

www.csbbcs.org/2007

Canadian Society for Brain, Behaviour and Cognitive Science

17th annual meeting

June 15-17, 2007



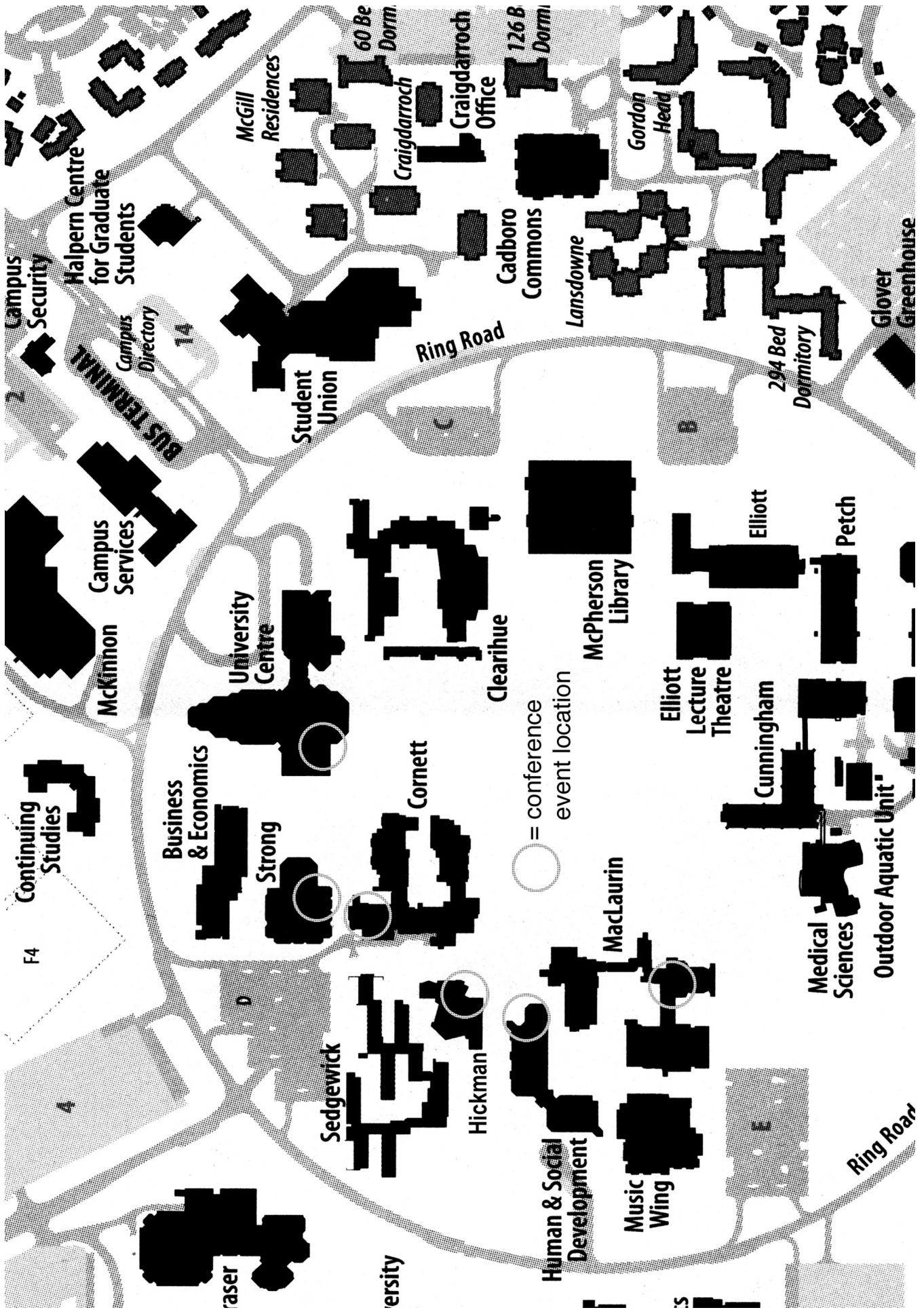


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GENERAL INFORMATION

Registration

Register in the lobby of the MacLaurin Building:

- Friday June 15th: 4:30-7:00 PM
- Saturday June 16th: 8:30 AM-12:30 PM
- Sunday June 17th: 8:30 AM-12:30 PM

Site Information

Parking

Lot 4, near the stadium, is the closest visitor parking lot to the conference rooms. Parking is free after 6 PM Friday and all weekend; if you're arriving before 6 PM on Friday, you can buy a parking pass with coins or a credit card at one of the automated kiosks in the parking lot.

For participants staying in on-campus housing, Lot 5 (located just east of the Craigdarroch Office) is the closest parking lot to residences.

Meeting Rooms

All conference activities will take place on campus. Meeting rooms are located in five buildings: Cornett, David Strong, Harry Hickman, Human and Social Development, and MacLaurin.

Building abbreviations:

- COR Cornett Building
- DSB David Strong Building
- HHB Harry Hickman Building
- HSD Human and Social Development Building
- MAC MacLaurin Building

A campus map highlighting the locations pertinent to conference activities appears on the preceding page. There are also campus maps located around the university and room maps are in each building.

Smoking

Smoking is not permitted in any building on UVic (or inside any public facility off campus).

Hospitality

From 5:30-7:00 PM on Friday June 15th there will be an opening reception with a no-host cash bar and complimentary hors d'oeuvre in the lobby of the MacLaurin Building, with a concurrent poster session. There will also be a no-host bar, complimentary chips and salsa, and a second poster session from 5:30-7:00 PM on Saturday June 16th.

Complimentary light refreshments will be offered on Saturday and Sunday during scheduled morning and afternoon breaks, as indicated in the program. From 12:30-2:00 PM on Saturday June 16th and Sunday June 17th, lunch will be provided in the University Centre cafeteria for registered attendees (costs included as part of the registration fee).

Program Information

This year's program consists of 109 poster presentations and 98 oral presentations. Among the oral presentations are the Donald O. Hebb lecture by Prof. Morris Moscovitch; invited presentations by Profs. Michael Frank and Samuel McClure in the inaugural President's Symposium on the topic of Cognitive Neuroscience of Decision Making; symposia on Cognitive Psychology in the Real World, Steroids and Neuroplasticity, and Perspectives on the Ubiquity/Tyranny of Time; and 81 submitted individual papers.

Poster Sessions

The poster sessions will be held in the lobby of the MacLaurin Building. The first poster session, from 5:30-7:00 PM on Friday June 15th, will be held in conjunction with the opening reception, featuring a no-host cash bar and complimentary hors d'oeuvre. The second poster session will be held from 5:30-7:00 PM on Saturday June 16th in the same location, with a cash bar and complimentary chips and salsa.

Poster boards will be marked with numbers identical to the abstract numbers indicated in the program. Please mount your poster at least 30 minutes prior to the poster session (i.e., by 5:00 PM), and leave it in place for viewing until noon of the following day. Removal of Friday posters promptly at the beginning of lunch on Saturday would be helpful for Saturday's poster presenters.

Awards

Richard Tees Distinguished Leadership Award

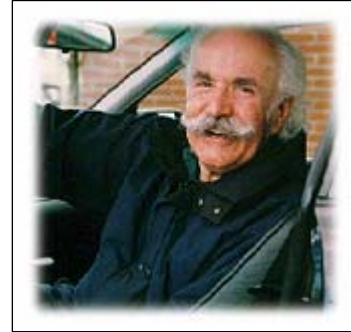
The Executive Committee of BBBS selects an annual recipient for outstanding leadership and service to the BBBS community, considering in its selection:

- Advancement and administration of the Canadian Society for Brain, Behavior, and Cognitive Science.
- Contributions to the training of students and technical staff in psychology both at one's own institution and nation-wide.
- Advancement of research and scholarship by involvement with granting agencies that fund research concerning brain, behaviour, and cognition.
- Contributions to Canadian journals of psychology.
- Advancement of research and scholarship by basic and applied scientific contributions to the discipline.
- Promotion of interaction between BBBS and other psychology organizations and direct service to the latter organizations.
- Promotion of scientific and administrative collaborations that advance the causes of the scientific study of brain, behaviour, and cognition.

2007 Richard Tees Award Winner: Vincent Di Lollo

From Dr. Colin M. MacLeod's nomination:

I wish to nominate Vince Di Lollo for The Richard Tees Distinguished Leadership Award. I can think of nobody more appropriate to be the first BBCS member to win both of our major awards, given Vince's devotion to the organization since its inception as well as to our science at all levels in the country.



The first criterion for the Tees award is the “advancement and administration of the Canadian Society for Brain, Behaviour, and Cognitive Science.” This one is just too easy: Vince was there for the birth of the organization, has served it continuously and with singular commitment since then, and has of course been its President.

The second criterion is “contributions to the training of students and technical staff in psychology both at one's own institution and nation-wide.” Vince is incredibly supportive of students, whether graduate or undergraduate, nurturing and reinforcing to bring out the very best in them. I would add that this is a quality not restricted to students—he has been immensely helpful to me and to a great many colleagues throughout our discipline.

The third criterion is “advancement of research and scholarship by involvement with granting agencies that fund research concerning brain, behaviour, and cognition.” Another absolutely straightforward one. Vince has of course served on the NSERC panel including, I believe, two stints as Chair. He has served on all of the NSERC reallocation panels, mobilizing the brain, behaviour, and cognition community to put its best foot forward. Indeed, he has been our watchdog with respect to NSERC, and on this basis alone we should recognize his leadership and dedication.

The fourth criterion is “contributions to Canadian journals of psychology.” How about serving a stint as Editor of the then *Canadian Journal of Psychology*?

The fifth criterion is “advancement of research and scholarship by basic and applied scientific contributions to the discipline.” How about having already won the Hebb Award?

The sixth criterion is “promotion of interaction between BBCS and other psychology organizations and direct service to the latter organizations.” Vince tried hard to keep CPA and BBCS in some kind of collaboration, although ultimately he saw this task as doomed. But he continues to advocate communication between the two societies. He has also been supportive of the joint meetings with the Experimental Psychology Society in the UK.

The seventh criterion is “promotion of scientific and administrative collaborations that advance the causes of the scientific study of brain, behaviour, and cognition.” I am not quite sure what this should entail beyond what was covered by the previous criteria, but I would say that he certainly more than fits the bill here as on the previous criteria.

In sum, to use a somewhat overworked phrase, this award seems to me to be a “slam dunk.” Vince Di Lollo is a leader nonpareil in our science and our organization, and richly deserves our recognition for that leadership. I honestly think this award would mean as much to him as the Hebb Award did, which shows you his dedication.

Donald O. Hebb Distinguished Contribution Award

The Donald O. Hebb Award is made to an individual who, in the opinion of the selection committee (composed of the five immediate BBCS past presidents), has made a significant contribution to the study of brain, behaviour, and cognitive science. Normally, the awardee shall have conducted a significant proportion of his/her research training or disciplinary work within Canada. The awardee is invited to give the Donald O. Hebb Distinguished Contribution address at the annual BBCS meeting.

2007 Donald O. Hebb Award Winner: Morris Moscovitch

Originally from Romania, Morris Moscovitch was inspired during his undergraduate years at McGill University by the case of the well-known amnesic, H. M., to go on to a career in neuropsychology. After completing a BSc at McGill, Professor Moscovitch went on to earn his PhD at the University of Pennsylvania under the supervision of Paul Rozin. His dissertation was entitled "Reaction-time studies assessing the verbal behaviour of the minor hemisphere in normal, right-handed, adult humans (or what does someone in his right mind know?)". He then began a long and productive affiliation with the University of Toronto where he is now the Max and Gianna Glassman Chair in Neuropsychology and Aging. Early in his career, Professor Moscovitch held a Medical Research Council Fellowship in Brenda Milner's laboratory at the Montreal Neurological Institute. His clinical neuropsychology interests led to a position in 1986 as consultant in Psychology at the Baycrest Geriatric Hospital in Toronto where he was later appointed senior scientist to the then new Rotman Research Institute – an institution dedicated to research on behavioural changes associated with aging.



