Banff Annual Seminar In Cognitive Science

Inns of Banff • May 4-5, 2012

Friday May 4

5:00 pm Welcome and opening remarks

Please register with Peter Dixon if you have not already done so ($70 for faculty, $25 for students and postdoctoral fellows).

5:15 pm **Tim McNamara** (Vanderbilt University), *Human Spatial Memory and Navigation*

My presentation will summarize several lines of research aimed at determining how the spatial structure of the environment is represented in memory, how people use this knowledge to find their way in the world, and how we stay oriented during locomotion. This research indicates that the human spatial memory and navigation system is composed of three principal subsystems: The egocentric subsystem computes and represents self-to-object spatial relations using various egocentric reference systems and supports steering and path integration; the viewpoint-dependent subsystem stores visual-spatial "snapshots" of landmarks and scenes using egocentric reference systems and supports place recognition; and the environmental subsystem represents object-to-object spatial relations using intrinsic reference systems, and is used for wayfinding and locating unseen goals. Time permitting, recent findings on the possible role of grid cells in human path integration will be presented.

6:45 pm Dinner break

8:30 pm Reception and poster session (Sponsored by the Canadian Journal of Experimental Psychology and the Canadian Psychological Association)

10:30 pm Adjourn

Saturday May 5

8:30 am Coffee, tea, juice, pastries

9:00 am **Glen Bodner** (University of Calgary), *Memory Recruitment: A Backwards Idea about Masked Priming*

Accounts of priming typically assume that primes preactivate existing representations, thus proactively altering target processing. In contrast, Mike Masson and I have put forward a memory-recruitment account of priming (e.g., Bodner & Masson, 1997; Masson & Bodner, 2003) that suggests the processing applied to primes, even masked primes, is encoded into a memory resource, which in turn is retrospectively recruited to contribute to target processing if the context and task conditions support this recruitment. My talk will emphasize two lines of research that have attempted to contrast these prospective and retrospective accounts. The first line examines whether nonwords, which do not have existing representations, show masked priming. The second line examines whether masked priming is sensitive to context and task factors in ways that contradict prospective accounts. After summarizing the successes and failures of our backwards account, I will provide suggestions for moving accounts of priming forward.

10:30 am Coffee, tea, juice

11:00 am **Todd Handy** (University of British Columbia), *Mind Wandering and the Hierarchical Control of Neurocognitive Function*

Mind wandering refers to the natural tendency of our thoughts to transiently drift off-task despite no apparent conscious intent to do so. Over the last several years, there has been intense interest in understanding both the qualitative content of off-task thoughts during periods of mind wandering, as well as the extent to which mind wandering states are associated with activation of the so-called "default" network in cortex. In my talk I will focus on a third, less-appreciated aspect of mind wandering, and in particular, the superordinate controlling influence it has on a wide spectrum of neurocognitive functions. Through a series of ERP and behavioral studies my colleagues and I have been conducting, we have found that mind wandering significantly attenuates the sensory and cognitive processing of external inputs, the orienting of selective attention, the depth of affective processing, and the efficacy of on-line motor control and adaptive performance monitoring. Moreover, we appear to mind wander less as we age, which we suggest may be a compensatory response to help combat age-related declines in neurocognitive function. Collectively, our findings support hierarchical models of cortical control stemming from systems theory, which stipulates that the functional stability of complex systems is enhanced by having multiple controlling inputs operating at different scales of time.

12:30 pm Lunch break

2:00 pm **Sukhvinder S. Obhi** (Wilfrid Laurier University), *Exploring the Resonant Brain: The Effects of Social Context on Mirroring*

It is well known that motor areas of an observer's brain become active when watching another person acting (i.e., mirroring). However, Cognitive Neuroscience has most often examined such 'motor resonance' in socially impoverished contexts. Such studies have provided detailed information about basic processes, but have revealed rather less about how such processes are modulated by social context. I will present data from a series of studies on the effects of social factors and individual differences on basic motor resonance during action observation. I will also report data that highlights the link between motor resonance as studied by cognitive neuroscientists in highly constrained lab environments, and naturalistic social phenomena such as non-conscious mimicry of an interaction partner. My hope is to convey the utility of combining cognitive neuroscience techniques with social psychological approaches, to increase the scope of questions that can be addressed.

