2019 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.

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Topic 1 (Seminar: MONDAY 10am-12pm; TUESDAY 10am-12pm)
Seminar leader: Dr Donna Bayliss | Phone 6488 3850 | donna.bayliss@uwa.edu.au
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 10 hours/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.

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Topic 2 (Seminar: WEDNESDAY 10am-12pm; Tutorial: THURSDAY 2-4pm)
Seminar leader: Dr Allison Fox | Phone 6488 3265 | Email allison.fox@uwa.edu.au
Seminar hours 10 x 2; Tutorial hours 8 x 2; Testing hours: 10 hours/student

Executive Functions and Performance Monitoring
Higher-order cognitive processes falling under the umbrella term ‘executive functions’ contribute to our ability to monitor performance and adjust behaviour to achieve optimal levels of functioning. This domain is often impaired following insult to the brain and neuropsychological tests assessing executive functions typically measure abilities such as hypothesis generation, planning, cognitive flexibility, susceptibility to distracting information, and performance monitoring. During the seminar series, students will evaluate research highlighting the nature of executive functions in clinical and neuropsychological practice. 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 3 (Seminar: THURSDAY 10am-12pm; Tutorial: THURSDAY 12-2pm)
Seminar leader: Prof David Badcock | Phone 6488 3243 | david.badcock@uwa.edu.au
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 5 hours/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 4 (Seminar: TUESDAY -4pm; Tutorial: THURSDAY 8-10am)
Seminar leader: Assoc. Prof Troy Visser | Phone 6488 3635 | troy.visser@uwa.edu.au
Seminar hours: 10 x hours; Tutorial hours: 8 x 2 hours; Testing hours: approximately 4 hours/student

The Use and Effectiveness of Brain Training
Commercially available “brain-training” programs such as Lumosity offer hope for improvement in cognitive function, and the potential to combat cognitive decline. However, what does psychological science have to say about cognitive training? The answer is decidedly mixed. This unit will look at the literature surrounding cognitive abilities, individual differences, and efforts to improve or modify cognitive performance. This includes an examination of the effects of both formal training programs as well as informal activities like video game playing.

Topic 5 (Seminar: TUESDAY 12-2pm; Tutorial: MONDAY 12-2pm)
Seminar leader: Assoc. Prof Romina Palermo | Phone 6488 3256 | romina.palermo@uwa.edu.au
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 5 hours/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. Our 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 6 (Seminar: MONDAY 9-11am; Tutorial: FRIDAY 9-11am)**  
Seminar leader: Prof Murray Maybery | Phone 6488 3255 | murray.maybery@uwa.edu.au  
Seminar hours: 10 x 2hr; Tutorial hours: 8 x 2hr; Testing hours: 6 hours/student

**The Broad Autism Spectrum**  
It is now widely recognised that autistic traits or symptoms form a continuum, anchored at one end by Autism Spectrum Disorder (ASD). People without a clinical diagnosis, but who report high levels of autistic traits, show many of the behavioural, cognitive and affective characteristics of people with an ASD diagnosis. Autistic traits form two relatively independent dimensions that capture social and communication difficulties on the one hand and repetitive stereotyped behaviour and interests, along with sensory sensitivities, on the other. Previous research in our lab has investigated links between higher levels of autistic traits and reduced processing of emotion, a preference for local over global processing, reduced creativity, and differences in the distribution of attention across visual space attributable to atypical brain lateralization. Projects developed in this special topic will extend this work on characteristics of the broad autism spectrum.

