Banff Annual Seminar In Cognitive Science

Friday Apr 30

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 **Jonathan Fugelsang** (University of Waterloo)

Examining the Nature of Belief

Research in numerous fields, including decision making, social reasoning, and scientific thinking, has demonstrated that one's beliefs can influence how new information is gathered, interpreted and applied in multiple contexts. My colleagues and I have been involved in several lines of research examining the nature of belief-based processes, particularly as it pertains to causal beliefs. I will discuss three lines of research aimed at examining (1) the representation of belief at a semantic level, (2) the degree to which the application of belief can be consciously controlled, and (3) the possible mechanisms underlying the acquisition of belief. These three lines of research converge on the notion that beliefs can affect processing at a very low level. The implications of this low level of processing will be discussed in terms of the modifiability of beliefs in the face of new evidence in real life decision-making.

6:45 PM Dinner break

8:30 10:30 PM Reception and poster session (Sponsored by the *Canadian Journal of Experimental Psychology* and the Canadian Psychological Association)

Saturday May 1

8:30 AM Coffee, tea, juice, pastries

9:00 AM **Jonathan St. B. T. Evans** (University of Plymouth)

Dual Process Theories of Thinking and Reasoning: Facts and Fallacies

Dual-process theories have been widely applied to the psychology of reasoning, as well as a number of related fields (learning, decision making, social cognition). Broadly, the idea is that performance in thinking and reasoning reflects the combination of two kinds of thinking: fast, automatic and high capacity (type 1), and slow, controlled and low capacity type 2). Theories fall into two broad categories, according to whether they envisage type 1 and 2 processes proceeding in parallel, or else claiming that type 1 processes provide default intuitive responses that may or may not be moderated by slower, reflective type 2 processes. There is considerable empirical evidence to support the existence of dual processing in higher cognitive tasks. I will show, however, that a number of erroneous conceptions have emerged from these research programs. First, the widespread assumption that type 1 (heuristic) processes are responsible for cognitive biases and type 2 (analytic) processes for normatively correct reasoning is simply wrong. Nor is it correct to thinking of type 1 processes as contextualized while type 2 thinking is abstract and logical.

The common designation of type 2 thinking as conscious and controlled and type 1 thinking as unconscious and automatic is also highly problematic. I conclude with a sketch of a 'two minds' theory that can accommodate the existing literatures.

10:30 AM Coffee, tea, juice

11:00 AM **Norman R. Brown** (University of Alberta)

Historical-defined Autobiographical Periods: Their Origins and Implications

This presentation will consist of three sections. First, I review evidence indicating that historically-significant public events sometimes create historically-defined autobiographical periods (H-DAPs), and argue that this happens only when external events bring about wide-spread, profound and enduring changes in the fabric of daily life. The remaining sections address the implications of these claims. In the second section, I focus on collective memory and consider the possibility that H-DAP formation predicts the intergenerational transmission of the precipitating events and that the absence of H-DAPs predicts the opposite. In the third section, I discuss the theoretical implications of this research for a general understanding of personal memory. In particular, I contend that autobiographical memory is organized in a way that reflects marked changes in the fabric of daily life (FoDL). Typically, these FoDL transitions occur at the level of the indivual, but they can also occur at the level of the group. On this view, standard lifetime periods are associated with FoDL transitions at the individual level, and H-DAPs are associated with FoDL transitions at the group level.

12:30 PM Lunch break

2:00 PM **Raymond M. Klein & Matthew D. Hilchey** (Dalhousie University)

Using Inhibition of Return to Illustrate the Psychological Scientist's Challenge to Avoid Unreality and Uncontrol

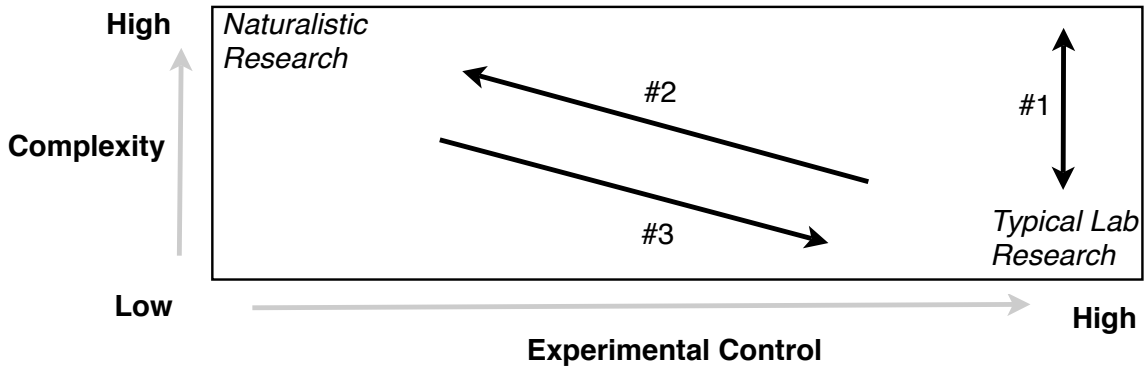
The task of reducing human thought and behavior "to a mechanical process of cause and effect" is, according to Hebb, the most difficult task in science. One reason is the conflict between the goals to achieve a useful degree of ecological validity *and* to control irrelevant variables and make precise measurements. Like the sailor in Greek mythology, who must navigate between two terrible hazards, Scylla and Charybdis, the psychological scientist must navigate between uncontrol and unreality. Research on inhibition of return will be used to illustrate these hazards and to provide some guidance for safe and fruitful navigation between them.

