Psychology of Reading
Psychology 308
Spring, 2005

Instructor: Professor D. Besner
Office: PAS 4034
If you want to set up a meeting or ask questions outside of class, then I welcome you
e-mailing me (dbesner@watarts.uwaterloo.ca) or coming to my office (I'm happy to see
students in my office at most times, or, failing that, to set up a time to meet). You can
always email me with questions (including most nights and weekends). I try and answer
all questions within several hours.

There is no TA for the course, but my graduate student, Evan Risko, is very helpful.
office: PAS 2251 (second floor, opposite elevator; go through glass door, first office on
left) e-mail: **efrisko@watarts.uwaterloo.ca**

Meet Times:2:30-4:00 Tuesday/Thursday
Location: PAS 2083

Course Objectives
The papers chosen for this course track the topic from a variety of perspectives (we start
with investigations of patients with acquired brain damage, then move on to experiments
on intact skilled readers, and work involving the computer simulation approach)

The goals are to get you to better appreciate how to:
> (1) read a paper in the content area of cognitive processes that underly visual
>   word recognition
> (2) better understand design problems, statistical issues, and underlying
>   assumptions often not made explicit in the literature
> (3) tell people about what you have read in a way that is clear and
>   concise.
> (4) Finally, get you to better understand and appreciate some of what it is that
>   cognitive psychologists do, and to understand that, with training and guidance, it
>   is possible to do high quality research. To make that point clearly, some of the
>   published (or in press) papers you read have been authored by former and current
>   graduate students at the University of Waterloo.
>
> As a general comment I'm not very interested in doing a survey course on
> "reading". There is just too much to cover in too short a time, and the result is that
> you get a superficial treatment of too many issues. I've therefore picked a
> relatively small number of papers in an attempt at a more in depth understanding
> of fewer issues.

Book for the course: None. In my view most texts are not helpful in large part because they sanitize the messy process of formulating an idea, turning it into an experiment, and then dealing with the resulting data both conceptually and statistically. Better to struggle with primary references and see whether you can get a sense of how issues evolve over time. We will therefore read a set of papers from the journals (and some chapters). A detailed reading list will be provided shortly.

Course Components and Grading Scheme

1. **Presentation(s) and Participation (25% overall. Roughly half for the presentation and half for participation. Strong performance in one area can trade for less strong performance in the other).**

My experience is that standard "lecturing" leads to a certain amount of passivity on the part of the class, a result that is counter-productive. Having students present papers produces considerably more "learning" but is also associated with a certain amount of anxiety on the student's part. I mention this only to say that I'm sensitive to this issue. Trust me, it is useful to struggle with a paper in the effort to understand it so as to be able to convey to others what it is about.

Each student will present at least one such article to the class. I would prefere that you read the paper and then meet with me before the presentation in order to make sure you understand the paper, and to briefly go over what you will say (and not say). Having a prepared outline for our meeting would be helpful. You are expected to give a considerable amount of care and attention to the preparation for your presentation. It must be concise, but you are the resource expert for the paper that you are presenting. In other words, you should have a lot of the details of the paper at your fingertips (i.e., in memory) in the event that a question is asked (e.g., how many subjects were tested?; were the conditions blocked or randomized?; was factor Y significant in the analysis as a main effect?; was there feedback after every trial? etc). **However, please avoid going into too much detail during your presentation**. There should be enough detail that your audience can understand:

      (1) what question was investigated
      (2) what the experiment consisted of (i.e., explain what was actually manipulated, and how the experiment was done)
      (3) what the predictions were
      (4) what the data are (that is please SHOW us the data)
      (5) what the analysis of this data said (*without* specifying the size of the F, or the degrees of freedom)
      (4) how the data fit or do not fit with the theoretical hypotheses.

Please prepare a handout for your classmates that summarizes your presentaton. Copies of your overhead are sufficient, or you might want to have a version that you can send (electronically) to other students.