**Topic 7 (Seminar: MONDAY 2-4pm; Tutorial: THURSDAY 2-4pm)**  
Seminar leader: Dr Simon Farrell | Phone 6488 3272 | simon.farrell@uwa.edu.au  
Seminar hours: 20; Tutorial hours: 16; Testing hours: approximately 5 hours/student

**Memory in context**  
This specialist topic focuses on contemporary perspectives on episodic memory. We will look at our current theoretical understanding of memory. However, the focus is not on memory in isolation; rather, there will be a critical emphasis on how memory plays a role in the context of particular tasks, and our everyday lives. We will look at how memory is influenced by factors such as emotion, reward, adaptive concerns, and narrative and experiential changes; and how memory plays a role in judgement and decision-making. Some of the papers we cover in the seminar series will touch on the neuroscience of memory, and how memory changes as we age. The research project run in the tutorial component of the topic will use a virtual reality memory game to examine how changes in the environment influence people’s remembering and forgetting of critical information.

**Topic 8 (Seminar: TUESDAY 8-10am; Tutorial: WEDNESDAY 8-10am)**  
Seminar leader: Dr Vanessa Bowden | Phone 6488 3639 | Email vanessa.bowden@uwa.edu.au  
Seminar hours: 10 x 2 hours; Tutorial hours: 8 x 2 hours; Testing hours: 4 hours/student

**Investigating the human factors associated with driver safety**  
Applied and human factors psychology uses an understanding of the principles of cognition and perception to improve safety and performance in a variety of real world tasks. In the transportation domain, this includes research which applies basic memory, attention, and perception principles to reducing unsafe driving behaviours (e.g. speeding and driver distraction). Across this topic we will investigate some of the human factors that relate to safe driving. In particular, we will focus on factors that contribute to driver distraction and those that have a detrimental effect on a driver’s ability to respond to unexpected hazards. In the seminar series, we will review a range of recent findings in the
driver safety literature and discuss the roles of psychological factors such as attention, workload, and situation awareness in driving. In the laboratory series, we will discuss, conduct, and interpret a driving simulator study which investigates how factors such as resource availability and individual differences contribute to driving performance.

**Topic 9 (Seminar: WEDNESDAY 4-6pm; Tutorial: THURSDAY 4-6pm)**
Seminar leader: Dr Luke Strickland | Phone 6488 1453 | luke.strickland@uwa.edu.au
Seminar hours: 10 x 2 hours; Tutorial hours: 8 x 2 hours; Testing hours: 10 hours/student

**Understanding prospective memory with experiments and models**
Oh no, you forgot to pick up milk on your way home from Uni! Now you’ll have to stop studying for your exams and run to the shops to get some. Prospective memory refers to the cognitive processes required to perform deferred future actions (e.g., pick up milk after Uni). In addition to being required for everyday living, prospective memory is critical in a range of safety critical occupations such as air traffic control and medical practice. Furthermore, prospective memory can be impaired in clinical populations, for whom it is often most needed (e.g., to remember to take medicine). In this seminar series, we will review different approaches to understanding prospective memory. We will explore formal cognitive models and the role they can play in understanding prospective memory and cognition more broadly. In the laboratory series, you will design an experiment to investigate prospective memory processes.

**Topic 10 (Seminar: WEDNESDAY 12-2pm; Tutorial: FRIDAY 8-10am)**
Seminar leader: Dr Linda Jeffrey | Phone 6488 3096 | linda.jeffery@uwa.edu.au
Seminar hours: Seminar hours: 10 x 2hr; Tutorial hours: 8 x 2hr; Testing hours: 6-7 hours/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 11 (Seminar: MONDAY 2-4pm; Tutorial: WEDNESDAY 2-4pm)
Seminar leader Dr: Diana Tan | Phone 6488 2282 | diana.tan@uwa.edu.au
Seminar hours: 10 x 2; Tutorial hours: 8 x 2; Testing hours: 10 hours/student;

First Impressions Associated with Autistic- and Schizotypy-Like Traits
The social model of disability proposes that challenges faced by individuals with disabilities are bi-directional; people with disabilities are disadvantaged not only because of the difficulties and differences that stem from their disabilities, but also because of societal barriers such as negative attitudes. Both individuals with autism and schizophrenia share many social behaviours and difficulties, and it has been argued that the social experiences of these individuals may be influenced by the first impressions formed by people around them. In this specialist research topic, we will explore whether autistic- and schizotypy-like traits are associated with poorer first impressions ratings based on their facial features and voice characteristics.