3:30 PM Coffee, tea, juice, cake

4:00 PM **Alan Kingstone** (University of British Columbia)

Everyday Human Attention: Now You See It, Now You Don't

As researchers we all know that cognitive processes vary and are affected by what is happening elsewhere in the system. In other words, cognitive processes depend critically on the specific situational context in which a subject is embedded. Thus, if we wish to engage and understand the cognitive processes that are engaged by everyday living, we need to examine human performance in real life situations.



In my talk I will present different approaches (illustrated above) that researchers may take in trying to link lab with real life. One approach (see arrow #1) is to take an effect that is normally studied in an impoverished and highly controlled setting (e.g., visual search or IOR) and varying the situational complexity of the situation while maintaining high experimental control. This approach might tell us a great deal about the paradigm-specific-effect, but it probably doesn't tell us much about the cognitive processes that are involved in everyday life; indeed, it's very possible that the effect being studied never occurs in real-life. Another approach (arrow #2) is to increase situational complexity while loosening control. This approach is much more promising, but as I will show, one may discover in the end that the behaviour one has been studying in controlled situations occurs because of that control. A third approach (arrow #3), called cognitive ethology, initially observes naturally occurring behaviour, and then progressively introduces experimental control. One major advantage of this approach is that one can discover immediately whether the naturally occurring effect does (or does not) persist when it is introduced into a controlled setting in the lab; and therefore one can discover whether the effect one is studying in the lab is likely (or not) to provide information about behaviour that really occurs in everyday life.

5:30 PM Closing remarks

6:00-8:00 PM Reception and poster session

Posters Friday 8:00-11:00

1. *Alexander Taikh, Glen E. Bodner (University of Calgary), Reading words aloud makes them more... or less memorable*
2. *Catherine I. Phillips, Christopher R. Sears, Penny M. Pexman (University of Calgary), The body-object interaction effect in a sentence reading task*
3. *Gemma Leonard, Ian Hargreaves, Penny Pexman (University of Calgary), The neural consequences of embodied semantic processing*
4. *Brea Chouinard, Jacqueline Cummine, Esther Kim, Crystal Zhou, Stan Hrybouski (University of Alberta), A neuroanatomical investigation of irlen's using a reading task*
5. *Juanita Whalen, Penny Pexman, Gemma Leonard (University of Calgary), It pays to have a sibling: Speaker-target relationship as a cue to ironic intent*
6. *Michelle Chan, Nikki V. Lubemsky, Anthony Singhal (University of Alberta), The role of emotional distractions on simulated driving performance*
7. *Tom Carter, Rodney M. Schmaltz (Grant MacEwan University), The effect of perceived group size on identification and affiliation within musical subcultures*
8. *Jonathan Wilbiks, Ben Dyson (Ryerson University), When selective attention fails: The costs and benefits of audio-visual integration as a function of musical expertise*
9. *Amber McCloskey, Nicole D. Anderson (Grant MacEwan University), Visual crowding in older and younger observers*
10. *Nadia Dow, Peter Dixon (University of Alberta), Effect of practice on failure to engage in task switching*
11. *Dallas Desrosiers, Michael Woloszyn (Thompson Rivers University), Evidence against a mirror neuron explanation of false memory for actions*
12. *Miranda Lucas, Miranda Lucas, Rodney Schmaltz (Grant MacEwan University), Music as a sexually selected trait: A pilot study*
13. *Kyle Plotsky, Scott Allen (University of Lethbridge), Unconscious control of accuracy: A study of a target's affective effects*
14. *Samantha Lowden, Suzanne Hala, Lee-Ann McKay (University of Calgary), The effects of elaboration on external source monitoring in 4-year-olds*
15. *Wenjun Dai, Jacqueline Cummine (University of Alberta), Investigating reading processes using tractography and region of interest analysis*
16. *Crystal Zhou, Brea Chouinard, Stan Hrybouski, Alexandra Mateu-Martin, Jacqueline Cummine (University of Alberta), Varying word types in a reading task varies fMRI bold activation in the ventral and dorsal reading processing streams*
17. *Alan K. S. Nielsen, D. Rendall (University of Lethbridge), Sound symbolism and the bouba-kiki effect: Experiments in word construction*
18. *Michele Wellsby, Penny M. Pexman (University of Calgary), Embodied lexical processing in children*
19. *Allison Myggland (Grant MacEwan University), Bonnie Dobbs (University of Alberta), Trevor Hamilton (Grant MacEwan University), An examination of the relationship between chemo brain and impairment in driving performance*
20. *Irene Liu, Giuseppe Iaria, Richard M. Levy, Jason J.S. Barton (University of Calgary), When do we get lost? Examining the effects of aging on a variety of topographical orientation strategies*
21. *Faria Sana, Joseph A. Kim (McMaster University), Short-term training on structure-based problem recognition*
22. *Nicole Burnett, A. N. Burnett, G. Bodner (University of Calgary), Generating better readers without generating*
23. *Melissa C. Reimchen, John R. Vokey, John E. Granzow (University of Lethbridge), On the dissociation between pitch production and pitch judgement: The role of musical expertise*