Participation
By participation I mean being responsive to what is going on in the class. For example, listening attentively when students are presenting papers such that you can answer questions about what they are saying. **Be prepared to answer questions in class with respect to the ongoing discussion.**

2. Quizzes (25% each)
There will be **three** short tests, mostly multiple choice (typically 25 questions) , but I may include a few short answer questions. These quizzes are given in class time. The tests are not cummulative. Two practice tests from years past are attached so that you can get a feel for the kind of questions that have been asked. These quizzes will take place on **May 31, 2005** (test #1), **June 30, 2005** (test #2) and **July 28**, **2005** (test #3). These quizzes will cover the reading material, and points that come out in class discussion. It is therefore important that you stay focused during class, and track the presentations and discussion.

Note: there is no final exam for this course.

<u>**Tips for Your Presentations:**</u>
1. Use overheads (or powerpoint).
2. Use 24 point font on your overheads. (when its too small no one can see it).
3. Don't use too many words. Use a point format in which you have
   a word or two that references the issue that you will be discussing (rule: less = more).
4. Don't gesture to the overhead as a whole when you are discussing data that
   are on it. Point to the data that you are describing with your finger (let your
   fingers do the walking).
5. Please make sure you SHOW the data, either in terms of a graph or table.
6. Speak slowly (not too slowly) and clearly, but loudly enough that you can be heard!
7. Make eye contact with your audience (i.e., don't talk to the blackboard or
   turn your body away from your audience).
8. Don't obscure the overheads by standing in front of them
9. Know your material. Practice with a friend before a presentation, and ask for
   constructive criticism

<u>**Advice on how to read a paper and study for a test**</u> **[students tell me at the end of the course that they wish they had listened to this advice]**
Write the following information on one or more 3 x 5 file cards:
1. Name of the author and title of the paper.
2. What is the theoretical *question* being asked and how is it *operationalized*?
3. What was actually done (i.e., What was the *task*?; What was the dependent
   measure? Was there a special population of subjects?).
4. What were the results? 5. What were the conclusions? Critically, how do they relate to
the original question?

Academic Offences

"Note on avoidance of academic offenses: All students registered in the courses of the Faculty of Arts are expected to know what constitutes an academic offense, to avoid committing academic offenses, and to take responsibility for their academic actions. When the commission of an offense is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offenses and types of penalties, students are directed to consult the summary of Policy #71 (Student Academic Discipline) which is supplied in the Undergraduate Calendar (p.1:11). If you need help in learning how to avoid offenses such as plagiarism, cheating, and double submission, or if you need clarification of aspects of the discipline policy, ask your course instructor for guidance. Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean."

Practice Quiz (these are some questions that I have used in the past. This does not mean that they will appear in any of the quizzes you get, but then again some questions may be used).

Instructions:

Clearly circle the best answer for each question. There is no penalty for guessing.

2. According to Coltheart (1981), the regularization errors (e.g., pronouncing PINT such that it rhymes with MINT) seen in surface dyslexics is due to damage to:
a) the abstract letter identification system
b) the non-lexical phonological recoding route
c) the word recognition (lexical) route
d) none of the above

3. Stolz & Merikle (2000) observed that conscious influences decrease over time whereas unconscious influences increase over time. This finding could be due to:
a) differences in how subjects placed their criterion
b) a loss of episodic detail
c) improperly establishing the subjective threshold
d) all of the above

4. Cognitive psychologists doing RT experiments typically assume that the underlying psychological scale is:
a) equal interval
b) non-linear
c) ordinal

5. According to Ramachandran's (1995) theoretical analysis of patients with parietal lobe lesions, vestibular stimulation of their _____ results in a(n) _____ of their paralysis.
a) confabulator; acknowledgement
b) confabulator; denial
c) anomaly detector; acknowledgement
d) anomaly detector; denial

6. Borowsky & Besner (1991) found that context and degradation interacted when the unrelated context was an unrelated word, but did not interact when the unrelated context was asterisks. This demonstrated the importance of:
a) replicability
b) speed-accuracy tradeoffs
c) baselines
d) asymmetric transfer

7. Dr. Strangelove wants to assess the presence of a 3-way interaction in his experiment. He needs a minimum of ____ factors in his experiment with a minimum of ___ levels of each factor.
a) 2; 2
b) 2; 3
c) 3; 2
d) 3; 3

8. Johnston et al. (1995) demonstrated a typical PRP effect where Task 2 RTs _____ as SOA between Task 1 and Task 2 decreased.
a) increased
b) decreased
c) remained constant
d) bi-modalized