Professor Moscovitch began his research career investigating lateralized hemispheric brain function at a time when cognition was barely acknowledged to involve the brain. He was poised to make significant contributions as the constraints imposed by the brain on cognitive organization became increasingly apparent. The 1990's saw an explosive interest in neuropsychology as a means of determining the modularity of cognitive processing and Professor Moscovitch has made fundamental contributions to that enterprise. His research program examines the brain mechanisms that mediate memory, attention, and the recognition of objects and faces. His work is guided by a neuropsychological model of memory founded on three principles: (1) the posterior neocortex mediates influences of memory that operate outside awareness, (2) the medial temporal lobes automatically store consciously perceived events and recover information about those events through cue-driven conscious recollection, and (3) the frontal lobes use memories from medial temporal lobes and posterior neocortex to guide strategic processes that underlie encoding and retrieval processes. Professor Moscovitch's research uses selective and divided attention behavioral tasks in conjunction with memory paradigms and neuroimaging techniques to investigate normal and neurologically impaired memory processes. He has published widely on topics related to memory and visual cognition from three perspectives: basic processes, normal aging, and neurological impairment. Professor Moscovitch has also done collaborative work using non-human species, particularly to examine the effects of controlled hippocampal lesions. His research has had a tremendous impact on the field: he has published over 150 articles; more than 100 of these have been cited at least 20 times each, and 20 have been cited over 100 times each. His work has appeared in such prestigious publications as *Science*, *Nature*, *Nature Neuroscience*, and *Proceedings of the National Academy of Sciences*. Professor Moscovitch's research has been funded by the Natural Sciences and Engineering Research Council, the Medical Research Council, the Social Sciences and Humanities Research Council, the Ontario Mental Health Foundation, the McDonnell-Pew Foundation, the Canadian Institutes of Health Research, and the Alzheimer's Society of Canada.

Professor Moscovitch has also contributed to the field through professional service, currently as editor of *Neuropsychologia*, and he has served on the editorial boards of nine other journals. He has been a generous and prolific graduate mentor, supervising more than 20 PhD students, among them Marlene Behrmann (Professor of Psychology at Carnegie Mellon University) and Patricia Reuter-Lorenz (Professor of Psychology at the University of Michigan), and Esther Strauss (Professor of Psychology at UVic).

University of Toronto psychology graduate students acknowledged his gift for supervision in awarding him the Psychology Graduate Students' Association Most Valuable Professor award in 2003. Professor Moscovitch's contributions to the field have been recognized by his election as Fellow of the Royal Society of Canada, the American Association for the Advancement of Science, the American Psychological Association, and the Canadian Psychological Association. In 2003, the British Experimental Psychology Society invited him to give their thirty-first Bartlett Lecture.

Professor Moscovitch's approach to the study of cognition embodies Hebb's notion that behaviour seen in clinical settings should inform research. Models of normal cognition resulting from this work ought reciprocally to inform the rehabilitation of impaired cognition due to brain damage. Morris Moscovitch's career is a stellar example of this synergy.

Donald O. Hebb Graduate Student Award

The Donald O. Hebb Graduate Student Award is made to the individual who, in the opinion of the award committee, has presented the best paper or poster at the annual meeting. Last year's award winner for best paper was Laura Bloomfield from the University of Alberta (*Mechanisms of species classification in black-capped and mountain chickadees*), with an honourable mention to Chris Striemer from the University of Waterloo (*Dorsal posterior parietal contributions to the control of visual attention: Evidence from optic ataxia*). Last year's winner for best poster was Evan Risko from the University of Waterloo (*The myth of control: When a larger cueing effect does not mean more attention*), with honourable mention to Jacqueline Cummine from the University of Saskatchewan (*On the independence of reading processes*). Winners from other years are listed on the BBCS website at <http://www.csbbcs.org/hebb.html>. Presentations entered in the competition are marked with an asterisk in the Short Program.

Candidates for the award for best paper:

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| <p>55 Patrick Van Rooyen – Pigeons' memory for time: Assessing the role of subjective shortening in a duration comparison task.</p> <p>63 Kevin J. MacKenzie – Modelling cue combination: Can perceived depth be predicted by JNDs?</p> <p>64 Christopher Striemer – Alterations in orienting but not reorienting following prism adaptation in a patient with optic ataxia.</p> <p>65 Michelle Jarick – Observing static and dynamic speech gestures activate the motor system for speech production.</p> <p>72 Andreas Breuer – Memory consolidation during rapid visual presentation: Investigations using indirect and direct memory tests.</p> <p>73 Kathleen L. Hourihan – Production during study benefits even to-be-forgotten words.</p> <p>81 Rostam Azarbehi – How wordlike is a word: A familiarity study.</p> <p>82 Ian Hargreaves – The neural consequences of semantic richness.</p> <p>90 Jamie Prowse – Heuristic effects on confidence and accuracy: An</p> | <p>extension of the probability heuristics model of syllogistic reasoning.</p> <p>91 Seyed Hossein Faramarzi – Human decision making: Activation of brain regions during associative and sequential processes.</p> <p>92 William Speechley – Logic, intuition, and delusions.</p> <p>95 Patricia Sorensen – Prenatal alcohol exposure impairs neurophysiological functioning even for correct responses.</p> <p>104 Meredith Young – Familiar contextual cues bias categorical decision making.</p> <p>105 Darryl W. Schneider – Task-set inhibition in chunked task sequences.</p> <p>112 Jessica Green – Dynamics of attentional control revealed by beamformers of low-frequency brain waves.</p> <p>113 Evan F. Risko – Fatigue kills: Sleep deprivation and visual attention from a systemic perspective.</p> <p>114 Hiroe Li – System navigation requires spatial attention; text entry requires verbal attention.</p> |
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- 115 Sari van Anders – Effects of sexual activity on women’s testosterone.
- 117 Jodi Pawluski – Adult hippocampal neurogenesis is altered with maternal experience.
- 175 Olav Krigolson – Sequence learning and medial-front cortex: External versus internal error evaluation.
- 176 Kyle Mathewson – The error-related negativity as a reinforcement learning signal in motor sequence acquisition.
- 178 Jennifer Heisz – Semantic, but not perceptual face learning modifies the N170 and N400 ERP components.
- 179 Travis Baker – Which way do I go? Neural activation in response to feedback processing and decision making in a virtual T-maze.
- 180 Matthew Crump – Probing the stream: Flexible and robust representations support contingency knowledge in the streamed-trials procedure.

Candidates for the award for best poster:

- 1 Jonathan Beuk – Effect of SB-277011A, a selective dopamine D3 receptor antagonist, on expression of conditioned fear in rats.
- 8 Cindy Barha – Hippocampal cell proliferation is differentially upregulated by different forms of estrogen.
- 9 Fiona Choi – Disruption of regulated AMPA receptor endocytosis has protective effects against sensitized behavioural responses to repeated amphetamine.
- 10 Julie Robillard – Role of 5-HT6 receptors in hippocampal bidirectional synaptic plasticity.
- 11 Elham Satvat – Effects of the Ginkgo biloba leaf extract, EGb761, on anxiety and adult neurogenesis.
- 12 Simon Spanswick – Characterization of cognitive deficits related to slow neuronal death in the hippocampus: Potential for neurogenic treatment and restoration of function.
- 13 Carrie Esopenko – What would you do with it? The role of the premotor, motor, and somatosensory cortices in semantic processing.
- 18 Jacqueline Cummine – The relationship between naming reaction time and functional MRI parameters in Broca’s area and evidence for an independent dual-route model of reading behaviour and neurophysiology.
- 20 James R. Schmidt – A response threshold account of response prediction in contingency learning: Why the “Proportion Congruence” effect has nothing to do with congruence.
- 22 Jady Wong – Rapid modulation of task switch costs based on probe location.
- 24 Lori Doan – The influence of processing matches and mismatches on explicit recognition memory.
- 25 Jordan Schoenherr – The involvement of working memory in confidence processing.
- 27 Brian Duffels – Colour SNARC.
- 29 Christopher Warren – The involvement of motor representations in conceptual operations.
- 30 Megan Therrien – The role of high spatial frequencies on human navigation.
- 32 Adam K. Dubé – Skills underlying inversion shortcut use: The role of analogical reasoning and working memory.
- 33 Stephanie Walsh – “I won’t forget.” Exploration of the change from cued episodic memory to prospective memory in children.
- 35 Nadia Martin – Belief bias across two domains of reasoning.
- 40 Danielle Labossiere – The role of prime distractor fluency in negative priming effects.
- 43 Annie Jalbert – Similarity in memory for where and when: Killing two birds with one stone.
- 45 Jonathan Fawcett – The consequences of forgetting in a directed forgetting task.
- 47 Nigel Gopie – Older people do not remember irrelevant information better: Evidence against inhibition failure in aging.

2007 Conference Credits

Conference Co-ordinator: Michael E. J. Masson, bbcs2007@uvic.ca

Program Committee: Michael E. J. Masson and A. A. J. (Tony) Marley

Graduate Awards Committee: Pierre Jolicoeur (co-Chair), Ray Klein (co-Chair), Glen Bodner, Richard Brown, Jamie Campbell, Peter Dixon, Richard Dyk, Liisa Galea, William Hockley, Steve Joordens, Guy Lacroix, Christine Lefebvre, Stephen Lupker, John McDonald, Patricia McMullen, Bruce Milliken, Todd Mondor, Chris Oriet, John Vokey, Norman White

President's Symposium: Clay Holroyd

Program Production: D. Stephen Lindsay and Joshua Goldberg

Organizational Assistance: Daniel Bub, Clay Holroyd, D. Stephen Lindsay, A. A. J. (Tony) Marley, James Tanaka

Conference Volunteers: Travis Baker, Caroline Blais, Melissa Boyce, Andreas Breuer, Alisha Coolin, Leora Dahl, Daniel Fiset, Mehul Gandhi, Vincenza Gruppuso, Sarah Hutchinson, Justin Kantner, Olav Krigolson, Rachel Link, Carla MacLean, Kyle Mathewson, Kim Maynard, Rebecca Phillips, Lara Pierce, Zena Rittenhouse, Kathleen Unfreed, Chris Warren, Verena Willenbockel

Technical Contact: MohSho Interactive Multimedia, bbcs@mohsho.com

PKP Technical Contact: OCS Support Forum, ocs@pkp.ubc.ca

This conference could not have taken place without the support of many other people. The organizers thank Trudy Shore and anyone else we may have missed for their generous assistance.

Sponsoring Organization: Department of Psychology, University of Victoria, <http://www.uvic.ca/psyc>

Funding and In-Kind Contributors:

- Department of Psychology, University of Victoria: <http://www.uvic.ca/psyc>
- Faculty of Social Sciences, University of Victoria: <http://socialsciences.uvic.ca>
- Vice-President Research, University of Victoria: <http://www.research.uvic.ca>
- Faculty of Graduate Studies at the University of Victoria: <http://web.uvic.ca/gradstudies>

2007 BBBCS Executive

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Past President	Jamie Campbell (University of Saskatchewan)	pastpresident@csbbcs.org
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Members-at-Large	Lorraine Allan (McMaster University)	executive1@csbbcs.org
	William Hockley (Wilfrid Laurier University)	executive2@csbbcs.org
	Lisa Kalynchuk (University of Saskatchewan)	executive3@csbbcs.org

LOCAL FOOD, DRINK, AND ENTERTAINMENT

Steve Lindsay's Guide to Victoria Restaurants, Beer, and Jazz

Restaurants

Victoria is a hotbed of good restaurants (the Yellow Pages dedicate more than a hundred pages of restaurants). Listed below are a few idiosyncratic suggestions that I hope you will find helpful. I've given a rough guesstimate of how much a mildly gluttonous/bibulous BBCSer might expect to spend including tax but not tip. You will probably need a reservation at all of the places listed under "Fine" or "Pretty Fine" dining, but it's worth calling them if it gets to be the last minute and you don't have a reservation. Unless otherwise noted, the restaurants listed below are within +/- 15 minutes brisk walking distance of the heart of downtown. The #4 and #14 buses from UVic (near the bookstore) will get you downtown in 20-30 minutes for \$2.25; schedules are posted at the bus stop. A cab from UVic to downtown costs about \$15 plus tip: Bluebird 382-4235; Empress 381-2222.

