Psychology 3 Group Project
2013-2014

Supervisors
Dr Bonnie Auyeung
Prof Elizabeth Austin
Ms Kasia Banas
Prof Holly Branigan
Dr David Carmel
Dr Martin Corley
Dr Alex Doumas
Dr Elena Gherri
Dr Peter Lamont
Dr Billy Lee
Dr Michelle Luciano
Dr Candice Morey
Dr Rene Mottus
Dr Antje Nuthmann
Dr Jools Simner
Dr Patrick Sturt
Dr Alex Weiss
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 20 March 2014. 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.
## Marking guidelines for Projects

<table>
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<th>Mark per section (out of 20)</th>
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### Student exam number: ……………………………..

### Supervisor: ……………………………………………

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?

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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 Elizabeth Austin

What are the characteristics of people who are highly boredom-prone?

Although it is possible to measure the trait of boredom-proneness (BP; Farmer & Sundberg, 1986), relatively little research has been done on characterising the ‘boredom-prone person’. This project will examine how BP is related to the five-factor model of personality, and also to other dispositional traits. The latter will be selected from those for which plausible hypotheses of associations with BP can be formulated (e.g. coping style, emotion regulation). The associations of BP with two forms of psychological well-being (hedonic, eudaimonic), will also be examined. (Note: Project meetings will be scheduled for 3pm on Thursdays, beginning in Week 1; please don’t sign up for this project if not available at this time.)

References

3. Ms Kasia Banas

Does wearing red make you more attractive?

Animal research suggests that females are attracted to red colour on potential male mates. Among humans, red is associated with love and passion, and it is also a symbol of high status. Are women more attracted to men who wear red? Does the feeling of attraction extend to overall liking? In this project, we will replicate, and possibly extend, Experiment 3 from Elliot et al (2010). The focus will be on material development and learning about good practice in experimental research. This group will meet on Tuesday 14 January at 12pm.
4. Prof Holly Branigan

How is the quality of narration in storytelling affected by interactional context?
Recent evidence suggests that language in dialogue is shaped not only by individual speakers' processes but also by joint "social" or collaborative processes. In particular, the 'speaker' and 'listener' do not act in fixed and separate roles – rather, they collaboratively shape the dialogue between them. Some evidence for this comes from Bavelas et al. (2000), who showed that people were poorer at telling stories if their listener was distracted, and so couldn't provide appropriate feedback. Bavelas et al. concluded that when people spontaneously tell stories, the narrative is the result of the integrated behaviours of both conversational partners.

In this study, we'll investigate whether the interactional context affects the way both speaker and listener work together to produce the narrative. The project will involve conducting a straightforward laboratory experiment in which pairs of participants will tell each other either real stories of their own experiences, or made-up stories about invented experiences. We will manipulate whether the interaction is inherently collaborative or not, and measure the extent to which this affects the way both conversational partners contribute to the quality of the story.

The project will use similar measures as the one employed in Bavelas et al. (2000). ANOVA will be used for the analysis of results.

This group will meet on Tuesday 14 January at 12pm.

References

5. Dr David Carmel

Does the messiness of a room really influence conformity and creativity?
Earlier this year, a paper in the journal Psychological Science (Vohs, Redden & Rahinel, 2013) reported a series of experiments that put participants in either tidy or messy rooms. The findings demonstrated that a tidy environment increases virtuous and conventional behaviour, whereas a messy environment can improve creativity. The study attracted a lot of attention in the media due to its clear real-world implications; it also raised a lot of criticism from other researchers, who found numerous flaws in the experiments and the way they were reported. Overall, people in the field have been saying "I'll believe it when (and if) I see it." So as replication is the backbone of science, we're going to see whether we see it. In this project, we will combine the first two experiments reported by Vohs et al into a single experiment, and see whether a tidy room indeed increases charitable giving and healthy food choices, whereas a messy room makes people come up with better creative ideas. This group will meet on Tuesday 14 January at 4.30pm.

Reference
6. 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

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. 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. This group will meet on Wednesday 15 January at 12pm.

**References**


9. Dr Peter Lamont  
**How to make Psychology scientific?**

Philosophers of science have struggled to find criteria that distinguish science from non-science. Nevertheless, academic psychologists have always described themselves as scientific. Given the problematic scientific status of psychology, how have they done this? This project will use discourse analysis to examine how psychologists have constructed psychology’s scientificity. This group will meet on Wednesday 15 January at 12pm.