Topic 12 (Seminar: FRIDAY 12-2pm; Tutorial: FRIDAY 2-4pm)
Seminar leader: Dr Guy Curtis | Phone 6488 3356 | guy.curtis@uwa.edu.au
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 10 hours/student

Workplace Leadership and Workers’ Psychological Needs
We spend about a 3rd of our lives at work, thus, whether we have satisfying lives is influenced by whether we have satisfying work. A big contributor to people’s satisfaction at work is the leadership they experience from people who manage their organisations. A good boss can make work great and a bad boss can make it terrible. However, there are a lot of unanswered questions about how our working lives are affected by good and bad bosses – or, more precisely, effective and ineffective behaviours from organisational leaders. For example, it is known that workers who have bosses who display “transformational leadership” tend to experience more satisfaction of their needs for autonomy, competence, and relatedness at work. However, the impact of other forms of leadership, and leader behaviours, on psychological need satisfaction and psychological need frustration are not well understood. In particular, little is known about what contributes to the frustration of workers’ psychological needs for autonomy, competence, and relatedness at work because well-validated measures of psychological need frustration are relatively new.

Topic 13 (Seminar: MONDAY 4-6pm; Tutorial: THURSDAY 4-6pm)
Seminar leader: Dr Lynden Miles
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 10 hours/student

Seeing synchrony: Social perception and interpersonal coordination
Have you ever noticed that when you’re walking with a friend, often you begin to step in time with them? Psychologists have considered this as a process of entrainment – whereby people match their movements to an external rhythm. Interestingly, this can occur spontaneously, with little conscious effort or awareness. Moreover, it is well documented that when people move in time with each other (i.e., synchronously) positive social outcomes, including enhanced rapport, trust, social cognition and teamwork, are promoted.
On the other hand, less is known about how perceivers interpret such instances of behavioural coordination. Detecting the nature of interpersonal relationships (e.g., friends or strangers, competitors or co-operators) provides valuable information regarding intentions and future behaviour. It is important, therefore, to understand how social perceivers use information about people’s movements to make judgments about their social interactions. In this seminar series (10 x 2 hours), we will review some background literature concerning how and why people coordinate their behaviour, before considering the implications of this work for social perception. In the laboratories (8 x 2 hours), we will design an experimental study to explore whether relevant characteristics of the perceiver (e.g., attitudes, individual differences) shape judgments of interpersonal coordination and associated social outcomes. Students will be expected to recruit and test a minimum of 6 participants each for a procedure that will take approximately 20-30 minutes per participant.

Topic 14 (Seminar: MONDAY 12-2pm ; Tutorial: WEDNESDAY 12-2pm)
Seminar leader: Dr Julian Basanovic | Phone 6488 2690 | julian.basanovic@uwa.edu.au
Seminar hours: 10x2; Tutorial hours: 8x2; Testing hours: 5 hours/student

Cognition and Emotion
Over the past three decades, psychological theorists have placed increasing reliance on cognitive models of emotional vulnerability and dysfunction, to better understand, and develop more effective interventions for, emotional psychopathology. These cognitive models have been motivated by the clinical observation that individuals who suffer with emotional pathology often report distinctive patterns of negative thought, which plausibly could contribute to the onset and maintenance of their emotional symptoms. The genesis of this negative thought content is attributed to biases in selective information processing, which operate at a low level within the cognitive system and may not themselves be accessible to introspective awareness.

This specialist topic will explore how understanding of emotional vulnerability has been enhanced by research investigating biases in the way individual’s process emotional information in their environment. In the seminars you will be encouraged to critically evaluate the different types of experimental approaches used to assess and modify patterns of biases in information processing, and to evaluate the capacity of different models of emotional vulnerability to accommodate research findings. In the labs, research projects will likely focus on the development of novel experimental tasks designed to modify biased information processing, in ways that may beneficially influence emotional vulnerability.