Posters Saturday 6:00-8:00

24. *Brandon Yardy, Fangfang Li (University of Lethbridge), Gender identification based on 's' and 'sh' sounds in English and Mandarin*
25. *Avery Popien, Mitchell LaPointe, John R. Vokey (University of Lethbridge), Attentional bias toward food in disordered eaters: Is this a phobia?*
26. *Lauren D. Goegan, Charmaine Thomas, Jody Arndt, Christopher R. Sears (University of Calgary), Attentional biases associated with post-traumatic stress disorder: An eye-tracking study*
27. *Michael Friesen, Aimee Skye (Grant MacEwan University), Changing one's mind: A woman's prerogative or a bias in everyone?*
28. *Kristine A. Peace, Victoria E. S. Richards, Kimberly A. Masliuk (Grant MacEwan University), Do motivations for malingering matter? Symptoms of malingered PTSD as a function of motivation and trauma type*
29. *Aiden Arnold, Ford Burles, Jason J.S. Barton, Giuseppe Iaria (University of Calgary), Developmental topographical disorientation: A newly discovered cognitive disorder*
30. *Mark J. Huff, Glen E. Bodner (University of Calgary), Comparing item-specific and relational generation tasks in the DRM paradigm*
31. *Tanya Hutchinson, Cody Tousignant, Glen E. Bodner (University of Calgary), Context effects on recollection and familiarity ratings*
32. *Lisa Pascal, Suzanne Hala, Lee-Ann McKay (University of Calgary), Source monitoring for two and three sources: Does the generation effect help 4-year-olds?*
33. *Christopher Madan, Anthony Singhal (University of Alberta), Automatic motor processing enhances memory, while intentional does not*
34. *Hugh Curtis, Ecaterina Ciugureanu, Paul Siakaluk, William Owen (University of Northern British Columbia), Is embodied information accessible in an insult explanation task?*
35. *Donald Atkin, Anthony Singhal (University of Alberta), Right hand versus left hand, who wins? An ERP study of decision-making during a pointing task*
36. *Renata Ruch, Shannon M. Digweed (Grant MacEwan University), Acoustic cues to individual identity in domestic cattle (bos taurus)*
37. *Sara Shepherd, Nicole D. Anderson (Grant MacEwan University), Effects of pooling on global form perception*
38. *Cody Tousignant, Penny Pexman (University of Calgary), The more you know: Body-object interaction effects in semantic categorization tasks are modulated by task knowledge*
39. *Cyrus Shaoul, Georgie Columbus, Harald Baayen, Chris Westbury (University of Alberta), Eye-movements while reading a broad sampling of 3-grams*
40. *Stephen Bennett, Nicole Burnett, Paul Siakaluk (University of Northern British Columbia), Penny Pexman (University of Calgary), The effects of imageability and body-object interaction on multisyllabic words*
41. *Teana Imbeau, Shannon M. Digweed (Grant MacEwan University), Who's your neighbour? Individual identity in territorial 'rattle' calls of North American red squirrels (tamiasciurus hudsonicus)*
42. *Kristin Rostad, Penny Pexman (University of Calgary), "I want to, but I don't want to...": The understanding of conflicting desires in early childhood*
43. *Jody Arndt, K. Newman, C. Sears (University of Calgary), A time course analysis of attention to emotional images in dysphoric individuals*
44. *Yvonne Wong, Anthony Singhal, Connie Varnhagen (University of Alberta), Neural correlates of language processing strategies in children: An fMRI study*
45. *Michelle White, Penny Pexman, Ian Hargreaves (University of Calgary), Effects of context on semantic richness*
46. *Manuel Ebert, Sebastian Fleck, Caspar Goeke, Kai Kaspar, Johannes Keyser, Sabine König, Carina D Krause, Robert Muil, Saskia K. Nagel, Frank Schumann, Peter König (University of Osnabrück), FeelSpace: A holistic study of sensorimotor contingencies*

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Notes