Psychology 3 Group Project
2014-2015

Supervisors
Dr Bonnie Auyeung
Prof Tim Bates
Dr David Carmel
Dr Martin Corley
Prof Sergio Della Sala
Dr Morag Donaldson
Dr Alex Doumas
Dr. Marieke Gartner
Dr Elena Gherri
Dr Billy Lee
Dr Steve Loughnan
Dr Adam Moore
Dr René Mottus
Prof Martin Pickering
Dr Hugh Rabagliati
Dr Patrick Sturt
The project provides students with experience of group-based collaborative research work. Students will design and conduct a psychological study in an area relevant to the research interests of the staff member who supervises the project. Project results are submitted in the form of an APA-style journal article.

Projects provide an opportunity for students to engage in discussion with a staff member for approximately one hour each week (time, place and frequency of meetings are arranged with the project supervisor). These meetings are intended to function as a tutorial equivalent. Students will be required to spend approximately three hours per week across the semester for successful completion of data collection, analysis and write-up of the work.

The Group Project experience will differ from supervisor to supervisor. Some will require more work to develop the materials, others will require more work to collect the data, and still others will require the use of more sophisticated statistical techniques. This is what makes research interesting, and is not something that can be compared or controlled between different projects.

**Learning outcomes:**
1) Gain experience of collaborative team research.
2) Further develop existing skills in designing and conducting psychological research.
3) Further develop existing skills in analysis and writing up of research results.
4) Gain experience of working with electronic bibliographic databases.

**Resources**
The Psychology Library, University Main Library and Teaching Learning Assessment Centre in Moray House all have study skill materials available to give you guidance on conducting and writing up projects. The following references might be useful:


**Time management and group communication**
Supervisors schedule regular meetings with their group. It is however also important that groups communicate with each other e.g. by email, and meet at other times in order to progress the project rather than simply relying on meetings arranged with the project supervisor. There are bookable group study rooms available in the Main Library. It is important that the data-gathering phase of the project is completed well in advance of the hand-in deadline, allowing sufficient time for data entry, analysis, and writing the report.

**Project report**
Each student writes up an individual APA-style report of no more than 3000 words (excluding title page, references, figure/table legends, excerpts and abstract, the latter of which should be no more than 150 words), which should be typed or word-processed and should be in the form of a journal article. A stated word count should be included on the front cover.
Supervisors can provide help with general issues of report structure, but do not read drafts of student’s work.

Each student MUST produce their own independently written report. In particular, although project groups will generally wish to discuss data-analytic strategies, with guidance from the supervisor, all data analyses presented in a student’s project report must be performed independently.

Submission deadline and extensions
All projects must be submitted by 4pm on Thursday 19 March 2015. Failure to comply with the deadline without special circumstances will incur marks penalties as follows:

- 5% per day will be deducted up to 5 working days
- More than 5 working days late, a mark of zero will be given.

Where special circumstances are responsible for a loss of study time and for information on extensions, see p5 at the link provided.

http://www.ppls.ed.ac.uk/students/undergraduate/student_support.php

Submission
The Group Project must be word processed, and submitted in TWO FORMATS by the deadline.

1. TWO hard copies (type-written, double spaced, using 12 point fonts) You must attach a coversheet to each copy and complete one ‘declaration of own work’ form which can be found in the Resource Room on the ground floor of the Dugald Stewart Building. Please post in the Psychology Honours box beneath the counter at the Teaching Office, Room G.06, Dugald Stewart Building.

2. ONE electronic copy must also be submitted in *Turnitin via a link in Learn.

*Turnitin is plagiarism detection software. We may submit a random sample of the project write-ups to the software and we will use the software where the marker has a suspicion regarding plagiarism.
<table>
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<th>Student exam number: .................................</th>
<th>Mark per section (out of 20)</th>
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The overall mark is the sum of the section marks.

1. **Background and literature review**
   - Does this section give an appropriate background to the study? Is it critically argued, presenting important information about methodology and implications of previous studies? How compelling is the rationale for the present study: do the research questions and/or hypotheses follow logically from the literature reviewed?

2. **Methods**
   - Are the methods clearly justified? Are the methods original and/or an improvement on the norm? Is the section clearly laid out? Does it describe the selection and recruitment of subjects, the procedures and measures of the investigation, and the strategy for analysis (if the analysis strategy is not here, is it explained in the results section)? Are the planned analyses appropriate to the topic (i.e., will the analyses test the chosen hypotheses or research questions)?

3. **Results**
   - Does the presentation of results follow the analysis strategy? Are the results relevant to the hypotheses/research questions? Are the analyses conducted and presented competently, and are the results clearly and logically presented? Do the results strike a good balance between explaining and showing all the necessary and important findings (qualitative or quantitative) with the help of clear tables or figures, without including excess text, unnecessary analyses, or redundant tables or figures?