Fine Dining (\$55-85)

Café Brio, 944 Fort Street (between Quadra and Vancouver Streets), 383-0009

Far and away my favourite. The cooking is west-coast-inflected Italian with a strong emphasis on locally harvested produce, meats, and seafood. The dishes are creative but not pretentious and, most important, they are truly delicious. The room is visually attractive and the atmosphere warm and energetic. Co-owning couple Greg and Sylvia are extraordinarily welcoming, the wait staff are friendly pros. If all the tables are booked, see if there's space at the bar and if so say hi to Nick.

Brasserie L'École, 1715 Government Street (near Fisgard Street), 475-6260

Probably my second favourite. Chef Sean Brenner was the chef at Brio when it first opened, and left after a few years to open the Brasserie. It's small and really looks the part of a French bistro. The frites are very good – not the best I've ever had, but up there. The greatest strength of this place is the excellent wine list and the policy that any wine on the list can be purchased by the glass for 1/5th of their bottle price if the party buys at least two glasses (and any bottle they've already opened for another by-the-glass customer can be bought by the single glass). Of course, their mark-up on the bottle is non-trivial, but nonetheless this lets a person try special and interesting wines that are rarely available. The cheese selection is also particularly good.

Rosemead Dining Room, in the English Inn, 429 Lampson Street (NOT downtown), 412-7673

I generally eschew restaurants associated with hotels, but this is a worthy exception. The building is old and funky/grand, but the restaurant decor combines a variety of stylings in an interesting way. The kitchen here is doing some very ambitious cooking (e.g., an appetizer of foie-gras-crusted scallop, artichoke-crispy bacon and frisée salad, with frozen horseradish cream). More formal than the other restaurants on this list.

Paprika Bistro, 2524 Estevan Avenue (NOT downtown), 592-7424

A bit closer to campus than the other restaurants on this list, Paprika Chef George Szasz's menu features French/Hungarian approaches to local foods. I sometimes find that the service borders on the obsequious, and there's not much else to see or do in this neighbourhood, but the food is excellent and the wine list is pretty good.

Camille's Fine Westcoast Dining, 45 Bastion Square, 381-3433

Terrific wine list; quite good food (sometimes a touch pretentious in presentation). The atmosphere can feel just a bit subterranean as the place is a half-floor below ground level, but nonetheless it's a very solid restaurant.

Pretty Fine Dining (\$35-55)

The Temple, 525 Fort Street (near Government Street), 383-2313

A fun if somewhat self-consciously hip spot with very tasty and inventive tapa-size dishes. Prices are quite reasonable for the creativity and yumminess of the food (the lambshanks are especially toothsome). The wine list is small but has some nice offerings.

Il Terrazzo Ristorante, 555 Johnson Street (near Wharf Street), 361-0028

This is a very nice, informal place, with appealing decor, pleasant service, good food, and an OK wine list. Especially nice if you can sit outside in the courtyard (and if you happen to stray from the conference and find yourself downtown at lunch time this would be a good choice). Inside tends to get noisy on a Friday or Saturday, and the dishes are not wildly unusual or adventurous. But good.

Zambri's, 110-911 Yates Street (between Quadra and Vancouver Streets), 360-1171

Small, completely unpretentious (e.g., you line up, place an order, put a number on your table), a limited wine list, but some seriously delicious pasta sauces and terrific soups. Reportedly they do a 5-course meal for \$50 on Saturdays (for which reservations are recommended), but I haven't tried that. The restaurant is in a little strip mall.

The Tapa Bar, 620 Tronzo Alley (between Government and Broad, by View Street), 383-0013

This isn't really a tapa bar of the sort found in Spain – compared to a real tapa bar, the dishes are bigger, pricier, and slower to arrive. But the location is quaintly attractive, the place is nicely decorated, they offer a variety of tasty dishes at reasonable prices (e.g., prawns sizzled in white wine & chipotle peppers, \$10.50), and they have some decent wines.

Queen Mother Waterside Café, 100-407 Swift Street (near Store Street), 598-4712

Fabulous views, interesting decor, cool vibe. Fusion menu featuring such dishes as Asian five-spice lamb sirloin, Madras curry chicken thighs, and tofu filet mignon. I've only had lunch here, but many people swear by it.

Herald Street Café, 546 Herald Street (between Douglas and Government Streets), 381-1441

I haven't gone to this place for a few years, but it used to be one of my faves. Their appetizers are especially good (indeed, we used often to make a meal of appies). I especially liked their crab cakes. Bright, artsy, noisy.

Superior Café, 106 Superior Street (the "bottom" of Superior Street, near the water), 380-9515

A fairly new spot, and a very fun place. Located in an old church, with quirky/artsy/interesting decor (e.g., every glass-topped table has a novel artscape below) and an equally quirky and eclectic menu of small, interesting dishes, great for sharing. Limited wine/beer list. Live music (neither staid nor loud). Highly recommended for those looking for something different that won't break the bank.

Heron Rock Bistro, 4-435 Simcoe Street (between Menzies and Croft Streets), 383-1545

This place has only been open a year or so, and I've only been once. Don't be put off by the location (beside a supermarket in the James Bay residential neighbourhood, a bit of a walk from downtown). Every night of the week they feature a different 3-course meal for \$15!

Pagliacci's, 1011 Broad Street (between Broughton and Fort Streets), 386-1662

A Victoria standard for decades, Pag's (as locals call it) offers a little slice of the Big Apple with a dollop of nostalgia. Casual/funky/fun, tables packed together, lots of pasta dishes. On the border between "pretty fine" and "casual" dining.

Casual Dining (\$20-35)

Da Tandoor, 1010 Fort Street (between Vancouver and Cook Streets), 384-6333

Pretty darned good Indian food. The butter chicken is a particular favourite.

Siam Thai Restaurant, 512 Fort Street (between Government and Wharf Streets), 383-9911

Might be Victoria's oldest Thai place. Consistently good.

JJ Wonton Noodle House, 1012 Fort Street (between Vancouver and Cook Streets), 383-0680

Nothing fancy, just very well done Chinese dishes of the sort familiar around here.

The Noodle Box, 626 Fisgard or 818 Douglas Street (two locations)

More of a take-out place, but they have a couple of tables. Very tasty for what it is, and very cheap. Not the sort of place one needs to telephone in advance.

Sook Jai Thai, 839 Fort Street (between Blanshard and Quadra Streets), 383-9945

I haven't been to this restaurant for a while, but previously enjoyed it.

Rebar Modern Food, 50 Bastion Square, 361-9223

Rebar has been "serving up the freshest, funkiest and healthiest food on the West Coast" since 1989. The fare is mostly vegetarian but includes fish/seafood dishes. They also offer a bewildering array of freshly made juices (e.g., the "Liver Quiver" is a bracing blend of grapefruit, lemon, olive oil, cayenne, and garlic). The co-owners here have published a darned good cookbook that makes a very nice gift. Reservations recommended.

5th Street Bar and Woodfire Grill, 1028 Hillside Avenue (NOT downtown), 380-4600

This is a casual neighbourhood pub near the corner of Quadra and Hillside (25 minute walk from downtown). Nothing fancy, but definitely a full notch above standard pub fare, and the value is terrific. Their pizzas are thin-crust and tasty, the bison burger bounteous. Staff are friendly, and they keep their beer lines clean (and offer three locally made craft beers as well as the usuals). The location is not ideal, being between UVic and downtown with not much else nearby. Reservations recommended.

John's Place Restaurant, 723 Pandora Avenue (between Douglas and Blanshard), 389-0711

As close to a diner as you'll find in Victoria. My experience here is limited to breakfast, which they do quite well.

Within Walking Distance of UVic

UVic is in a noncommercial area, so there's nothing right at hand except for UVic facilities. Felicita's, the undergrad pub in the Student Union Building, was recently redecorated and seems to be under new management and doing as well as one might expect an undergrad pub to do (open Monday-Saturday, closed Sunday). The IQ Bistro in the Graduate Students' Centre has some reasonably tasty things on the menu and a quite pleasant space (but is only open Monday-Friday in the summer).

Near campus, one option is to walk southeast down Sinclair Road to Cadboro Bay Road and turn left (where you will find an excellent supermarket called Peppers, a small restaurant called Olive Olios, another larger restaurant called Martin's Place, and a pub/store called Smuggler's Cove).

The other option is to walk northwest (down Cedar Hill, or Sinclair-which-becomes-McKenzie, or on the smaller neighbourhood streets that run between them) to Shelbourne Street. There you'll find a variety of places to eat and shop (including a BC Liquor Store). Maude Hunters' Pub is pretty decent. Lin Heung offers perfectly acceptable Chinese food. The Little Thai Place is also nice.

Beer in Victoria

Victoria is awash in excellent beer. In addition to the brew pubs (serving beer brewed on the premises) listed below, many local bars have a good range of beers on tap, often including the exceptionally brews made in small batches by Lighthouse and/or by Phillips Brewing.

Spinnakers, 308 Catherine Street

Spinnakers was one of Canada's first brew pubs (i.e., a pub selling beer brewed on the premises), and it must surely remain one of the very best, especially in terms of traditional English ales (e.g., their ESB is superb, if you like a good bitter). The place is right on the water and tables by the windows (or on the upper-level deck) have great views. A hungry person can also eat here, but I wouldn't particularly recommend it as a dining destination. It's a bit of a walk from the heart of downtown.

Swans, 506 Pandora Avenue

Swans is in a beautifully restored downtown building that was originally a Chandler's. The place is packed with local art, with a strong emphasis on First Nations art. The beer is, IMHO, a whisker less good than Spinnakers but still very good. They have live music most nights of the week. The pub fare is pretty standard, but the restaurant affiliated with Swans is pretty good.

Canoe Club, 450 Swift Street

This is a nicely re-done warehouse space on the Gorge waterway a few blocks from downtown. The beer's not as good as that at Spinnakers or Swans, but it's still quite good, and they also serve above-average-for-a-pub food in the "casual" (bar) side of the place; the restaurant side is OK, but in terms of dining you'd do better at most of the places listed above.

Irish Times, 1200 Government Street

Not a brew pub, but they have quite a range of beers on tap, and the decor evokes the upper end of the spectrum of Irish pubs. The pints are pricey, but it's a fun spot and the music is often good. If for some reason you're here Sunday night, the Irish music jam led by local phenom Daniel Lapp is well worth taking in.

Jazz in Victoria

There's only one real jazz spot in Victoria, and that's Hermann's Jazz Club at 753 View Street. Funky/kitschy decor, terrific jazz. Thursday the 15th features The Tom Vickery Trio (\$5 cover; typically several players sit in after the first set), and Friday the 16th three of Victoria's very best: Drummer Josh Dixon, alto saxman Noah Becker, and bassist Sean Drabbitt (cover probably between \$5 and \$10).

UVic Grad Students' Nightlife Recommendations

recommended by Carla MacLean, Leora Dahl, and Mel Boyce

Maude Hunters, 3810 Shelbourne Street, 721-2337

It's been 19 years since Maude Hunters opened its doors as one of the city's first neighbourhood pubs. Maude's is a relaxing pub with a patio.

The Penny Farthing, 2228 Oak Bay Avenue, 370-9008

A warm welcome awaits you at The Penny Farthing Olde English Pub in the heart of Victoria's Oak Bay Village (several miles from downtown). Here you'll discover fires crackling in four fireplaces...dark, rich wood...Victorian etched glass doors and windows...a fascinating collection of memorabilia...and a fabulous bar.

