PSYC3310 Topic Descriptions

Topic 1 (Seminar: Monday 1000 - 11:45; Tutorial: Wednesday 1400 – 1545)
Seminar leader: Dr Allison Fox | Phone 6488 3265 Email allison.fox@uwa.edu.au

Title: Performance Monitoring and Cognitive Control
Topic description: Higher-order cognitive processes falling under the umbrella term ‘executive functioning’ 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 functioning typically measure abilities such as hypothesis generation, planning, cognitive flexibility, susceptibility to distracting information and decision-making. During the seminar series, students will evaluate research highlighting the nature of executive dysfunction in neuropsychological conditions. 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: Monday 1200 - 1345; Tutorial: Tuesday 1200 – 1345)
Seminar leader Assoc/Prof Jason Bell | Phone 6488 3231 jason.bell@uwa.edu.au

Attentional Processing of Female Body Shapes
In general, individuals with eating disorder symptoms show attentional biases and/or approach and avoidance tendencies to body shape and weight-related information. It has been proposed that these cognitive biases may serve to maintain and/or exacerbate eating disorder symptoms, given that such preferential processing reinforces concerns regarding shape and weight. For example, research has shown selective attention towards negative shape stimuli (e.g., word stimuli such as ‘fat’ or negative shape pictures such as large thighs) in individuals with high levels of eating disorder symptoms. In this course we aim to gain a better understanding of how these cognitive biases differ in healthy individuals, by investigating attentional processing towards female body shapes in healthy young adult females. Example projects to be run by students in this course include: 1) examining attentional biases to thin versus obese female body shapes; 2) exploring approach and avoidance tendencies towards thin versus obese female body shapes; 3) modifying attentional biases/approach-avoidance tendencies towards female body shapes.
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.

The psychology of science
This specialist topic will look at the psychology of science: how people—especially scientists—reason about their world, and the cognitive and social factors that allow us to develop a shared understanding of natural phenomena. Topics to be covered include lab-based and field investigations of reasoning by scientists; how we understand complex dynamical systems; and the social and cultural aspects of science that have advanced—and potentially hindered—scientific understanding. Our experiment will look at how the metaphors and analogies we adopt for natural systems affect our reasoning about those systems. The experiment will also incorporate recent research methodologies that encourage transparency and collaboration, including pre-registration of the experiments.
**Topic 5 (Seminar: Wednesday 1000 – 1145; Tutorial: Friday 0900 – 1045)**
Seminar leader Assoc/Prof Troy Visser | Phone 6488 3635  troy.visser@uwa.edu.au

**The costs and benefits of paying attention**

Our world is composed of countless sights, sounds, smells, tastes and tactile sensations. The sheer volume of this sensory input is impossible to process completely. Thus, cognitive and neural mechanisms have evolved to allow us to select some information to guide behaviour, while discarding other information as irrelevant. These mechanisms, often referred to as “selective attention”, are critical to understanding everything from how we find our keys on the way out to work to the contents of conscious awareness. The seminar series in this specialist topic will examine different facets of our lives where attention plays a role, asking questions about how attention works, where it is relevant, and what happens when attention fails. In the laboratory classes, we will focus on research projects examining issues such as distraction, the impact of information about upcoming events on perception, and perception/cognition in laboratory and simulated real-world conditions.

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**Topic 6 (Seminar: Wednesday 1200 - 1345; Tutorial: Thursday 1000 – 1145)**
Seminar leaders Asst/Prof Lies Notebaert & Asst/Prof Partick Clarke | Phone 6488 8080  lies.notebaert@uwa.edu.au | Phone 6488 7341  patrick.clarke@uwa.edu.au

**Cognition & Emotion**

It is well recognised that emotions (and emotional disorders) are characterised by distinct patterns of thinking. Highly anxious people tend to be overly preoccupied with the prospect of potential danger, while depressed people tend to focus more than others on the negative aspects of themselves, loss, and failure. For a long time the accepted view was that such patterns of cognition were symptoms associated with these negative mood states. More recently, however, researchers and theorists have begun to believe that such biases in thinking may causally contribute to the experience of negative emotions such as anxiety and depression, and individual differences in the tendency to engage in these thinking styles may explain why some people are more vulnerable to experience these negative emotions and develop emotional disorders than others. This specialist topic will explore how our understanding of anxiety and emotional vulnerability more generally has been influenced by theories and research findings about the role of systematic biases in the way people process information in their environment. In the seminars you will be encouraged to critically evaluate different techniques designed to assess and modify patterns of biased cognition and examine the capacity of different theories of emotional vulnerability to accommodate recent research findings. In the labs, research projects will focus around developing and implementing experimental tasks which can measure and modify information processing biases, and examine the impact of such changes on people’s emotional experiences in stressful situations (i.e. their emotional vulnerability).
Cognition & Emotion

Over the past three decades, psychological theorists have placed increasing reliance on cognitive models of emotional vulnerability and dysfunction, to better understand, and more effectively treat, problematic levels of negative emotion. These models have been motivated by the clinical observation that individuals 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 that operate at a low level within the cognitive system, and may not themselves be accessible to introspective awareness. For example, cognitive models propose that anxiety-linked biases in selective attention and interpretation, which favor the processing of negative information, play an important causal role in susceptibility to experience unduly intense anxiety responses. This specialist topic will explore how understanding of emotional vulnerability has been enhanced by research investigating biases in the way individuals process 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.

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 everyday. 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 and in particular, the process of consolidating information into working memory.
**Topic 9 (Seminar: Thursday 1200 – 1345; Tutorial: Friday 1300 – 1445)**
Seminar leader Assoc/Prof Nicolas Fay | Phone 6488 2688 nicholas.fay@uwa.edu.au

**Culture Evolves**
Humans and non-human primates have culture (the passing on of traditions by learning from others). However, it’s been argued that only human culture evolves; it accumulates as information is passed from generation to generation, and builds on the achievements of prior generations (known as *cumulative cultural evolution*). In this special topic we’ll examine the mechanisms that drive cumulative cultural evolutions. Put another way, we’ll explore the factors that foster effective group decision-making. To do this we’ll use the experimental methods typical of psychology.

**Topic 10 (Seminar: Thursday 1400 – 1545; Tutorial: Friday 1500 – 1645)**
Seminar leader Assoc/Prof Nicolas Fay | Phone 6488 2688 nicholas.fay@uwa.edu.au

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**Topic 11 (Seminar: Thursday 1600 - 1745; Tutorial: Monday 1400 – 1545)**
Seminar leader Asst/Prof Mark Hurlstone | Phone 6488 2688 mark.hurlstone@uwa.edu.au

**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.
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Spare Classes – No topic or seminar leader allocated

Seminar: Monday 1400 - 1545; Tutorial: Wednesday 1400 – 1545

Seminar: Friday 1000 - 1145; Tutorial: Tuesday 1400 – 1545

Seminar: Friday 1400 - 1545; Tutorial: Thursday 1600 – 1745