4. **Discussion**
   - Is the section more than just a re-statement of the results section? Is it clear that the implications of the findings are understood? Are the results discussed with reference to other studies in the field? Are the present study's strengths and weaknesses insightfully discussed? Are the conclusions justified, and any recommendations for future research sensible?

5. **Overall assessment: style of writing; independence of student**
   - Is the thesis well laid out? Are claims in the text supported by citations? Is the writing grammatical, with correct paragraph structure, complete sentences, proper spelling and punctuation? How well does the text flow? How original and insightful was the project and the write-up? How independent was this student? Is there one standard style of referencing followed, and is it applied consistently throughout? Is the reference section complete?

Total Mark out of 100

Marker’s signature…………………………………………………………………
1. Dr Bonnie Auyeung

Polycystic Ovary Syndrome (PCOS) in women with Autism and their mothers

Polycystic Ovary Syndrome (PCOS) is caused by high levels of testosterone. It is characterized by irregular menstrual cycles, delayed onset of puberty (menarche), and hirsutism (excess bodily hair).

A previous study found that women with Asperger Syndrome (AS) had elevated rates of PCOS, a result consistent with the idea that they may have elevated testosterone. That same study also found elevated rates of PCOS in mothers of children with autism or AS, possibly for genetic reasons, as an index of the broader autism phenotype. This project will retest this finding in a larger sample. This project would suit a pair of students working together. The data will come from the Autism Research Centre website at www.autismresearchcentre.com. This group will meet on Thursday 16 January at 11am.

References


Baron-Cohen, S, Lombardo, M, Auyeung, B, Ashwin, E, Chakrabarti, B, & Knickmeyer, R, (2011) Why are Autism Spectrum Conditions more prevalent in males? Public Library of Science Biology. 9, 1-10 And Supplementary Material to ‘Why are autism spectrum conditions more prevalent in males?’


2. Prof Tim Bates

Is money the root of all evil?

A widely publicized paper (Piffa et al. 2012) argued that wealth causes greed and selfishness, perhaps even psychopathy. In this project, we will test experiments from this paper, alongside alternative theories, such as that the methods used were flawed or that the causal direction may be reversed. You'll learn about measurement, theory, and the practice of science, in the context of a very practical and relevant topic. This group will meet on Tuesday 13 January at 12pm.

Reference


3. Dr David Carmel

The Cheerleader Effect: Are faces more attractive in a group than on their own?

A paper published last year (Walker & Vul, 2013) reported evidence showing that the answer to the above question is “yes”. The idea for the study was based on an observation from a popular American sit-com; as the authors put it: “In the seventh episode of the fourth season of How I Met Your Mother, the character Barney Stinson postulates the cheerleader effect: that people seem more attractive in a group than when considered individually... This effect is not simply that a member of the cheerleading squad, for instance, is more attractive than a person sitting alone in the bleachers (which could be due to factors such as objective attractiveness, altered demeanor, or social signaling), but rather that any given cheerleader will seem more attractive when seen as part of the squad than in isolation.” Walker and Vul (2013) ran a number of experiments comparing the attractiveness ratings given to the same people when they were shown on their own or in group
photos, and found that people tend to rate the same faces as more attractive when they are shown as part of a group. In the present project, we will replicate this study and see if the results hold with a different set of pictures; we will also extend the original study by looking at the effects of groups with a mixture of genders, and possibly the context (does the cheerleader effect work when the rating has potential consequences – for example, if you are looking at family photos vs pictures on a dating website?).

Reference

4. Dr Martin Corley
The Little Voice Inside Your Head
Most of us experience an internal voice when we read, think, or (plan to) speak. However, it’s not clear what that voice ‘sounds like’: is it just like speech, complete with phonetic detail, or is it more like ‘prototypical’ speech with some of the details left unspecified? In this project, we’ll use a speech-error elicitation paradigm in which people either speak aloud, or imagine speaking aloud, and report the errors they make. The trick will be to make people make enough errors to really work out what’s going on: Previous work has relied on tongue-twisters, but can we improve on that? This group will meet on Thursday 16 January at 2pm.

References

5. Prof. Sergio Della Sala
Is the Pen Mightier Than the Keyboard?
Is memory different for longhand and laptops typed material? How do these memories change over time? Does this difference, if any, depend upon the material to be remembered? Does typing use or skill matter? This is a relevant issue as the use of laptops and other devises to take notes is increasingly frequent, whereas writing by hand is simultaneously decreasing, particularly in classrooms and lectures. This project will try to address these questions experimentally by collecting data under different conditions of writing and remembering.