Spinnakers Brewpub, 308 Catherine Street, 386-2739

Spinnakers is Victoria's oldest brewpub and features an extensive beer selection. The pub-style menu is highlighted by fresh, local ingredients and free-range meats and poultry. Nice patio on the water.

Darcy's Pub, 1127 Wharf Street, 380-1322

Darcy's Pub is located at the foot of Bastion Square by Victoria's harbour waterfront. This traditionally styled pub offers pool tables and live music on weekends. During the summer guests can enjoy a beautiful day looking out at the water from the patio.

Irish Times, 1200 Government Street, 383-7775

Irish Times is a downtown pub in the heart of Victoria. Live Celtic music 7 nights a week. Often has a lineup on Friday or Saturday nights, especially later on in the evening.

Swans Brewpub, 506 Pandora Avenue, 361-3330

Grand brick-and-wood pub has a wraparound sunroom on the south and west sides, and plenty of handpumps sticking out of the bar. It's big, and popular and noisy at weekends, but quite a bit more sedate at breakfast and lunchtimes.

Christies Carriage House, 739 Fort Street (at Richmond Road), 598-5333

Set in a restored heritage home on the Victoria-Oak Bay border (not practical walking distance from the heart of downtown), this neighbourhood pub offers traditional British pub fare paired with modern Canadian selections along with a good choice of brews and beverages. Good for a large group of people.

Glo Europub and Grill, 104-2940 Jutland Road, 385-5643

Excellent West Coast cuisine, more than 100 wines and an extensive selection of imported and domestic beers, live music and DJ's, a heated patio and a gorgeous view along the Selkirk Waterway (not practical walking distance from the heart of down town).

The Mint, 1414 Douglas Street, 386-6468

The Mint is a funky, relaxed downtown lounge & restaurant serving up Tibetan and Nepalese cuisine. Live music 6 nights a week and an extensive menu of fancy cocktails, wine and beer.

Dance Bars

- The Upstairs, #15 Bastion Square, 385-LIVE
- Hugo's, 625 Courtney Street, 920-4846
- Hush (LGBT Bar), 1325 Government Street, 385-0566

CONDENSED PROGRAM

Friday, June 15, 2007

4:30	Registration	MAC Lobby
5:30	Poster Session 1 (Abstracts 1-54) and Reception (cash bar, hors d'oeuvre)	MAC Lobby

Saturday, June 16, 2007

8:30	Registration	MAC Lobby
9:00	Paper Session 1	
	1.1 Animal Behaviour (Abstracts 55-59)	DSB C103
	1.2 Perception (Abstracts 60-65)	COR B108
	1.3 Symposium – Cognitive Psychology in the Real World:.....	HSD A240
	A Symposium of Reviews (Abstracts 66-70)	
	1.4 Memory I (Abstracts 71-76)	HHB 105
10:30	Refreshment Break	MAC Lobby
11:00	Paper Session 2	
	2.1 Language and Number Processes (Abstracts 77-82)	COR B108
	2.2 Cognitive Processes I (Abstracts 83-88)	HSD A240
	2.3 Reasoning (Abstracts 89-94)	HHB 105
	2.4 Human Neuroscience I (Abstracts 95-100)	DSB C103
12:30	Lunch	UC Cafeteria
2:00	President's Symposium (Abstracts 101-102)	MAC A144
3:30	Refreshment Break	MAC Lobby
4:00	Paper Session 3	
	3.1 Cognitive Processes II (Abstracts 103-108)	HSD A240
	3.2 Attention (Abstracts 109-114)	HHB 105
	3.3 Symposium – Steroids and Neuroplasticity: From Copulation	DSB C103
	to Lactation (Abstracts 115-118)	
5:30	Poster Session 2 (Abstracts 119-173) and Reception (cash bar, chips and salsa)....	MAC Lobby

Sunday, June 17, 2007

8:30	Registration	MAC Lobby
9:00	Paper Session 4	
	4.1 Human Neuroscience II (Abstracts 174-179)	DSB C103
	4.2 Cognitive Processes and Methodology (Abstracts 180-184)	HSD A240
	4.3 Memory II (Abstracts 185-190)	HHB 105
10:30	Refreshment Break	MAC Lobby
11:00	Paper Session 5	
	5.1 Cognitive Processes III (Abstracts 191-196)	HSD A240
	5.2 Animal Neuroscience (Abstracts 197-201)	DSB C103
	5.3 Symposium – Perspectives on the Ubiquity/Tyranny of Time	HHB 105
	(Abstracts 202-206)	
12:30	Lunch	UC Cafeteria
2:00	Awards and Hebb Lecture	MAC A144
4:00	Annual General Meeting	MAC A144

Saturday, June 16, 2007				
Time	COR B108	DSB C103	HHB 105	HSD A240
9:00	Perception	Animal Behaviour	Memory I	Symposium: Cognitive Psych in the Real World
9:30				
10:00				
10:30	Refreshment Break: MAC Lobby			
11:00	Language and Number Processes	Human Neuroscience I	Reasoning	Cognitive Processes I
11:30				
12:00				
12:30	Lunch: University Centre Cafeteria			
1:00				
1:30				
2:00	President's Symposium MAC A144			
2:30				
3:00				
3:30	Refreshment Break: MAC Lobby			
4:00	n/a	Symposium: Steroids and Neuroplasticity	Attention	Cognitive Processes II
4:30				
5:00				
5:30	Poster Session 2 MAC Lobby			
6:00				
6:30				
7:00				
7:30				
Sunday, June 17, 2007				
Time	DSB C103	HHB 105	HSD A240	
9:00	Human Neuroscience II	Memory II	Cognitive Processes and Methodology	
9:30				
10:00				
10:30	Refreshment Break: MAC Lobby			
11:00	Animal Neuroscience	Symposium: The Ubiquity/Tyranny of Time	Cognitive Processes III	
11:30				
12:00				
12:30	Lunch: University Centre Cafeteria			
1:00				
1:30				
2:00	Awards and Hebb Lecture MAC A144			
2:30				
3:00				
3:30				
4:00	Annual General Meeting MAC A144			
4:30				
5:00				

SHORT PROGRAM

An asterisk indicates a presentation that is under consideration for the 2007 Donald O. Hebb Graduate Student Award (see pages 5-6 for further information).

FRIDAY June 15

Poster Session 1 (5:30 – 7:00) MacLaurin Building (MAC), Lobby

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|---|---|
| <p>(1)* Beuk, Jonathan; Swain, Shelley; Heidbreder, Christian; Beninger, Richard
Effect of SB-277011A, a selective dopamine D3 receptor antagonist, on expression of conditioned fear in rats.</p> <p>(2) Dias, Carine; Choi, Fiona Y.; Phillips, Anthony G.
Renewal of amphetamine-seeking behaviour induced by contextual cues: Sex differences?</p> <p>(3) Grant, Douglas
Effect of partial reinforcement on acquisition and retention in delayed matching with pigeons.</p> <p>(4) Turner, Brianna; Jones, Bryan; Watson, Neil
Effects of human chorionic gonadotropin on cognition and anxiety.</p> <p>(5) Boisvert, Michael; Veal, Anthea; Sherry, David
Interval timing by bumblebees.</p> <p>(6) Birdsall, Allison; Stillar, Amy; Csuzdi, Nicklaus; Donnelly, Megan; Saari, Matti
Neither lithium carbonate nor sodium fluoride alter enrichment effects in Wistar rats.</p> <p>(7) Lau, H. Lee
Neural plasticity in <i>Caenorhabditis elegans</i> during the Dauer developmental stage.</p> | <p>(8)* Barha, Cindy; Galea, Liisa A. M.
Hippocampal cell proliferation is differentially upregulated by different forms of estrogen.</p> <p>(9)* Choi, Fiona Y.; Brebner, Karen; Wang, Yu Tian; Phillips, Anthony G.
Disruption of regulated AMPA receptor endocytosis has protective effects against sensitized behavioural responses to repeated amphetamine.</p> <p>(10)* Robillard, Julie; Christie, Brian
Role of 5-HT6 receptors in hippocampal bidirectional synaptic plasticity.</p> <p>(11)* Satvat, Elham; Mallet, Paul E.
Effects of the Ginkgo biloba leaf extract, EGb761, on anxiety and adult neurogenesis.</p> <p>(12)* Spanswick, Simon; Lehmann, Hugo; Epp, Jonathan; Sutherland, Robert J.
Characterization of cognitive deficits related to slow neuronal death in the hippocampus: Potential for neurogenic treatment and restoration of function.</p> <p>(13)* Esopenko, Carrie; Borowsky, Ron; Cummine, Jacqueline; Sarty, Gordon
What would you do with it? The role of the premotor, motor, and somatosensory cortices in semantic processing.</p> <p>(14) Kossick, Emilie; Sykes Tottenham, Laurie; Alfano, Dennis
Prenatal testosterone exposure and recognition of emotional expressions in adults.</p> |
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| <p>(15) Fiset, Daniel; Blais, Caroline; Scheepers, Christoph; Schyns, Philippe; Mayer, Eugene; Caldara, Roberto
A single representational system is implicated in identity and expression recognition: Evidence from an acquired case of prosopagnosia.</p> <p>(16) Perry, Jason; Lupker, Stephen
The impact of shared neighbours in masked form priming.</p> <p>(17) Zamuner, Tania
Early speech perception facilitates lexical acquisition.</p> <p>(18)* Cummine, Jacqueline; Borowsky, Ron; Sarty, Gordon
The relationship between naming reaction time and functional MRI parameters in Broca's area and evidence for an independent dual-route model of reading behaviour and neurophysiology.</p> <p>(19) Clarke-Davidson, Constance; Westbury, Chris; Moroschan, Gail
Age differences in the effect of phonotactic probability and neighbourhood density in spoken word recognition.</p> <p>(20)* Schmidt, James R.; Besner, Derek
A response threshold account of response prediction in contingency learning: Why the "Proportion Congruence" effect has nothing to do with congruence.</p> <p>(21) Mulji, Rehman; Bodner, Glen E.
Proportion-modulated masked priming of fixed and free choices.</p> <p>(22)* Wong, Jady; Leboe, Jason
Rapid modulation of task switch costs based on probe location.</p> <p>(23) Lacouture, Yves; Fortin, Claudette
Interruptions in timing: Using the ex-Gaussian function to characterize the effect of break location.</p> | <p>(24)* Doan, Lori; Finnegan, Heather; Leboe, Jason
The influence of processing matches and mismatches on explicit recognition memory.</p> <p>(25)* Schoenherr, Jordan; Leth-Steensen, Craig; Petrusic, William
The involvement of working memory in confidence processing.</p> <p>(26) Schneider, Darryl W.; Logan, Gordon D.
The dynamics of retrieval from a hierarchical control structure.</p> <p>(27)* Duffels, Brian
Colour SNARC.</p> <p>(28) Leth-Steensen, Craig; Mauro, Daniel
An ex-Gaussian analysis of mental rotation response times.</p> <p>(29)* Warren, Christopher; Masson, Michael E. J.; Bub, Daniel N.
The involvement of motor representations in conceptual operations.</p> <p>(30)* Therrien, Megan; Collin, Charles; MacInnis, Joe
The role of high spatial frequencies on human navigation.</p> <p>(31) Robinson, Katherine M.; Dubé, Adam K.
Mathematical inversion: Conceptual, procedural, and factual knowledge, part II.</p> <p>(32)* Dubé, Adam K.
Skills underlying inversion shortcut use: The role of analogical reasoning and working memory.</p> <p>(33)* Walsh, Stephanie; Courage, Mary; Martin, Gerard
"I won't forget." Exploration of the change from cued episodic memory to prospective memory in children.</p> |
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| <p>(34) Devantier, Sarah L.; Minda, John Paul; Goldszmidt, Mark; Haddara, Wael
How physicians think about managing patients.</p> <p>(35)* Martin, Nadia; Fugelsang, Jonathan
Belief bias across two domains of reasoning.</p> <p>(36) Solcz, Stephanie; Fugelsang, Jonathan
Individual differences in deductive reasoning: Is smarter always better?</p> <p>(37) Capstick, Gary; Fouriez, George
The problems of the temporal order judgment method.</p> <p>(38) Meegan, Dan; Desroches, Pierre
Perceptual-motor dissociation in the auditory domain: Tempo perception versus locomotor synchronization.</p> <p>(39) Woloszyn, Michael
The relative impact of misapplied size constancy and conflicting cues on the perception of Muller-Lyer figures.</p> <p>(40)* Labossiere, Danielle; Leboe, Jason
The role of prime distractor fluency in negative priming effects.</p> <p>(41) Gleddie, Chris; Anderson, Nicole D.
The role of asymmetry in face discrimination.</p> <p>(42) Hatin, Bianca; Oriet, Chris.
Object updating influences the perceptual asynchrony illusion.</p> <p>(43)* Jalbert, Annie; Tremblay, Sebastien; Saint-Aubin, Jean
Similarity in memory for where and when: Killing two birds with one stone.</p> <p>(44) Ozubko, Jason; Joordens, Steve
Oblivious but able: Participants' sensitivity to the influence of familiarity but not its diagnosticity in old/new recognition decisions.</p> <p>(45)* Fawcett, Jonathan; Taylor, Tracy
The consequences of forgetting in a directed forgetting task.</p> | <p>(46) Brown, Aaron; Arbuthnott, Katherine
Mood, autobiographical memory, and verbal learning.</p> <p>(47)* Gopie, Nigel; MacLeod, Colin M.
Older people do not remember irrelevant information better: Evidence against inhibition failure in aging.</p> <p>(48) Wright, Sandra; Evans, John; Skinner, Darlene; Martin, Gerard
Spatial, rather than non-spatial cues, support memory retrieval in a discrimination reversal learning problem.</p> <p>(49) Smart, Sherri; Pearson, Pauline
The influence of relevance on the incidental encoding of colour: Evidence from implicit and explicit memory.</p> <p>(50) Jeffrey, Mitchell; Oriet, Chris; Pearson, Pauline
The effect of attribute relevance on implicit and explicit memory for faces: Further evidence of a dissociation.</p> <p>(51) Ferguson, Roy; Stolz, Jennifer A.
Changing the size of attentional focus: Implications for theories of selective attention.</p> <p>(52) Stinchcombe, Arne; Cyr, Andr  e-Ann; Gagnon, Sylvain; Marshall, Shawn; Hing, Malcolm; Finestone, Hillel
The role of attention and executive functioning in traumatic brain injury (TBI) drivers' reactions to simulated road challenges.</p> <p>(53) Risko, Evan F.; Blais, Chris; Stolz, Jennifer A.; Besner, Derek
Non-strategic contributions to putatively strategic effects in selective attention tasks: Proportion compatible manipulations reconsidered.</p> <p>(54) Puitandy, Mamata; Oriet, Chris
Can response selection and task-set reconfiguration be carried out in parallel?</p> |
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SATURDAY June 16

