signals; contextual effects on the interpretation of messages; encoding and decoding accuracy; nonverbal sensitivity; lying and the detection of deceit; mixed messages and the nonverbal dominance hypothesis; politeness and forms of address; personal disclosure; controlling the ramifications of disclosure; verbal remedial tactics; claim-backing and persuasion; marital communication; communication, language and health.

Nonverbal communication. Vocal and visual nonverbal signals; the vocal attractiveness stereotype; paralinguistic communication; the communicative content of speech errors, incoherent sounds, coughs, whistles, clicks, claps, clucks, and the like; aspects of gaze; facial expression; gestures and gesticulation; posture; gait; bodily communication; signalling in sexual encounters; signalling in aggressive encounters; signalling affect, such as boredom, interest, embarrassment, confidence, resignation, loneliness, pride, admiration, frustration, and the like.

Communication of emotion. The expression of happiness, sadness, anger, disgust, surprise, and fear; emotional development; gender and age differences in the expression of emotion; cultural differences in the expression of emotion; the facial feedback hypothesis; the power-emotion relationship in discourse; the role of emotion in interpersonal encounters.

General References
Nature/Nurture Controversy

Lecturer
Ms Alison Turtle

1. Early history: rationalism/empiricism; the perceived significance of feral children; conflicting theories of the evolutionary process.

2. The beginnings in empirical psychology; nineteenth century development of mental measurement (craniometry, phrenology, anthropometry). Galton and de Candolle on men of science, the launching of eugenics.

3. The pattern of twentieth century debate issues, influences, fashions, recurring themes. The development of theories of inheritance and the rise of behaviour genetics.

4. Social applications: psychological utopias; the eugenics movement; educational programmes. Deception and fraud in the scientific enterprise.

5. Methodological approaches: case studies, observation of neonates; behaviour genetics; experimental manipulation of environmental variables, field studies.

6. Content areas of ongoing debate: psycholinguistics, perception, mental deviation, intelligence, sex differences, criminality.

7. Conceptual problems: definition of terms, testability of theories, the separability of heredity and environment, the question of interaction, the viability of cross-cultural comparison.

General References
Perceptual Systems

Lecturers
Dr John Predebon 655 Mungo MacCallum, ph 93513321
Dr Rick van der Zwan 245 Top South Badham, ph 9351681

Lectures
Many of the lecture topics represent aspects of research conducted in the Department. There will be 6/7 lectures from John Predebon (Part 1), and 6/7 lectures from Rick van der Zwan (Part 2). Dr Predebon’s lectures (Part 1) cover selected current issues in visual perception mainly from a psychophysical perspective, although reference will be made to relevant physiological and neuropsychological findings. Dr van der Zwan’s lectures (Part 2) cover a range of visual phenomena from a neuroscientific perspective, ranging from the most fundamental to the most complex (including aspects of consciousness).

Part 1
1. The 'what' versus 'how' functions of vision: The relationship between perception and visually directed action. Dissociations between perception and action; critique of the neurological and behavioural evidence.

2. Recent developments in space perception: Stereoscopic depth constancy (vertical and horizontal retinal disparities). Anisotropy of visual space. Cue Integration.

3. 'Direct' (e.g., Gibsonian) versus 'Indirect' (e.g., Information Processing) approaches to visual perception. The notions of stimulus constraints and percept-percept coupling; application to constancies.

4. Attentional processes in basic visual processes (e.g., aftereffects and illusions); Spatial attention and visual search.

5. Learning and perception; Adaptation and illusion decrement studies.

Part 2
1. Complex visual cortical processing: The role of extrastriate cortex in perception. It seems striate cortex is at least necessary for consciousness, but not sufficient for it. The implications of this observation will be discussed with reference to a number of visual phenomena, and contrasts drawn between early and more recent neurophysiological findings.

2. Binocular rivalry: What binocular processing can tell us about consciousness and visual awareness. Normal visual processing uses the very slight differences between the views of your two eyes for stereopsis, but when the input for each eye is very different stereopsis fails and binocular rivalry manifests. Under these conditions perfectly visible stimuli are no longer perceived, you are no longer aware of what is in the visual field of one eye or the other. This phenomenon will be examined in terms of its cortical mechanisms and in terms of what it can tell us about visual consciousness and awareness.

3. Inter-sensory interactions: How vision and touch are integrated, and the differences between. Many behaviours are guided by the interaction of two or more senses. Vision is used by most people to guide movement and physical responses. Despite this, there seems to be a non-linear association between space perceived by vision and space perceived by touch. How vision and touch are integrated are examined with a view to understanding intersensory interactions.
4. Symmetry perception: The role of symmetry in complex behaviours and the cortical processes associated with perceiving symmetry. Discrimination of symmetry may have developed as an aid to survival, and seems also to be associated with mate selection and perceived attractiveness. Despite this complexity the mechanisms associated with symmetry perception arise early in visual processing.

5. Blindsight: A review of the behavioural and neurophysiological correlates of blindsight and hemisfield neglect. This lecture will involve a review of significant case studies illustrating central features of these phenomena, and will examine the complex relationship between visual perception and consciousness.

6. Cortical Development and Plasticity: The role of neurotrophins and other growth factors in cortical development, and in plasticity after the end of the critical period. Evidence is accumulating that some recovery of normal visual functioning after periods of deprivation or after lesioning (cortical damage) may be possible by application of nerve growth factors and related compounds.

Tutorials
The tutorials comprise a mixture of formal tutorials and tutorials in which students carry out group experiments under supervision. Students are required to write a research report, in the form of a journal article, on one (1) of the experiments. The report is due at the lecture in the last week of semester.

Note
If the number of enrolled students exceeds the capacity for carrying out group experiments under supervision, the tutorial content and the form of the tutorial assessment will be changed (i.e., in lieu of a report, there will be either an essay or an end of semester tutorial quiz).

Assessment
Report (or its equivalent) 40%
Examination 60%

Text
No set text. References to be provided.
Statistics and Research Design

Lecturer
Dr Margaret Charles

This course deals with the design and analysis of experiments in psychology for which some form of analysis of variance is appropriate. There will be 1 lecture and 1 tutorial per week. Tutorials will involve the use of statistical packages on computer as well as hand calculators. Students should purchase a computer disk and should bring this disk, as well as a calculator, to all tutorials.

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The problem of multiple comparisons. The one way fixed effects ANOVA model: partitioning variation and degrees of freedom. Expected mean squares and the formation of F ratios.

Asking focused questions: testing contrasts. Planned orthogonal contrasts. Trend analysis.

Controlling the Type I error rate with multiple comparisons: the Scheffe procedure and the Bonferroni procedure.

Factorial designs: The two way ANOVA model with fixed effects. Partitioning between-group variation into main effects and interaction effects. Main effect and interaction contrasts for a two way ANOVA design.

Decision-wise vs family-wise control of Type I errors.

Repeated measures or within-subject variables. Univariate vs multivariate approaches to the analysis of repeated measures data. Planned contrasts for designs involving repeated measures data.

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There is no set text for this course. Harris (1994) is an excellent reference, but the 'primer' in its title may be a misnomer. Howell (1992) is a useful source of information about analysis of variance and contrast analysis.

Harris, R.J (1994) ANOVA: An analysis of variance primer. Itasca, Ill.: Peacock


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Assessment will (provisionally) be based on an open-book test in mid-semester (20%), an assignment (30%) and a final examination (50%).