3:30 pm Coffee, tea, juice, cake

4:00 PM **Jeremy Caplan** (University of Alberta), *Memory for Order*

Much of what we need to remember has sequential structure that provides as much meaning as the constituent items (e.g., the alphabet, a phone number, dog house versus house dog). Unsurprisingly, then, memory for order has been extensively studied with experimental behavioural and cognitive modeling approaches, and has been recently accelerating in cognitive neuroscience. Rather than lobby for a particular model, I will examine specific assumptions that subsets of order-memory models share, and present behavioural and brain-activity evidence that test these assumptions. These include the relationship between associations and serial list memory (is a list built from associations, or are associations stored like a list?), mechanisms of serial-order judgements and how (and how much) order we remember

5:30 pm Closing remarks

6:00 pm Reception and poster session

8:00 pm Adjourn

Posters Friday 8:30-10:30

1. *Apara Ranjan, Liane Gabora, Brian O'Connor (University of British Columbia), The recognizability of individual creative style within and across the domains of art and writing*
2. *Ron Borowsky, Jacqueline Cummine, Gordon Sarty, Naila Kuhlmann, Carrie Esopenko, Layla Gould (University of Saskatchewan), Ventral and dorsal activation for nouns and verbs*
3. *Layla Gould, Ron Borowsky, Jacqueline Cummine (University of Saskatchewan), Parallel versus cascaded processing in reading: Additive and interactive effects in word naming*
4. *Mariapaola Barbato (University of Calgary), Maria Casagrande (Sapienza - University of Rome), Inhibition of return in 3D space: The influence of the type of task*
5. *Lauren Barrett, Michael Woloszyn (Thompson Rivers University), The differential effects of single and repeated testing procedures in the DRM paradigm*
6. *Cody Tousignant (Flinders University), Glen E. Bodner, Michelle M. Arnold, Amanda Fernandez, Sara D. Davis (University of Calgary), Guess what? Adding a guess option eliminates test-list context effects on recognition*
7. *Allison Myggland, Trevor Hamilton, Melike Schalomon (Grant MacEwan University), Evidence of episodic-like memory in zebrafish*
8. *Kelsey Clarke, Catherine N. M. Ortner (Thompson Rivers University), Effects of mindfulness instruction variation on anxiety and the role of state and trait mindfulness*
9. *Alexandra Kent, Aimee Skye,Karen Buro (Grant MacEwan University), Play to win! Does induced motivational state influence gambling behaviour?*
10. *Ellen Klaver, Russ Powell (Grant MacEwan University), "Eat not to dullness": The association between overeating and concentration*
11. *Nathan Beaucage, Tara Vongpaisal (Grant MacEwan University), Multisensory influence on childhood executive function*
12. *Theresa Kisko, Scott Allen (University of Lethbridge), Visualizing memory*
13. *Carrie Leonard, Bob Uttl (Mount Royal University), Delay and instruction specificity effects on prospective memory*
14. *Monica de Koning, Catherine N. M. Ortner (Thompson Rivers University), Could you remember "truth" if you did not hear it?: The effects of emotion regulation on memory for abstract words*
15. *Anna J. Maslany, Jamie I. D. Campbell (University of Saskatchewan), Hyper-retrieval-induced forgetting in arithmetic facts?*
16. *Brea Chouinard, Yvonne Chen, Esther Kim, Jacqueline Cummine (University of Alberta), Investigating auditory comprehension using a computerized training task*
17. *Christine Fandrick, Tara Vongpaisal (Grant MacEwan University), I've got a feeling: Improving emotion recognition in children with autism spectrum disorder through music and movement training*
18. *Bob Uttl, Carrie Leonard, Joanna McDouall (Mount Royal University), Continuous measures of prospective memory*
19. *Mark J. Huff, Glen E. Bodner (University of Calgary), All tasks are not created equal: Type of processing within an encoding task modulates the DRM illusion, but not monitoring*
20. *Shelley Gross, John R. Vokey (University of Lethbridge), Implicit learning of artistic style*
21. *Adam Holcombe, Trevor Hamilton, Melike Schalomon, Travis Johnston, Zacninte May (Grant MacEwan University), Novel object recognition in zebrafish*
22. *Yang S. Liu, , Jeremy B. Caplan (University of Alberta), Contextual versus sequential-search models of judgements of relative order*
23. *Michael Parnes, Alinda Friedman (University of Alberta), The effect of instructions on spatial memory in virtual environment learners*