Paper Session 1 (9:00 – 10:30)

1.1 Animal Behaviour (Chair: Douglas Williams) David Strong Building (DSB), Room C103

- 9:00 Van Rooyen, Patrick; Santi, Angelo.**
***(55)** Pigeons' memory for time: Assessing the role of subjective shortening in a duration comparison task.
- 9:15 Williams, Douglas; Wall, Rhiana; Kenneth, Johns**
(56) Transfer of timed excitatory conditioning.
- 9:30 Cole, Mark; Peck, Margo; Quirt, Julie**
(57) Redundant visual and spatial cues: Which are learned best in a foraging task using rats.
- 9:45 Nemati, Farshad; Whishaw, Ian Q.**
(58) Modular control of visual exploration in the rat.
- 10:00 Sturdy, Christopher; Dawson, Michael R. W.; Nickerson, Carly; Bloomfield, Laurie;**
(59) Charrier, Isabelle
 Artificial neural networks, songbirds, and perception.

1.2 Perception (Chair: Ben Bauer) Cornett Building (COR), Room B108

- 9:00 Bauer, Ben**
(60) That's just mean: Further characterization of the perceptual averaging operator.
- 9:15 Matheson, Heath; McMullen, Patricia**
(61) Psychophysical quantification of configural face processing using just noticeable differences.
- 9:30 Oriet, Chris; Pettypiece, Robyn; Alfano, Dennis**
(62) A masked priming study of emotion perception in alexithymia.
- 9:45 MacKenzie, Kevin J.; Murray, Richard F.; Wilcox, Laurie M.**
***(63)** Modelling cue combination: Can perceived depth be predicted by JNDs?
- 10:00 Strierner, Christopher; Blangero, Annabelle; Rossetti, Yves; Pisella, Laure;**
***(64) Danckert, James**
 Alterations in orienting but not reorienting following prism adaptation in a patient with optic ataxia.
- 10:15 Jarick, Michelle; Jones, Jeffery**
***(65)** Observing static and dynamic speech gestures activate the motor system for speech production.

1.3 Symposium – Cognitive Psychology in the Real World: A Symposium of Reviews (Overview: Raymond Klein) Human & Social Development Building (HSD), Room A240

- (66) **Fawcett, Jonathan**
Of guns and geese: A general review of the 'weapon focus' literature.
- (67) **Ishigami, Yoko**
Is a hands-free phone safer than a handheld phone?
- (68) **O'Connor, Roisin M.; Stewart, Sherry H.; Greenwald, Anthony G.**
Measuring implicit cognitions in clinical and social sciences research: A review of the literature.
- (69) **Klein, Raymond; Lawrence, Michael; Eskes, Gail**
Attention in the ANT: Measuring the components of attention with emphasis on the Attention Network Test.
- (70) **Kingstone, Alan**
Cognitive ethology: A new research approach.

1.4 Memory I (Chair: Douglas Mewhort) Harry Hickman Building (HHB), Room 105

- 9:00 **Mewhort, Douglas; Johns, Elizabeth**
(71) Serial-position curves for lures in recognition memory.
- 9:15 **Breuer, Andreas; Masson, Michael E. J.**
*(72) Memory consolidation during rapid visual presentation: Investigations using indirect and direct memory tests.
- 9:30 **Houriha, Kathleen L.; MacLeod, Colin M.**
(73) Production during study benefits even to-be-forgotten words.
- 9:45 **Block, Richard A.**
(74) Intending to remember: Rapid mobilization of attention enhances memory.
- 10:00 **Uttl, Bob; Baltimore, Kimberly**
(75) Twenty-five years of research on prospective memory.
- 10:15 **Cuttler, Carrie; McLaughlin, Ryan; Graf, Peter**
(76) Better late than never: Marijuana use and prospective memory.

Paper Session 2 (11:00 – 12:30)

2.1 Language and Number Processes (Chair: Jamie I. D. Campbell) Cornett Building (COR), Room B108

- 11:00 Campbell, Jamie I. D.; Metcalfe, Arron W. S.**
(77) Arabic digit naming speed: Effects of number-processing context.
- 11:15 Metcalfe, Arron W. S.; Campbell, Jamie I. D.**
(78) Hearing the difference: Auditory and Arabic format and performance on basic multiplication and addition problems.
- 11:30 O'Malley, Shannon**
(79) Visual word recognition: Are the processing dynamics fixed?
- 11:45 Robidoux, Serje; Stolz, Jennifer A.; Besner, Derek**
(80) Visual word recognition: Control over interactive activation.
- 12:00 Azarbehi, Rostam; Piercey, Darren**
*(81) How wordlike is a word: A familiarity study.
- 12:15 Hargreaves, Ian; Pexman, Penny; Edwards, Jodi; Henry, Luke; Goodyear, Bradley**
*(82) The neural consequences of semantic richness.

2.2 Cognitive Processes I (Chair: William Petrusic) Human & Social Development Building (HSD), Room A240

- 11:00 Petrusic, William M.; Shaki, Samuel**
(83) Language and instruction dependent SNARC effects in comparative judgment.
- 11:15 Fouriez, George; Rubinfeld, Sara; Capstick, Gary**
(84) Natural statistical judgments of differences in average length.
- 11:30 Young, Meredith; Tangen, Jason; Eva, Kevin**
(85) Covariation judgments and implicit associations: An investigation into differential susceptibility to information order and expectation in senior and young adults.
- 11:45 Brasgold, Melissa; Pershin, Caroline; Stinchcombe, Arne; Gagnon, Sylvain**
(86) Visuo-spatial supra-span sequence learning: Mimicking old age performance through dual-task on the Hebb paradigm with younger adults.
- 12:00 Russell, Emily; Mehta, Rick**
(87) Effects of pretraining on acquisition of novel biconditional and negative patterning discriminations in human predictive learning.
- 12:15 Bodner, Glen E.; Breuer, Andreas; Johnson, Jeremy C. S.**
(88) Masked response priming is experience dependent at a 45-ms SOA.

**2.3 Reasoning (Chair: Valerie Thompson)
Harry Hickman Building (HHB), Room 105**

- 11:00 Thompson, Valerie A.; Prowse, Jamie; Beatty, Erin**
(89) Determinants of confidence in deductive reasoning.
- 11:15 Prowse, Jamie; Thompson, Valerie A.**
***(90)** Heuristic effects on confidence and accuracy: An extension of the probability heuristics model of syllogistic reasoning.
- 11:30 Faramarzi, Seyed Hossein; Speechley, William; Keramatian, Kamyar; Ngan, Elton T. C.**
***(91)** Human decision making: Activation of brain regions during associative and sequential processes.
- 11:45 Speechley, William; Murray, Christopher; Munz, Manuel; Ngan, Elton T. C.**
***(92)** Logic, intuition, and delusions.
- 12:00 Beatty, Erin; Thompson, Valerie A.**
(93) Influences on conclusion endorsement: Perspective and belief bias.
- 12:15 McCormick, Lila; Thompson, Valerie A.**
(94) Making a “good” decision: The role of consciousness, complexity, and duration.

**2.4 Human Neuroscience I (Chair: Patricia Sorensen)
David Strong Building (DSB), Room C103**

- 11:00 Sorensen, Patricia**
***(95)** Prenatal alcohol exposure impairs neurophysiological functioning even for correct responses.
- 11:15 Kouznetsov, Ivan; Keramatian, Kamyar; Christoff, Kalina**
(96) Localization of the medial prefrontal cortex using fMRI.
- 11:30 Gordon, Alan; Smith, Rachelle; Keramatian, Kamyar; Luus, Brian; Weinberg, Alex;**
(97) Smallwood, Jonathan; Schooler, Jonathan; Christoff, Kalina
Mind-wandering, awareness, and task performance: An fMRI study.
- 11:45 Gandhi, Mehul; Skelton, Ronald; Livingstone, Sharon; Gillingham, Susan**
(98) Gender differences in spatial navigation in a virtual water maze: Negation by landmarks.
- 12:00 Keramatian, Kamyar; Weiss, Rebecca; Christoff, Kalina**
(99) Topography of working memory representations within the human prefrontal cortex.
- 12:15 Bogutska, Tetyana**
(100) Psychophysiological rating as indicator of learning performance.

President's Symposium (2:00 – 3:30)
Cognitive Neuroscience of Decision Making (Chair: Clay Holroyd)
MacLaurin Building (MAC), Room A144

- (101) **Frank, Michael**
 Interactive dynamics of striato-cortical circuits in reinforcement learning and decision making.
- (102) **McLure, Samuel**
 Neural mechanisms of time discounting.

