

2018 PSYC3310 TOPIC DESCRIPTIONS

Notes

You will be allocated to a single Topic that you will study in detail throughout the semester. The seminars and tutorials will assist you to undertake a small-group problem-based research project about the topic.

Please note that Topic seminars and tutorials are linked. When entering preferences you must consider whether you can attend both. You CANNOT pick a seminar from one Topic and a tutorial from another.

Topic 1 (Seminar: Tuesday 1400 - 1545; Tutorial: Wednesday 1300 - 1445)

Seminar leader: Dr Allison Fox | Phone 6488 3265 | Email allison.fox@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 3 hrs/ student

Atypical hemispheric lateralization and clinical neuropsychology

The notion that the two hemispheres of the brain are differentially recruited during the performance of distinct motor and cognitive tasks has been clearly demonstrated in classical experiments within the experimental psychological research literature. Emerging brain imaging techniques (e.g. ERP, fTCD, fNIRS) suitable for use in vulnerable populations have shown considerable promise in contributing to our understanding of the development of hemispheric specialization and its relationship with psychological functioning. During the seminar series, students will evaluate current research that highlights the relationship between atypical hemispheric lateralisation and clinical neuropsychology. In the laboratory series students will work in groups with their tutor to design and conduct an experiment addressing a research question of mutual interest in this topic area.

Topic 2 (Seminar: Tuesday 1600 - 1745; Tutorial: Wednesday 1500 - 1645)

Seminar leader: Dr Allison Fox | Phone 6488 3265 | Email allison.fox@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 3 hrs/ student

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Topic 3 (Seminar: Tuesday 0900 - 1045; Tutorial: Friday 0900 - 1045)

Seminar leader Dr Donna Bayliss | Phone 6488 3850 | donna.bayliss@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 10 hrs/ student

Individual differences in working memory and cognitive abilities

Do you Sudoku? Why is it that some people are better at this mind-bending game than others? It is likely due to individual differences in working memory ability. Working memory is an active memory system that underlies many of the cognitive tasks that we do every day. Increasingly, educational psychologists and other health professionals are recognizing the importance of working memory. In typically developing children and adults, working memory has been linked with educational achievement, higher-level executive skills and fluid intelligence. In atypical development, working memory impairments have been associated with a failure to progress at school, ADHD, dyslexia, and even schizophrenia in adults. Understanding the factors that contribute to working memory performance is essential if we are to understand the cognitive bases of these disorders. In this seminar series, we will review some of the recent findings in the working memory literature and discuss the role that working memory plays in educational achievement and atypical development. In the laboratory series, we will design an experiment to investigate some of the factors that contribute to working memory performance, and in particular, the process of consolidating information into working memory.

Topic 4 (Seminar: Wednesday 1300 – 1445; Tutorial: Monday 1400 - 1545)

Seminar leader Dr Linda Jeffrey | Phone 6488 3096 | linda.jeffery@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 6-7 hrs/ student

Fascinated by faces: How do we extract the social information that faces convey?

Have you ever stopped to think about how much crucial social information is conveyed by faces? Imagine what life would be like if you couldn't recognise faces or were unable to tell that someone was upset from their facial expression. Our ability to extract information from faces at a mere glance is essential for social interaction. Faces help us determine an individual's identity, sex, ethnicity and attractiveness, as well as providing insights into how people are feeling and what they are attending to. Yet all faces are remarkably similar as visual patterns, so we rely on very subtle differences and variations between them to make all these judgements. It's not surprising that face perception has been described as our most exquisite perceptual ability! How and why are we so good at processing faces? What structures and systems in the brain support face perception? Do people differ in their ability to read faces? Are we better at processing some kinds of faces than others? Can we extract information about personality from faces? We will address these questions in the seminar series and explore some current issues in face perception in depth including a) the **cross-race effect**, in which people have trouble remembering faces from unfamiliar ethnic groups, b) evolutionary explanations for why we find some faces more **attractive** than others, c) how we rapidly **makes judgements about personality and behavioural attributes** from faces (but are they accurate?) and d) **impaired face perception in prosopagnosia and autism**. The research project will allow students to investigate a novel question in face perception, introduce students to techniques used to investigate face perception and allow students to gain experience in conducting a real research project.