References

6. Dr Morag Donaldson
Learning to write Psychology essays
Psychology students’ conceptions of how to write a good psychology essay have been found to develop during their first year of study (McCune, 2004). In particular, students become increasingly aware of how to structure their arguments, to use evidence to support their arguments and to draw conclusions. This project could either investigate how students’ conceptions of essay writing develop further in later years of study or could evaluate the effectiveness of instruction strategies designed to improve students’ ability to construct written arguments (see Butler and Britt, 2011).

This group will meet on Thursday 15th January at 2.10pm (and at the same time in subsequent weeks).
7. Dr Alex Doumas

How do humans represent information, and how do we learn these representations?

I am interested in how humans learn relational concepts (like above, chases, or ameliorates) from real world examples, how we represent these concepts, and how we use these concepts in the service of solving problems. Understanding how humans represent and reason using relations is important because relational thinking—thinking that is constrained by the relational roles that objects play rather than simply the features of those objects—is a fundamental component of human cognition (e.g., Gentner, 2003; Holyoak, 2012). In fact, the ability to learn and reason about relations might be the primary difference between human and non-human animal cognition (Penn et al., 2008). Because relational thinking is ubiquitous in human cognition, my research has important implications within the broad field of cognitive science, as well as psychology, and education. In addition (as elaborated below), my work employs formal computational approaches and thus also has important implications for domains like information and computer science. This group will meet on Tuesday 14 January at 1pm.

There are two ongoing projects that students may become involved with.

Project 1

Two very important domains that require relational thinking are logic and mathematics. One current line of research involves using a computational architecture that learns relational concepts from real world examples (DORA; Doumas et al., 2008) to drive developing learning programs that can help children and adults learn logical rules and mathematical operations. Specifically, we use a kind of learning called progressive alignment (wherein training starts with highly similar inter-category comparisons and moves toward progressively more distant comparisons) to train children to reason about fractions and adults to reason using conditional syllogisms.

Project 2

One of the DORA (Doumas et al., 2008) model’s more counterintuitive predictions is that mapping co-occurring sets of single-place predicates should produce relations composed of those single-place predicate sets, even if the sets in question represent odd pairings. For example, if DORA compares bouncing (ball1) and spinning (triangle1) to bouncing (block1) and spinning (star1), then it will form an odd relation composed of these single-place predicates (e.g., bouncing-spinning (block1, star1)). I am currently testing this prediction in experiments with both adults and children.

References


8. Dr. Marieke Cassia Gartner  
**Post-conflict behaviour and personality in chimpanzees**  
Post-conflict behaviour is an evolved strategy for maintaining a group. Individual differences have been shown to influence such behaviour in chimpanzees, but questions related to the motivation behind who is interacting with whom during post-conflict behaviour, and the relationship between post-conflict behavior and personality, still exist. This project will assess post-conflict behaviour of chimpanzees at Edinburgh Zoo, and compare the results with existing personality data, to answer questions of motivation and to assess how post-conflict behaviour is related to personality. This group will meet on Wednesdays, starting on 15 January, at 3pm.  

**References**  

9. Dr. Elena Gherri  
**Space coding in touch**  
How do we code the location of a tactile stimulus that is presented to our body? While the primary somatosensory cortex encodes the location of a tactile stimulus on the skin surface independently of body location, higher level brain areas integrate this information with the location of the body in external space. Recent studies on tactile perception have shown that tactile stimuli are remapped from somatotopic to external space before they can be consciously perceived (Azanon & Soto-Faraco, 2008). However, little is known about the strength and characteristics of these reference frames. In this project, we will use the Simon task as a tool (Simon, 1969; for a recent review, see Hommel, 2010) to investigate the reference frames employed to encode tactile stimuli presented to our hands.  

**References**  

10. Dr Billy Lee  
**Exploring Lived Experience**  
The aim of the project will be to explore and to understand a particular lived experience chosen by the group. You will use Interpretative Phenomenological Analysis (IPA), a qualitative method that attempts to get close to what it is like to live through, or have lived through, a particular experience. As part of the project, you will learn to interview participants, transcribe audio recordings, analyse transcripts, and write up the themes. This method has been used to study experiences of health, sexuality, gender, and identity. IPA is inductive, rather than hypothesis driven. It avoids prior assumptions and illuminates human experiences as they are lived by people and the meanings they assign to their experiences. This group will meet on Tuesday 14 January at 11.30am.  