Posters Saturday 6:00-8:00

24. *Giancarlo Diano, Scott W. Allen (University of Lethbridge), Are you looking to what I am saying?*
25. *Jacqueline Cummine (University of Alberta), Layla Gould (University of Saskatchewan), Crystal Zhou, Stan Hyrbouski, Zohaib Siddiqi, Brea Chouinard (University of Alberta), Ron Borowsky (University of Saskatchewan), Strategic manipulation of reliance on the ventral-lexical reading stream: Evidence from fMRI and RT*
26. *Rachel Kwan, Penny Pexman (University of Calgary), Embodied effects in verb processing*
27. *Kaitlyn Fierro, Michaela Cullington, Amanda Cuth (Marywood University), The effects of reading goals on a cued recall task*
28. *Carmela A. White, Bob Uttl, Carrie A. Leonard (Mount Royal University), Measurement of memory: One step forward two steps back*
29. *Alexander Taikh, Glen E. Bodner (University of Calgary), The production effect in recognition: Distinctiveness or lazy reading?*
30. *Lindsay Burkatsky, Sandra Vermeulen (Thompson Rivers University), The effects of majority opinions and emotional pretrial media on readers' judgements of guilt*
31. *Elizabeth Carlson, B.A. Hons., Nicole Anderson (Grant MacEwan University), The influence of noise in form perception*
32. *Anna Pham, Nicole Anderson (Grant MacEwan University), The numerosity of glass patterns*
33. *Zacnicte May, Trevor James Hamilton (Grant MacEwan University), The effect of nicotine on novel object recognition in zebrafish*
34. *Joanna McDouall, Bob Uttl, Carrie Leonard (Mount Royal University), Does prospective memory improve with delay? A meta-analysis*
35. *Sara Davis, Glen E. Bodner (University of Calgary), Sequential versus simultaneous testing modulates test-composition effects on recognition*
36. *Jennifer L. Briere, Laurie Hellsten, Tammy A. Marche (University of Saskatchewan), Psychometric properties of retrieval-induced forgetting*
37. *Michele Wellsby, Penny M. Pexman (University of Calgary), When does the BOI effect emerge? The role of bodily experience in children's language processing*
38. *P. Ian Newcombe, Penny M. Pexman, Paul D. Siakaluk, Hugh Curtis, Cale Campbell (University of Northern British Columbia), The effects of sensorimotor, emotional, and introspective knowledge in semantic processing*
39. *Dylan C.M. Wiwad, Craig Blatz (Grant MacEwan University), Locus of control and political orientation*
40. *Nicole Burnett, Glen E. Bodner (University of Calgary), Experiencing the generation effect can eliminate the generation effect*
41. *Catherine I. Phillips, Penny M. Pexman (University of Calgary), Clean pig – dirty pig: Children's understanding of antonymy*
42. *Scott Semenyna, P. Lynne Honey (Grant MacEwan University), Should you watch out for the quiet ones? Predicting social behaviour with personality tests*
43. *Jessica Lee, Catherine N. M. Ortner (Thompson Rivers University), The effect of provided and self-generated reappraisals on reaction time performance*
44. *Tom Carter, Rodney Schmaltz (Grant MacEwan University), Reducing music piracy: An assessment of popularity and scarcity on consumer purchasing behaviour*
45. *Nicolas Rehberg-Besler, Shannon Digweed (Grant MacEwan University), Does size matter? Acoustic correlates to body size and female choice in the wood frog (Rana sylvatica)*
46. *Yvonne Chen , Kirstie Lithgow, Jumjury A. Hemmerich, Jeremy B. Caplan (University of Alberta), Is what goes in what comes out? Encoding and retrieval ERP components in recognition memory are related*
47. *Ashley Woodland, Michael Woloszyn (Thompson Rivers University), Manipulating DRM false recall by varying item-specific versus relational processing in a paired-associate task*

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Notes