Topic 5 (Seminar: Thursday 1100 - 1245; Tutorial: Thursday 1300 - 1445)

Seminar leader Prof Simon Farrell | Phone 6488 3272 | simon.farrell@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 5 hrs/ student

Learning and memory for fun and profit

This specialist topic will look at how we learn from experience: particularly, how we learn what factors predict good (rewarding) and bad (punishing or aversive) outcomes, and how we use that knowledge to plan and make predictions about future events. We will look at how reward impacts on episodic memory, and how actual or anticipated reward can improve memory for single experiences. Here we will look both at the role of extrinsic rewards (e.g., money), and intrinsic rewards (e.g., learning interesting information). We will also look at how people sample information from their environment and from memory in order to evaluate options, form preferences, make choices, and plan for the future. In many of the papers we read we will cover other areas of interest, including the neuroscience of reward and memory and effects of healthy ageing. In the laboratory component, we will run a behavioural experiment that examines the relationship between reward and memory. A major focus in the experimental component is on using data to test theoretical predictions, and about doing open and transparent science.

Topic 6 (Seminar: Monday 1600 - 1745; Tutorial: Thursday 1600 - 1745)

Seminar leader Dr Ben Grafton | Phone 6488 2690 | ben.grafton@uwa.edu.au

Seminar hours: 10 x 2hrs; Tutorial hours: 10 x 2 hrs; Testing hours: TBC hrs/ student

The cognitive basis of resilience

Everyone will encounter adversities during their life. For example, for students studying at university, such adversities may include demanding intellectual activities, the pressures of being appraised on exams and assignments, and the difficulties associated with balancing academic, financial, and social responsibilities. Some students demonstrate high levels of resilience, thriving both emotionally, socially, and academically while engaging with these challenges. However, people differ in the degree to which they display such resilience, and many students experience ongoing high levels of anxiety and/or difficulties maintaining effective social, behavioural, and academic functioning. Cognitive models contend that biases in the selective processing of certain types of information are critically important in the determination of resilience. This specialist topic will explore the ways in which understanding of resilience, with particular emphasis on emotional functioning, has been advanced by research investigating the role that cognitive biases play in this dimension of individual difference. In the seminars, you will be encouraged to critically evaluate the various experimental approaches developed to assess, and modify, patterns of biased cognitive processing, and to critically appraise the capacity of alternative models of resilience to accommodate experimental findings. The tutorials will focus on the research project you are required to carry out, and will involve the design, development, and execution of experimental studies that address emerging issues in the field.

Topic 7 (Seminar: Tuesday 1400 - 1545; Tutorial: Wednesday 0900 - 1045)

Seminar leader Dr Diana Tan | Phone 6488 2282 | diana.tan@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 12 hrs/student

Perception of Faces and Voices Associated with Autism

The social model of disability proposes that individuals with disabilities may be disadvantaged not only because of their own differences and difficulties, but also because of societal barriers (e.g., negative attitudes) that inhibit optimal functioning. It has been suggested that difficulties with social interaction for autistic individuals may be a bidirectional issue involving social difficulties of autistic individuals as well as the quality and quantity of social experiences of autistic individuals. In this specialist research topic, we will explore whether autistic traits: (1) modulate social evaluations based on facial images and voice recordings, and (2) are related to fundamental differences in facial and vocal characteristics.

Topic 8 (Seminar: Thursday 0900 - 1045; Tutorial: Thursday 1100 - 1245)

Seminar leader Prof David Badcock | Phone 6488 3243 | david.badcock@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 4-6 hrs/student

Mid-level vision and perceptual disorders

Perceptual processes link people to their environment and so play an important role in determining human behaviour. In vision there is a challenge in taking the many local measures of regions in an image and combining them to create distinct descriptions of the objects in the scene. This process of collecting the local scene estimates into groups is the role of mid-level vision. Frequently, difficulties with mid-level vision are reported in groups with perceptual disorders, such as autism, migraine, dyslexia, schizophrenia, amblyopia and preterm-birth infants.