Paper Session 3 (4:00 – 5:30)

3.1 Cognitive Processes II (Chair: Matthew Dixon)
Human & Social Development Building (HSD), Room A240

- 4:00 Dixon, Matthew; Ruppel, Justin; Pratt, Jay; De Rosa, Eve**
 (103) Determining the fate of irrelevant information using the extradimensional shift task.
- 4:15 Young, Meredith; Brooks, Lee; Norman, Geoff**
 *(104) Familiar contextual cues bias categorical decision making.
- 4:30 Schneider, Darryl W.**
 *(105) Task-set inhibition in chunked task sequences.
- 4:45 Jamieson, Randall; Brooks, Lee**
 (106) Exemplar-based retrieval enables an illusion of category simplicity: Implications for theories of category coherency.
- 5:00 Allan, Lorraine; Siegel, Shepard; Hannah, Samuel; Crump, Matthew**
 (107) Merging associative and signal-detection accounts of contingency assessment.
- 5:15 Krätzig, Gregory P.; Campbell, Jamie I. D.**
 (108) Adaptive strategy choice in computational estimation: A role for feedback?

3.2 Attention (Chair: Thomas Spalek) Harry Hickman Building (HHB), Room 105

- 4:00 Spalek, Thomas; Poiese, Paola; Di Lollo, Vincent**
(109) Attentional involvement in pop-out visual search: Questioning the preattentive hypothesis.
- 4:15 Mathewson, Kyle; Tanaka, James**
(110) The detrimental effects of working memory load on a sustained attention task: The elimination of a cueing effect with distraction.
- 4:30 McDonald, John; Green, Jessica**
(111) Isolating event-related potential activity related to attentional control.
- 4:45 Green, Jessica; McDonald, John**
***(112)** Dynamics of attentional control revealed by beamformers of low-frequency brain waves.
- 5:00 Risko, Evan F.; Carriere, Jonathan S. A.; Smilek, Daniel**
***(113)** Fatigue kills: Sleep deprivation and visual attention from a systemic perspective.
- 5:15 Li, Hiroe; Graf, Peter**
***(114)** System navigation requires spatial attention; text entry requires verbal attention.

Symposium – Steroids and Neuroplasticity: From Copulation to Lactation (Overview: Jodi Pawluski) David Strong Building (DSB), Room C103

- *(115) van Anders, Sari; Hamilton, Lisa Dawn; Watson, Neil**
 Effects of sexual activity on women's testosterone.
- (116) Charlier, Thierry**
 Slow and fast effects of testosterone on brain morphology and male sexual behaviour.
- *(117) Pawluski, Jodi; Walker, Caroline; Galea, Liisa A. M.**
 Adult hippocampal neurogenesis is altered with maternal experience.
- (118) Olson, Andrea; Christie, Brian**
 Sex differences in CA1 stress-induced long term depression are not affected by prenatal ethanol exposure.

Poster Session 2 (5:30-7:00)
MacLaurin Building (MAC), Lobby

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| <p>(119) Boaz, Ron; Coleman, David; Pettitt, David; Villamin, Cedric; Birmingham, Elina; Sinnett, Scott; Kingstone, Alan
Break(point)ing the fourth wall.</p> <p>(120) Chica, Ana B.; Taylor, Tracy L.; Lupiáñez, Juan; Klein, Raymond M.
Two mechanisms underlying inhibition of return.</p> <p>(121) Ghorashi, Shahab; Di Lollo, Vincent; McDonald, John
Can the attentional spotlight really be split into eight sub-beams?</p> <p>(122) Sinnett, Scott; Cooper, Robbie; Kingstone, Alan
Quietly does it: Eye fixations of expert athletes.</p> <p>(123) Smith, Stephen; Sobkow, Kasmira; Mackenzie, Heather; Lukin, Alexander
Money doesn't buy happiness, but it does buy attention: Evidence from an 'emotional-blink' task.</p> <p>(124) Fennell, Christopher
Asymmetries in infants' ability to notice mispronunciations.</p> <p>(125) Kerswell, Linda; Siakaluk, Paul; Owen, William; Pexman, Penny
Pseudohomophone processing in the lexical decision task.</p> <p>(126) Locheed, Keri; Wilson, Kim; Rash, Josh; Siakaluk, Paul; Owen, William; Pexman, Penny; Sears, Christopher
The influence of sensorimotor information on semantic feedback and semantic processing.</p> <p>(127) Rash, Josh; Owen, William; Siakaluk, Paul; Borowsky, Ron
Contextual influences on addressed and assembled phonological processes.</p> <p>(128) Mageean, Sarah; Sheptycki, Amanda; Howell, Andrew
Flourishing: Frequency and achievement-related correlates of students' mental health.</p> | <p>(129) Coulombe, Chad; Honey, Lynne
When is dominance attractive?</p> <p>(130) Heapy, Nelson; Bloom, Allison
Posttraumatic stress in spouses of trauma victims.</p> <p>(131) Farthing, Jonathan; Cummine, Jacqueline; Borowsky, Ron; Chilibeck, Phil; Binsted, Gord; Sarty, Gordon
False activation in the brain ventricles related to task-correlated breathing in fMRI speech and motor paradigms.</p> <p>(132) Leth-Steensen, Craig
What the heck is going on when you add a covariate to a repeated measures design in SPSS?</p> <p>(133) Bouvier, Kristen; Powell, Russell
Conditioned emotional responses and implementation intentions: The aversive effects of simple plans.</p> <p>(134) LeBlanc, Jacinthe; Dumas, Claude
The effect of the starting position in a two-choice progressive elimination task in dogs.</p> <p>(135) Dawson, Michael R. W.; Kelly, Debbie M.; Spetch, Marcia L.
Using artificial neural networks to simulate the reorientation task.</p> <p>(136) Bloomfield, Jennifer; Thomas, William; Stillar, Amy; Saari, Matti; Weeks, Andrew
Methodological advances in the process of inducing maternal behaviour in virgin female rats.</p> <p>(137) Weinberg, Alex; Walker, Caroline; Lieblich, Stephanie; Spritzer, Mark D.; Galea, Liisa A. M.
Strain and housing conditions affect expression of defensive behaviours in adult male rats.</p> |
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| <p>(138) Fiset, Sylvain
Spatial memory in domestic dogs: Encoding of multiple cues for finding disappearing objects.</p> <p>(139) Lukin, Alexander; Williams, Douglas
Do delayed CS-US relationships support timed CRs under negative contingencies?</p> <p>(140) Eadie, Brennan; Christie, Brian
Decreased neurogenesis in a mouse model of Fragile X syndrome.</p> <p>(141) Ivanco, Tammy L.; O'Brien, Karen; Hartle, Kelly
Evaluating the long-term rewards of ethanol after early exposure.</p> <p>(142) Hartle, Kelly; Ivanco, Tammy L.
Anatomical consequences of early damage across the lifespan.</p> <p>(143) Morrish, Anna
Antagonism of the cannabinoid CB1 receptor accelerates the consummatory phase of sexual behaviour.</p> <p>(144) McLaughlin, Ryan; Hill, Matt; Morrish, Anna; Gorzalka, Boris
Local enhancement of cannabinoid CB1 receptor activity in the hippocampus has antidepressant-like effects in the forced swim test.</p> <p>(145) Moon, Il Soo; Cho, Sun-Jung; Lee, HyunSook; Jin, IngNyol
A method for combined fluorescence in situ hybridization and immunocytochemistry.</p> <p>(146) Moon, Il Soo; Cho, Sun-Jung; Lee, HyunSook; Jin, IngNyol
KCl treatment increases eIF4E mRNAs in the dendrites of cultured hippocampal neurons.</p> <p>(147) Lin, Conny H.; Davis, Justin R.; Li, Yun; Rankin, Catharine H.
Effects of ethanol on development of <i>C. elegans</i>.</p> | <p>(148) Tsang, Christine; Longfield, Danielle; Myles, Nicole; Morton, J. Bruce
The melody is in the words: The effect of simultaneous linguistic and musical information on infant perception for music and language.</p> <p>(149) Kogan, Cary; Collin, Charles; Bendell, Katherine; Therrien, Megan; MacLeod, Lindsey
Navigation abilities in Fragile-X syndrome: Evidence for pronounced visuospatial integration deficits.</p> <p>(150) O'Brien, Jamus; Sutherland, Robert J.
A novel model of episodic memory in the rat.</p> <p>(151) Schoenherr, Jordan
Category structure in the category-order effect.</p> <p>(152) Kantner, Justin; Lindsay, D. Stephen
Tests of constrained retrieval in recognition memory.</p> <p>(153) Bouvier, Kristen; Peace, Kristine A.
Alexithymia, dissociation, and social desirability: Investigating individual differences in the narrative content of false allegations of trauma.</p> <p>(154) Mulji, Rehman; Bodner, Glen E.
A role for concentrating in producing directed forgetting.</p> <p>(155) Unik, Lauren; Tiede, Heather; Leboe, Jason
A test of inhibitory versus interference accounts of retrieval-induced forgetting.</p> <p>(156) Maloney, Erin A.; Risko, Evan F.; Stolz, Jennifer A.; Fugelsang, Jonathan A.
Ironic effects of trait level working memory, cognitive load, and math.</p> <p>(157) Corcoran, Michelle; Vokey, John R.
Mining the ORE.</p> |
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| <p>(158) Myers, Megan; Pierce, Lara; Ayling, Oliver; Gandhi, Mehul; Kaur, Parminder; Maynard, Kim; Phillips, Rebecca; Rittenhouse, Zena; Unfreed, Kathleen; von Kleist, Nicole; Tanaka, James
Electrophysiology of other-race face recognition.</p> <p>(159) Ho, Cindy; Giaschi, Deborah
Low-level and high-level maximum motion displacement: Evidence from functional magnetic resonance imaging.</p> <p>(160) Planetta, Peggy J.; Servos, Philip
Tactile motion aftereffect.</p> <p>(161) Dastur, Farhad; Orban, Levente
Visual preferences for ripening fruits and vegetables in pregnant women.</p> <p>(162) Éthier-Majcher, Catherine; Fiset, Daniel; Blais, Caroline; Arguin, Martin; Bub, Daniel; Gosselin, Frédéric
Diagnostic features for uppercase and lowercase letter identification.</p> <p>(163) Sinnett, Scott; Hodges, Nicola; Chua, Romeo; Pak, Ricky; Kingstone, Alan
How expertise affects embodied cognition.</p> <p>(164) Dixon, Peter; McAnsh, Scott; Glover, Scott
Familiarity and reach trajectory.</p> <p>(165) Willenbockel, Verena; Tanaka, James; Fiset, Daniel
Time- and spatial-scale-dependent face perception.</p> | <p>(166) Young, Meredith; Maslowska, Justyna; Schmidt, Louis
Influence of shyness and sociability on categorization of facial expressions of emotion.</p> <p>(167) Joanisse, Mélanie; Gagnon, Sylvain
The dual life of spatial memory traces: Easily retrieved and easily disturbed.</p> <p>(168) Yamin, Stephanie; Stinchcombe, Arne; Cyr, Andrée-Ann; Gagnon, Sylvain; Marshall, Shawn; Hing, Malcolm; Finestone, Hillel
Examination of traumatic brain injured drivers' behavioural reactions to simulated complex roadway events.</p> <p>(169) Tiede, Heather; Mercure, Karen; Singer, Murray
When thinking more can lead to the "feeling of knowing" less.</p> <p>(170) Lucas, Joel; Leth-Steensen, Craig; Petrusic, William M.
Can switching between tasks enhance the SNARC effect?</p> <p>(171) Carroll, Steven R.; Petrusic, William M.
Confidence judgments are subject to numeric distance and anchoring effects.</p> <p>(172) Amsel, Ben; Cree, George
Insights into semantic decision making: A connectionist attractor network approach.</p> <p>(173) Tan, Shawn; Dixon, Peter
Effects of task switching on processing of number features.</p> |
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SUNDAY June 17

Paper Session 4 (9:00 – 10:30)

4.1 Human Neuroscience II (Chair: Kathy Mullen) David Strong Building (DSB), Room C103

- 9:00 Mullen, Kathy; Dumoulin, Serge; Hess, Robert**
(174) The fMRI response of the LGN and V1 to red-green, blue-yellow, and achromatic visual stimuli.
- 9:15 Krigolson, Olav; Mathewson, Kyle; Holroyd, Clay**
***(175)** Sequence learning and medial-front cortex: External versus internal error evaluation.
- 9:30 Mathewson, Kyle; Krigolson, Olav; Holroyd, Clay**
***(176)** The error-related negativity as a reinforcement learning signal in motor sequence acquisition.
- 9:45 Pierce, Lara; Krigolson, Olav; Tanaka, James; Holroyd, Clay**
(177) The ERN and reinforcement learning in a difficult perceptual expertise task.
- 10:00 Heisz, Jennifer; Shedden, Judith**
***(178)** Semantic, but not perceptual face learning modifies the N170 and N400 ERP components.
- 10:15 Baker, Travis; Holroyd, Clay**
***(179)** Which way do I go? Neural activation in response to feedback processing and decision making in a virtual T-maze.