**References**


10. Dr Bill 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 Michelle Luciano  
Belief in the Supernatural: personality trait or independent construct? 
A Supernatural Belief Scale (Jong et al, 2013) was recently developed as an adjunct to measures of religiosity – for which it was shown to have convergent validity. Further support for its good psychometric properties and purposefulness were demonstrated by its relationship with death anxiety, which was moderated by religious identity. But could it be that supernatural belief reflects stable personality traits? This study will investigate the relationship between supernatural belief and personality, including a test for independence of the constructs by measuring their unique effects (if any) on a related outcome variable, subjective well-being. This group will meet on Monday 13 January at 11am.  

Useful References:  

12. Dr Candice Morey  
Comparing proactive interference for visual-spatial and verbal stimuli  
Proactive interference occurs when information one has previously learned impairs learning of new information. Classic evidence shows that memory grows progressively worse after several trials of learning information from the one set, and suddenly improves when memoranda from a new set are presented instead (Wickens, Born, & Allen, 1963). This sharp improvement is known as “release” from interference. Recently, evidence for proactive interference has been reported for abstract visual information (e.g., Hartshorne, 2008; Shipstead & Engle, 2013), but this is currently a matter of some controversy (see Lin & Luck, 2012). One reason observing proactive interference for abstract visual images is controversial is that there is little evidence that briefly-remembered visual information is committed to long-term memory (Logie, Brockmole, & Vandebroucke, 2009), and long-term learning is believed to be necessary for proactive interference to occur. We will try to untangle this by carrying out two empirical behavioural studies, in which we measure accuracy on recognition memory tests, and compare the build-up and release of proactive interference that occurs with sequential-verbal stimuli with any proactive interference that occurs with visual-spatial stimuli. Students will assist with the design of experiments (with access to pilot data already collected to help with planning), collect, and analyze the new data. This group will meet on Tuesday 14 January at 11am.  

References  

13. Dr Rene Mottus

Clustering of personality indicators in people
Behaviours, thoughts and feelings are considered indicators of individual differences in personality. Traits such as the Big Five are evidenced by the indicators clustering in a fairly replicable manner. A group project could test whether the trait indicators that cluster as the Big Five at the level of individual differences also co-vary within people over time. That is, it could be studied whether the indicators of the same Big Five traits change in the same way from day to day. Some situational features could also be included in the study to see if the indicators of the same traits correlate with situational features in similar ways. There will be some overlap with Fleeson (2007) and Borkenau & Ostendorf (1998).

References

14. Dr Antje Nuthmann

The Edinburgh Sentence Corpus – A Predictability Norming Study
In this project we will collect predictability norms for 150 single sentences forming the Edinburgh Sentence Corpus (ESC) to study eye-movement control during reading. A word is highly predictable when the likelihood that that word will follow a given context fragment is high. Thus, predictability is often defined in terms of “contextual constraint.” When a context is highly constraining, that is, when a target word is highly constrained, only a very limited number of words are likely to complete the context fragment; when the context is low constraining, many words will fit the fragment. For example, stamp is highly predictable in the (high-constraining) context, He mailed the letter without a ___, but low predictable in the (low-constraining) context He saw a beautiful ___. For each word in the ESC, we will generate estimates of predictability by the use of a modified Cloze task (see, e.g., Kliegl et al., 2004). In the final step, using existing eye fixation data we investigate whether word predictability predicts fixation times on words, a common finding (e.g., Kliegl et al., 2004). Depending on students’ skills and IT support, predictability data will be collected either using the online application LimeSurvey, or a combination of Powerpoint and paper and pencil. This group will meet on Tuesday 14 January at 4pm.

Reference

15. Dr Jools Simner

Sensory integration and Cross-modality
All people share preferences for the mapping of stimuli across the senses. For example, most people agree that high pitch sounds ‘fit better’ with lighter rather than darker colours. This type of sensory mapping is experienced explicitly in synaesthetes (e.g., sounds may be seen in colour, smells may be felt as shapes). Synaesthesia is an inherited condition and brain imaging provides direct evidence of increased structural connectivity in the brains of synaesthetes. It is likely that synaesthetes and non-synaesthetes experience cross-modality via qualitatively similar, but quantitatively different mechanisms. This project will explore issues in cross-sensory integration seeking to better understand the types of mappings made across the senses. This group will meet on Thursday 16 January at 10am.

References
www.syn.psy.ed.ac.uk
http://www.sussex.ac.uk/synaesthesia/

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)
17. Dr Alex Weiss  
The Five-Factor Model of Personality and ??????  
For this group project students will examine the association between human or animal personality and some outcome of their devising. This could mean the association between personality and another psychological construct or between personality and performance on some experimental task. The job of the students in this group project will be to come up with a hypotheses concerning the association and test this by relating a measure of the Five-Factor model to said outcome. This group will meet on Monday 13 January at 4pm.

References