This unit will teach what mid-level vision is, and how we can test those perceptual functions. We will discuss evidence that suggests those processes are abnormal in the groups listed above. We will also teach you how to design and conduct experiments intended to tell us more about these perceptual processes in normal vision so that they can be later applied to such groups. This will involve learning about the methods of visual psychophysics and how to evaluate performance in individuals.

Topic 9 (Seminar: Thursday 1300 - 1445; Tutorial: Thursday 1600 - 1745)

Seminar leader Prof David Badcock | Phone 6488 3243 | david.badcock@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 4-6 hrs/student

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Topic 10 (Seminar: Friday 1100 - 1245; Tutorial: Friday 1400 - 1545)

Seminar leader Dr Mark Hurlstone | Phone 6488 3249 | mark.hurlstone@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: TBC hrs/student

Behavioural Economics

From medicine and finance to science and the arts, most aspects of human activity involve people making different kinds of decisions. The standard model of decision-making in economics contains some very strong assumptions. Specifically, this model assumes that people are rational, calculated, purely self-interested, and computationally proficient utility-maximisers—they know what makes them happy and always make decisions that maximise this happiness. Although this standard model sometimes works very well, on other occasions it fails very badly. Behavioural economics is a relatively new discipline that operates at the intersection of economics and psychology. It attempts to increase the explanatory power of economic theory by providing it with more psychologically plausible foundations. Behavioural economics is about testing the standard economic model on humans—seeing when it works and when it fails—and asking whether it can be augmented to better accommodate human behaviour. In the seminar series for this specialist topic, students will receive an introduction to some of the central ideas in behavioural economics and their applications. Research projects will involve laboratory experiments that seek to cast light on the psychological factors underpinning economic decision-making.

Topic 11 (Seminar: Monday 1100 - 1245; Tutorial: Tuesday 1100 - 1245)

Seminar leader Assoc. Prof Romina Palermo | Phone 6488 3256 | romina.palermo@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 6 hrs/student

Emotion Science

Emotion. What is it? The science of emotion is an exciting and broad area of psychological inquiry. Emotion lies at the heart of many professional applications of psychology, including clinical psychology, health psychology, and organisational psychology. Emotions also play an important role influencing decision-making in an array of ethical, legal and political domains.

My aim is to expose you to some of the important and interesting questions that have been examined, using diverse methods and participant groups.

The seminar series will draw from a wide array of research from psychology, neuropsychology and neuroscience. We will look at what emotions are, what their functions might be and how this could vary by emotion, and how we should best study them. We will discuss how people display emotion, particularly via the face but also by the body and voice. We will examine emotion in everyday life, such as how it affects our sleep and memory. We will also examine a variety of disorders in which emotion processing is disrupted.

The research project will allow students to investigate a novel question in emotion science, introducing some of the techniques used to measure emotion and providing experience in conducting research in this field.

Topic 12 (Seminar: Monday 0900 - 1045; Tutorial: Thursday 0900 - 1045)

Seminar leader Assoc. Prof Murray Maybery | Phone 6488 3255 | murray.mayberry@uwa.edu.au

Seminar hours: 10 x 2 hrs; Tutorial hours: 10 x 2 hrs; Testing hours: 14 hrs/student

Is Autism a Convergent or Divergent Condition?

Autism is considered a single disorder in diagnostic systems. However, symptoms of the condition, such as social and communication difficulties, unusual sensory sensitivity, and repetitive stereotypic behaviours, are only weakly related. These symptoms vary in severity and are represented in milder form as traits in the general population. In this topic we will investigate relationships between dimensions of autistic traits and also see if the dimensions diverge in their association with some of the typical cognitive features of autism. These cognitive features include limited automatic processing of emotion, a preference for local over global processing, and differences in the distribution of attention across visual space attributable to atypical brain lateralization.