**References**  
11. Dr Steve Loughnan  
**How are women and men portrayed differently in the media?**

Even a cursory look at modern media reveals that men and women are presented differently. Often, women are portrayed in ways which emphasise their appearance and emotions, whereas men are portrayed in ways which emphasise their intelligence and competence. Sexual objectification is one domain of social psychology which has contributed to our understanding of gender and media. For over 30 years we have known that women tend to be more sexualized and presented with an emphasis on their bodies rather than their faces (Archer et al., 1983). This quantitative project will build from these findings and recent advances in sexual objectification theory (see Bernard et al., 2012; Loughnan et al., 2010; 2013) to test whether the way women and men are written about in the media also indicates their objectification. Do people not only focus on women’s bodies, but additionally minimise their psychological characteristics such as their thoughts, feelings, and intentions? To answer these questions we will develop a categorization and coding scheme and examine newspapers and magazines. Based on our findings, we may develop and run a simple experiment. This group will meet on Friday 16th of January, at 2pm.

**References**


12. Dr. Adam Moore  
**Does positive affect facilitate creative problem solving?**

There is recent evidence that priming positive moods/affect in people broadens the scope of attention (Rowe, Hirsh, & Anderson, 2007) and, thus, facilitates certain kinds of problem solving (cf. Isen, Daubman, & Nowicki, 1987). However, it is unknown if this effect is equally strong for all people, or if it benefits some more than others. In particular, those people who already have high working memory capacity may, paradoxically, not benefit from positive affect as much as those with lower working memory capacity.

In this study we'll investigate the positive affect effect and whether or not it interacts with individual differences in working memory capacity. This group will meet on Thursday, 15th January at 11am.

**Beginning References**


13. Dr René Möttus  
**Quantifying biases in personality ratings**

It is no secret that self-report ratings contain biases. For example, some people tend to use extreme response options rather than neutral ones. Likewise, there are individual differences in subjective reference standards for the trait being rated. Validity of self-report ratings and thereby the conclusions based on these ratings can be improved by identifying and quantifying such biases. For
example, one can rely on a technique called anchoring vignettes, whereby individuals rate hypothetical people described in short vignettes. Because the vignettes are the same for every rater, any variability in ratings must reflect biases. As a result, biases can be quantified and regularities in them such as age or gender differences may become identifiable. We have previously used this very straightforward technique in cross-cultural research, but it would also be interesting to examine differences in rating biases across demographic groups. For example, knowing possible age-differences in rating biases may help to better understand the observed developmental trends in self-reported personality trait scores. This project would involve writing a number of anchoring vignettes, administering them to people from different demographic backgrounds and quantifying biases (e.g., age-differences in mean vignette-ratings).

References

14. Prof Martin Pickering
Naming as joint action
Most studies of the psychology of language investigate a single person in isolation. But people of course use language to communicate with each other. To what extent do they construct shared representations? To investigate this, we shall conduct a picture-naming task in which people name pictures and ignore a distractor word that is written on the picture. Such words are particularly distracting if they are related in meaning to the picture. We investigate three conditions: a SOLO condition in which one person alternates between naming the pictures and naming the words; a NO condition, in which that person names the pictures and ignores the words; and a JOINT condition, in which one person names the pictures and another person names the words. We predict that naming related pictures will be difficult in the SOLO condition. If naming the pictures is also difficult in the JOINT condition, it suggests that speakers represent what they believe their partners to be doing as well as what they themselves are doing. We would use this as an argument to explain why people are so good at holding conversations. The project will involve conducting a straightforward laboratory experiment and analysing the results using ANOVA.

References

15. Dr Hugh Rabagliati
Is conscious awareness necessary for sentence comprehension?
Language and consciousness are inextricably linked; it is hard to imagine what it would be like to understand a sentence without being consciously aware of what we are hearing or reading.

We are going to test the degree to which conscious awareness is necessary for us to make sense of a sentence. In particular, we will be studying whether we need to be aware of a sentence in order to process its syntactic structure. To do this, we will be combining two older methods in a new way. To study the processing of syntax, we will be looking at syntactic priming, our tendency to say sentences use the same syntactic structure as other sentences that we have just heard or read. To study unconscious processing, we will use continuous flash suppression, a psychophysics technique for unconsciously “hiding” what one eye sees. This project is particularly suited for students interested in both language and the scientific study of awareness and consciousness. The project will meet on Friday the 16th Jan at 10am.
16. Dr Patrick Sturt

Processing of mathematical expressions
In daily life, human cognition often requires the processing of information that has a hierarchical structure. In this project, we will explore how people process hierarchically structured mathematical expressions, such as $2 + 3 \times 5$. Using a combination of reaction-time recording and response accuracy measurement, we will examine the extent to which people use preferences and strategies that are similar to those that are known to be used in the processing of natural language sentences. This group will meet on Wednesday 15 January at 10am.

References
Scheepers, C., and Sturt, P. (2013). Bi-directional syntactic priming across cognitive domains: From arithmetic to language and back. (Manuscript; available from Patrick Sturt)