4.2 Cognitive Processes and Methodology (Chair: Sam Hannah) Human & Social Development Building (HSD), Room A240

- 9:00 Crump, Matthew; Hannah, Samuel; Allan, Lorraine; Siegel, Shepard**
***(180)** Probing the stream: Flexible and robust representations support contingency knowledge in the streamed-trials procedure.
- 9:15 Hannah, Samuel; Crump, Matthew; Allan, Lorraine; Siegel, Shepard**
(181) Blocking the stream: Cue interaction effects in contingency judgments using the streamed-trial procedure.
- 9:30 MacLeod, Colin M.; Risko, Evan F.**
(182) The fallacy of the independent trials assumption in cognitive tasks.
- 9:45 Mewhort, Douglas**
(183) What to do about skew? Sometimes it helps to throw out information.
- 10:00 Armstrong, Blair; Bors, Doug; Cheng, Bonnie**
(184) Issues of score distribution: Should the randomization test be employed in all psychological investigations?

4.3 Memory II (Chair: Ian Neath) Harry Hickman Building (HHB), Room 105

- 9:00 Neath, Ian; Surprenant, Aimée; Little, Kathleen**
(185) Predicting memory performance in older adults from perceptual abilities.
- 9:15 Jamieson, Randall; Hannah, Samuel; Crump, Matthew**
(186) An episodic memory approach to associative learning.
- 9:30 Major, Jennifer; Hockley, William**
(187) A test of two different revelation effects using forced-choice recognition.
- 9:45 Ozubko, Jason; Joordens, Steve**
(188) Super Memory Bros: Evaluating a dual-process account linking the mirror effect to the pseudoword effect.
- 10:00 Uttl, Bob; Henry, Meaghen; Baltimore, Kimberly**
(189) Are smaller age declines on old/new recognition vs. free recall tests artifacts of easy memory tests?
- 10:15 Gao, Jie; Graf, Peter; Gillespie, Gemma; Field, Djuna**
(190) Discrepancy reactions are not necessarily linked with processing fluency.

Paper Session 5 (11:00 – 12:30)

5.1 Cognitive Processes III (Chair: Christine Tsang) Human & Social Development Building (HSD), Room A240

- 11:00 Tsang, Christine; Rubenstein, Richard; Holding, Ann**
(191) The development of sensitivity to novel musical scale structure: A comparison between infant and adult perception.
- 11:15 Droucker, Danielle; Tanaka, James**
(192) Reversing the other race effect in face recognition: A test of the perceptual expertise hypothesis.
- 11:30 Law, Iain; Pexman, Penny**
(193) Effects of physical affordances on word recognition.
- 11:45 Stevanovski, Biljana; Liu, Geniva; Bebbington, Chris; Klein, Raymond**
(194) Do signs and advertisements capture attention on a compensatory tracking task?
- 12:00 Uttl, Bob; Henry, Meaghen; Uttl, Jan**
(195) Human factors in avalanche avoidance and survival.
- 12:15 Liu, Geniva; Hutchinson, Daniel; Klein, Raymond; Maycock, Bryan**
(196) The “good eye”: Scan patterns of artists engaged in drawing.

5.2 Animal Neuroscience (Chair: Brian Christie) David Strong Building (DSB), Room C103

- 11:00 Christie, Brian**
(197) 2B or not 2B: Questioning NR2 subunit roles in synaptic plasticity.
- 11:15 MacIntosh, Sheila; Csuzdi, Nicklaus; Stillar, Amy; Birdsall, Allison; Donnelly, Megan;**
(198) Saari, Matti
Sensitivity to isoflurane anaesthesia in ten day old rats: A paradoxical effect?
- 11:30 Brown, Richard; Keenan, Mary-Elyn; Gunn, Rhian**
(199) Dissecting mouse models of human neuro-behavioural disorders: A DSM-IV for the mouse.
- 11:45 Lai, Guey-Jen; Lehmann, Hugo; Spanswick, Simon; Yamazaki, Hiroe; Sutherland, Robert J.**
(200) Behavioural deficit and functional recovery after granule cell death in hippocampus.
- 12:00 Brown, Robert; Balleine, Bernard**
(201) Striatal plasticity during the acquisition of instrumental responding.

Symposium – Perspectives on the Ubiquity/Tyranny of Time (Overview: Simon Grondin) Harry Hickman Building (HHB), Room 105

- (202) Grondin, Simon; Tobin, Simon; Gosselin, Andrélie**
Remembering duration retrospectively.
- (203) Block, Richard A.; Hancock, Peter A.; Zakay, Dan**
Cognitive workload affects duration judgments: Meta-analytic evidence.
- (204) Graf, Peter**
Don't let the bathtub overflow.
- (205) Lindsay, D. Stephen; Cohen, Anna Lisa; Kantner, Justin**
The intention interference effect.
- (206) Wilkie, Donald**
Discovery of ordinal timing.

Awards and Hebb Lecture (2:00 – 3:45) MacLaurin Building (MAC), Room A144

- (207) Donald O. Hebb Lecture**
Morris Moscovitch
The cognitive neuroscience of recent and remote episodic and semantic memory.

LONG PROGRAM

FRIDAY June 15

**Poster Session 1 (5:30 – 7:00)
Lobby, MacLaurin Building (MAC)**

(1)

Jonathan Beuk (jonb@biomed.queensu.ca),
Shelley Swain, Christian Heidbreder, Richard
Beninger

Queen's University

**Effect of SB-277011A, a selective
dopamine D3 receptor antagonist, on
expression of conditioned fear in rats.**

Dopamine D3 receptor antagonists attenuate responding to conditioned appetitive stimuli but few studies have examined their role in aversive conditioning. Rats (N=79) received 3 conditioned stimulus (CS)-shock pairings and then received 15 CS-alone presentations while lever pressing for food. Response suppression measured fear conditioning. Rats that received the selective D3 receptor antagonist SB-277011A (10.0 but not 0, 0.5 or 5.0 mg/kg ip) prior to CS-alone presentation sessions showed reduced suppression to the CS. Injections of SB-277011A (10.0 mg/kg) prior to CS-shock pairings did not significantly affect subsequent response suppression. Thus, SB-277011A dose-dependently attenuated expression but not acquisition of conditioned fear.

(2)

Carine Dias (d_carine@yahoo.fr), Fiona Y. Choi,
Anthony G. Phillips

University of British Columbia

**Renewal of amphetamine-seeking
behaviour induced by contextual cues:
Sex differences?**

Sex differences have been reported in reinstatement of drug-seeking behaviour. This study assessed the influence of sex and estrous cycle on the context-induced reinstatement of amphetamine-seeking behaviour. Male and female rats self-administered amphetamine in one context and then extinguished their responding in a second context. Subsequently, exposure to the drug-paired context renewed

amphetamine-seeking behaviour during four sessions. No sex differences were found in the acquisition phase and in test sessions. Estrous cycle failed to have any influence. Females exhibited higher responding during extinction, suggesting an enhanced arousal. Context-elicited renewal of amphetamine-seeking behaviour is not sexually dimorphic and is gonadal hormone-independent.

(3)

Douglas Grant (douglas.grant@ualberta.ca)
University of Alberta

**Effect of partial reinforcement on
acquisition and retention in delayed
matching with pigeons.**

Pigeons were trained in a delayed matching-to-sample task in which correct responses produced a primary reinforcer (2.5-s access to illuminated food) with a probability of 1.00, 0.50 and 0.25 across the three groups. In groups .50 and .25, correct responses that were not followed by primary reinforcement were followed by secondary reinforcement (0.5-s hopper light illumination and feeder raising). The three groups learned the matching task at approximately equivalent rates and showed comparable levels of retention during delay testing. Using partial primary reinforcement may significantly enhance the productivity of laboratories making extensive use of the delayed matching-to-sample procedure.

(4)

Brianna Turner (bjturner@sfu.ca), Bryan Jones,
Neil Watson

Simon Fraser University

**Effects of human chorionic gonadotropin
on cognition and anxiety.**

We used a rat model to simulate the pro-luteotropic hormonal profile consistent with the early stages of human pregnancy and assessed its effect on anxiety and cognition. Twenty

female rats were ovariectomised, implanted with progesterone and estrogen capsules, and then injected with either hCG or vehicle. Animals were then tested in both the Morris Water Maze (MWM) and the Elevated Plus Maze (EPM). hCG treated females exhibited impairments on the MWM, and were more anxious on the first day of EPM testing. The implications of these findings are discussed.

(5)

Michael Boisvert (mboisver@uwo.ca),
Anthea Veal, David Sherry
University of Western Ontario

Interval timing by bumblebees.

There are many contexts in which insects might be expected to use interval timing. We have shown that the performance of bumble bees *Bombus impatiens* on fixed interval schedules is comparable to that of vertebrates. In a more natural foraging task, bumble bees learned the duration of intervals that began with their own initiation of foraging and ended when a high quality flower became available at another site. Bumble bees learned the expected quality of nectar reward, its location, and its time of presentation. These results with bumble bees raise new questions about the cognitive mechanisms that underlie interval timing.

(6)

Allison Birdsall (allison_birdsall@hotmail.com),
Amy Stillar, Nicklaus Csuzdi, Megan Donnelly,
Matti Saari
Nipissing University

Neither lithium carbonate nor sodium fluoride alter enrichment effects in Wistar rats.

If environmental enrichment reduces the number of neurons in the cortex, apoptosis may mediate this effect. It has been reported that sodium fluoride may increase neuronal apoptosis, while lithium carbonate has the opposite effect. In this experiment, ninety male Wistar rats, PND24, were exposed to ten days of enriched or isolated housing while receiving distilled water, or water containing either sodium fluoride or lithium carbonate. The behavioural effects of the housing manipulation were not modified by either compound. However, both compounds altered body and kidney mass.

(7)

H. Lee Lau (leel@interchange.ubc.ca)
University of British Columbia

Neural plasticity in *Caenorhabditis elegans* during the Dauer developmental stage.

Caenorhabditis elegans is a microscopic worm that, in unfavourable environmental conditions, will enter an 'ageless' stage called Dauer; which allows them to live 5-8 times their normal lifespan. No one knows if Dauer worms can learn and remember. These experiments were designed to test short-term habituation to mechanosensory stimulation (non-localized Petri-dish taps and localized head touches) during the Dauer stage. The results showed that Dauer worms responded less after both 30 taps and 30 head touches than they did initially. Further investigation into the development of the mechanosensory circuit during Dauer will extend this finding.

(8)

Cindy Barha (cbarha@interchange.ubc.ca),
Liisa A. M. Galea
University of British Columbia

Hippocampal cell proliferation is differentially upregulated by different forms of estrogen.

