

2009:P4 –Interrupted Reading & Word Length

- Supervisor:** Dr Liam Hendry
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- Research Purpose:** This project examines the operation of short-term memory in an interrupted reading (Eye-Voice Span) task. Participants will need to read aloud a series of text passages which will be removed unexpectedly from view. Previous versions of this experiment have revealed a large difference in recall depending upon the length of the words in the sentences following the cut-points. The boundary conditions of word length effects in the interrupted reading task will be explored by operationalising word length as a continuous variable rather than a dichotomy.
- Research Description:** Participants will be required to read aloud a series of text passages, which will disappear from their screens at a predetermined point. They will need to continue reading (to the best of their abilities) as far beyond the “cut-point” as possible. Output will be recorded as sound files for further analysis. The effect of different word lengths will be examined as a continuum, rather than as the difference between “long” and “short” words.
- Participants:** An absolute minimum of 20 participants will be needed. Participants will ideally be first year psychology students from the experimental pool, who have English as their first language and are good readers. Community volunteers could be used if necessary.
All data will have to be collected by the end of Semester 1 2009.
- Methodology:** Laboratory based study involving variations on the interrupted reading and word length task.
Some materials redevelopment using existing materials will be required in the early stages of the project.
On-campus data collection in W4 labs in individual sessions of less than an hour’s duration. Students will need to analyse output (sound) files after the experiments, so unimpaired vision and hearing are essential.
- Data Analysis:** Quantitative analysis involving t-tests, ANOVA, and correlation. Follow up variations in analyses may be required depending upon initial outcomes.
Students will conduct all analyses (at undergraduate level of knowledge) themselves. Some data screening may be necessary.
- Student friendliness:** This project is suitable for on campus students. It is possible that it could be carried out by an external student, subject to discussions with supervisor beforehand.
This project will involve individual testing of participants in a laboratory setting.
Supervision expectations would vary from weekly to fortnightly, depending upon stage of project, usually in person (but by phone for externals).
- Further reading:** Baddeley, A. D. (2003). Working memory: Looking back and looking forward. *Nature Reviews Neuroscience*, 4, 829-839.
Brown, G. D. A., & Hulme, C. (1995). Modelling item length

effects in memory span: No rehearsal needed? *Journal of Memory and Language*, 34, 594-621.

Cowan, N. (2001). The magical number 4 in short-term memory: A reconsideration of mental storage capacity. *Behavioural and Brain Sciences*, 24, 87-185.

Neath, I., & Nairne, J. S. (1995). Word-length effects in immediate memory: Overwriting trace decay theory. *Psychonomic Bulletin & Review*, 2, 429-441.

Expected research outcomes: Possible APS Conference Presentation 2009/2010; Possible Journal Article either jointly or multiple authors.

Ethics:

- Ethical approval will be sought by supervisor; or
- Ethics approved – number

Resources:

- Project able to be funded within \$150 departmental limit
- Project not able to be funded within \$150 departmental limit – additional funds will come from:

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