9. A false alarm is analogous to _____ as a miss is analogous to _____ .
a) sensitivity; bias
b) bias; sensitivity
c) a Type I error; a Type II error
d) a Type II error; a Type I error

10. In Merikle et al. (1995), subjects given exclusion instructions who did use previously studied items to complete word stems had:
a) conscious processes dominating performance
b) unconscious processes dominating performance
c) retroactive interference preventing short-term consolidation
d) proactive interference preventing short-term consolidation
e) none of the above

11. Pashler (1984) argued against _____ selection, given his finding that the effects of stimulus quality and probe onset _____.
a) early; interacted
b) early; were additive factors
c) late; interacted
d) late; were additive factors

12. Counterbalancing will prevent asymmetrical transfer effects.
a) true
b) false

13. Given the following payoff matrix, the observer should adopt a:

HIT $3	MISS -$3
FALSE ALARM -$10	CORRECT REJECTION $10

a) strict criterion
b) lax criterion
c) neutral criterion
d) moving baseline criterion

14. The effects of A and B produce the following pattern of data: There is a larger effect of B at Level 1 of A than at Level 2 of A. Thus, A and B:
a) are additive factors
b) interact
c) are mutually exclusive
d) are independent

15. How many cells are in a 2 x 2 x 3 within-subjects design?
a) 4
b) 7
c) 8
d) 12

a)

16. When computing an item analysis, one should z-score the data for each subject. The reason for doing this is to:
a) remove outliers
b) counterbalance for items
c) increase the df for the error term
d) reduce the effects of between-subjects variance

17. The intent of an item analysis is to inquire whether:
a) your effect generalizes to a new sample of subjects
b) your effect generalizes to a new sample of items
c) both a) and b)

d) none of the above

18. Coltheart & Freeman (1974) showed that case alternation impaired the identification of high frequency words more than low frequency words.
a) true
b) false

18. Fera et al. (1994) argued that the evidence against late selection was weak, given that SOA and stimulus quality were additive only when using _____ font and only when that font was presented _____ .
a) a pixel; first
b) a pixel; second
c) their; first
d) their; second

19. Assuming an additive stages model, what is the minimum number of separate stages one would have to infer if all the 2-way interactions in a 2 x 2 x 2 within-subjects experiment are significant and the 3-way interaction is not significant?
a) 1
b) 2
c) 3
d) 4

20. Here are some hypothetical mean RT and % Error data for two conditions:

	RT (ms)	Error (%)
Condition 1	400	2.0
Condition 2	350	4.6

Which condition is more difficult?
a) Condition 1
b) Condition 2
c) inconclusive

21. Imagine a 3 x 4 within-subjects factorial experiment. If factor A has 3 levels, how many levels do you have to collapse across in order to decide whether there is a main effect of B?
a) 3
b) 4
c) 7
d) 12

Here are some hypothetical data from a 2 x 2 within-subjects design. Use this data to answer the questions below.

	A1	A2
B1	50	100
B2	200	300

22. What is the size of the main effect of A?
a) 50
b) 75
c) 100
d) 150
e) 162.5
f) 175
g) there is no main effect of A

23. What is the size of the main effect of B?
a) 50
b) 75
c) 100
d) 150
e) 162.5
f) 175
g) there is no main effect of B

24. What is the size of the A x B interaction?
a) 50
b) 75
c) 100
d) 150
e) 162.5
f) 175
g) there is no A x B interaction

25. A critical assumption of Sternberg's additive stages model is that:
a) there is interactive activation between stages
b) stages are serially organized and cascaded
c) stages are serially organized and discrete
d) none of the above

26. Patient A can only hear music by Pink Floyd whereas Patient B can only hear music
not by Pink Floyd This indicates that the mechanism used for hearing music by Pink
Floyd and the mechanism used for hearing music by Pink Floyd are:
a) serially organized
b) not serially organized
c) dependent
d) independent
e) both a) and d)
f) both b) and d)

27. It was noted (in class) that individual patient data is important relative to group
patient data because:
a) individual patient data provide more power to detect an effect
b) averaging across groups of patients can yield a pattern seen in no individual patient
c) individual patient data is more generalizable
d) all of the above