Estradiol has been shown to promote hippocampal neurogenesis and cognition in young adult rats. The objective of the current study was to determine the acute effects of different forms of estrogen at different doses on cell proliferation in the dentate gyrus of adult ovariectomized female Sprague-Dawley rats at 30 minutes and 4 hours. Results indicate that, relative to vehicle, only estradiol benzoate dose-dependently increased cell proliferation at 4 hours. However, estradiol benzoate, 17 β -estradiol, estrone and 17 α -estradiol dose-dependently increased cell proliferation at 30 minutes but with different dose patterns. Thus different estrogens upregulate hippocampal neurogenesis in young adult female rats.

(9)

Fiona Y. Choi (fionac@interchange.ubc.ca),
Karen Brebner, Yu Tian Wang, Anthony G.
Phillips

University of British Columbia

Disruption of regulated AMPA receptor endocytosis has protective effects against sensitized behavioural responses to repeated amphetamine.

Aspects of drug addiction and neuroplasticity can be modeled in animals through the development of behavioral sensitization to repeated drug administrations. Long-term depression (LTD) in the brain has been proposed to be a cellular substrate for learning and memory, and more importantly, disruption of LTD through interference with regulated AMPA receptor endocytosis, has been found to block the expression of amphetamine-induced behavioral sensitization. We investigated the effects of repeated co-administration of an interference peptide during the induction of behavioral sensitization. Interestingly, the interference peptide attenuated the maintenance of sensitization and blocked the further development of sensitization to subsequent amphetamine injections in the absence of peptide.

(10)

Julie Robillard (jrobilla@interchange.ubc.ca),
Brian Christie

University of British Columbia

Role of 5-HT₆ receptors in hippocampal bidirectional synaptic plasticity.

Alzheimer's disease results in a decrease in 5-HT₆ activation, and behavioral studies indicate that antagonists for this receptor may have cognitive benefits. In the present experiments we examine the capacity for a novel 5-HT₆ receptor antagonist (RO4899237-002) to facilitate bidirectional synaptic plasticity in both the CA1 and dentate gyrus (DG) regions of the hippocampus. We found that within a narrow concentration window that RO4899237-002 enhanced LTP in the CA1 region but not the DG. In contrast, this concentration blocked LTD in both hippocampal subfields. These results indicate that 5HT₆ receptors can differentially affect bidirectional synaptic plasticity in the hippocampus.

(11)

Elham Satvat (satv2030@wlu.ca),
Paul E. Mallet

Wilfrid Laurier University

Effects of the Ginkgo biloba leaf extract, EGb761, on anxiety and adult neurogenesis.

The acute and chronic effects of EGb761 on anxiety and hippocampal neurogenesis in adult rats were assessed. Rats were injected with vehicle or varying doses of EGb761 (up to 75 mg/kg). Thirty minutes later, anxiety was assessed using the elevated plus maze, light/dark emergence, and social interaction tests. The highest dose tested increased selected measures of anxiety. Two weeks later, the effect of acute EGb761 on cell proliferation was examined in the same animals, but no significant effect was found. A second experiment in progress is examining the effects of chronic EGb761 on measures of anxiety and hippocampal cell survival.

(12)

Simon Spanswick¹ (simon.spanswick@uleth.ca),
Hugo Lehmann¹, Jonathan Epp², Robert J.
Sutherland¹

¹University of Lethbridge, ²University of British Columbia

Characterization of cognitive deficits related to slow neuronal death in the hippocampus: Potential for neurogenic treatment and restoration of function.

Adrenalectomy causes a selective loss of neurons in the granule cell layer of the hippocampus. This loss of neurons is associated with specific cognitive deficits in a variety of tasks. This region of the hippocampus is one of two in the brain that continues to produce new neurons throughout adulthood. We have developed a rat model that uses adrenalectomy to selectively damage the hippocampus, and behavioural and pharmacological enhancement of endogenous neurogenesis in an attempt to repair damaged hippocampal circuitry and restore cognitive functions.

(13)

Carrie Esopenko (carrie.esopenko@usask.ca),
Ron Borowsky, Jacqueline Cummine, Gordon
Sarty

University of Saskatchewan

What would you do with it? The role of the premotor, motor, and somatosensory cortices in semantic processing.

The purpose of the present study was to determine the extent of involvement of sensorimotor and premotor cortices in semantic processing. Participants were shown objects in picture/word format that are typically used by either their hands or feet, and were asked to describe how they would interact with it. fMRI results indicate a pattern of activation in the premotor cortex that is directly anterior to the somatotopic representation in the respective motor/somatosensory cortices (assessed separately for each participant). Behavioural results show faster decision RTs for highly ambiguous objects (as rated by the participants) presented in word format, but not picture format.

(14)

Emilie Kossick (kossemil@uregina.ca),
Laurie Sykes Tottenham, Dennis Alfano

University of Regina

Prenatal testosterone exposure and recognition of emotional expressions in adults.

Success in social relationships is dependent upon the ability to recognize and understand emotions. Recent studies have suggested that high prenatal testosterone exposure is associated with poorer emotional and social functioning in children. This study investigated whether the 2D:4D ratio (a putative marker of prenatal testosterone exposure) is associated with the ability to recognize emotional facial expressions in adulthood. Results indicated that adults who were prenatally exposed to relatively high testosterone concentrations performed more poorly than adults who were prenatally exposed to relatively low testosterone concentrations. This finding suggests a role for prenatal testosterone exposure in social abilities in adulthood.

(15)

Daniel Fiset¹ (fisetda@uvic.ca), Caroline Blais²,
Christoph Scheepers³, Philippe Schyns, Eugene
Mayer⁴, Roberto Caldara³

¹University of Victoria, ²Université de Montréal,
³University of Glasgow, ⁴Hopitaux Universitaires
de Genève

A single representational system is implicated in identity and expression recognition: Evidence from an acquired case of prosopagnosia.

Image classification techniques have revealed that different information supports face identification and expression recognition. A fundamental question remains: does facial information used for these tasks tap into a single or dedicated representation system? In face identification, PS, a prosopagnosic patient, does not use the eyes as normal subjects but the mouth. We asked PS and normal observers to categorize the expressions of faces using Bubbles. PS consistently used only the mouth, even for fear in which the eyes are highly diagnostic. These results support the hypothesis that a common representational system is used both in face identification and expression recognition.

(16)

Jason Perry (jperry23@uwo.ca),
Stephen Lupker

University of Western Ontario

The impact of shared neighbours in masked form priming.

In two experiments we evaluated the impact of shared neighbours (neighbours of both the prime and target - SNs) in a masked priming lexical decision task. In Experiment 1, partial-word primes (e.g., #loud for CLOUD) and targets shared either one or two neighbours. The priming effect was smaller for pairs with two SNs. In Experiment 2, nonword primes that were neighbours of only the target (e.g., gloud for CLOUD) primed targets with no neighbours, few neighbours, or many neighbours. The three conditions showed equivalent priming effects. The present results provide evidence that SNs play an important inhibitory role in lexical processing.

(17)

Tania Zamuner (tzamuner@psych.ubc.ca)
*Radboud University Nijmegen/University of
 British Columbia*

Early speech perception facilitates lexical acquisition.

Neighbourhood densities both facilitate and inhibit adult word recognition (Vitevitch & Luce, 1999). Infant speech perception research indicates that infants are more familiar with word-onsets. Early sensitivity to word-onsets could facilitate children's developing lexicons, such that densities might be greater for word-onsets. At the same time, emerging similarities might inhibit neighbourhoods in word-onsets due to lexical competition. Analyses of neighbourhood densities indicated that children's lexicons have more neighbours in word-onset position than found in the target language. Infants' early familiarity with word-onsets makes infants attuned to learn words that contrast in word-initial position. Thus, early speech perception facilitates lexical acquisition.

(18)

Jacqueline Cummine (jacqueline.cummine@usask.ca), Ron Borowsky, Gordon Sarty
University of Saskatchewan

The relationship between naming reaction time and functional MRI parameters in Broca's area and evidence for an independent dual-route model of reading behaviour and neurophysiology.

We examined the correlation between reaction time (RT) and the blood oxygenated level dependent (BOLD) response as a function of stimulus type. Participants named letter-strings aloud during an fMRI study. Naming RTs were recorded and BOLD parameters were extracted. Only pseudohomophone (PH) RTs were correlated with BOLD Width. Also, the relationship of independence that exists for predicting regular word accuracy given irregular word and PH accuracy, was present for RT, BOLD Width, BOLD Time to Peak, and BOLD Intensity. Thus, independence between reading systems exists for several behavioural and BOLD parameters, consistent with a dual-route model of reading.

(19)

Constance Clarke-Davidson (cmclarke@ualberta.ca), Chris Westbury, Gail Moroschan
University of Alberta

Age differences in the effect of phonotactic probability and neighbourhood density in spoken word recognition.

Perception of spoken words is affected by the likelihood of the segment sequences (phonotactic probability) and the number of similar words (neighbourhood density). Vitevitch & Luce (1998, 1999, 2005) suggested neighbourhood density is inhibitory due to lexical competition, but phonotactic probability is facilitatory due to phonetic processing at the sublexical level. In the present study, a sample of healthy older adults (ages 53-89) showed a pattern of results which suggested that inhibitory lexical effects become more dominant with age. Additionally, some puzzling results with young adults suggested the importance of the time course of spoken word recognition.

(20)

James R. Schmidt (j4schmid@watarts.uwaterloo.ca), Derek Besner
University of Waterloo

A response threshold account of response prediction in contingency learning: Why the "Proportion Congruence" effect has nothing to do with congruence.

In two new experiments and two reanalyses of Jacoby, Lindsay, and Hessels (2003) we demonstrate that Stroop congruency effects (slower colour identification for incongruent relative to congruent colour words) act independently of contingency effects (learning of word-response correlations). We observed facilitation in response times for trials in which the word correctly predicted the response (e.g., if ORANGE is presented most often in yellow, then ORANGE in yellow is identified faster than ORANGE in another colour). In the errors, there were both advantages and costs for when the word predicted the right (ORANGE in yellow) and wrong response (ORANGE in orange).

(21)

Rehman Mulji (reh@ucalgary.ca),
Glen E. Bodner
University of Calgary

Proportion-modulated masked priming of fixed and free choices.

We conducted a masked priming experiment (SOA = 105 ms) with arrow primes (>>, <<). On fixed trials, the targets were unambiguous (e.g., >>), and the proportion of congruent primes was .8 or .2. On free trials, the target was ambiguous (<>) and subjects made a free choice. Priming on fixed trials was greater in the .8-congruent group, and only this group was biased toward choosing the primed response on free trials. Consistent with a memory-recruitment account of priming, the influence of masked primes increased in the .8-congruent group, to a point where the masked primes biased subjects' free choices.

(22)

Jady Wong (wongj@cc.umanitoba.ca),
Jason Leboe
University of Manitoba

Rapid modulation of task switch costs based on probe location.

In an earlier study, on each of a series of trials, Wong et al. (2006) had participants either perform the same or different tasks in response to a prime and probe display. When the location of the probe word was associated with the requirement to switch tasks, the cost of switching was lower than when the probe's location predicted a task repetition. The current experiment tested whether the modulation of switch costs based on probe location reflects facilitated selection of the probe task or modulation of participants' bias to retrieve processes engaged in during the prime event.

(23)

Yves Lacouture (yves.lacouture@psy.ulaval.ca),
Claudette Fortin
Université Laval

Interruptions in timing: using the ex-Gaussian function to characterize the effect of break location.

Fortin and Massé (JEP:HPP, 2000) have demonstrated that expecting a break in timing lengthened temporal productions, the effect being proportional to prebreak duration. We reanalyzed the data from this study to characterize the shape of produced interval distributions, using the ex-Gaussian density

function. Using maximum likelihood estimation, we determined the best fitting distribution for each participant. The location effect appeared to be associated to changes in the shape of the distribution, mainly affecting the tau parameter. This result was particularly clear in trials with longer break durations. Implications are discussed in terms of underlying timing processes.

(24)

Lori Doan (umdoanla@cc.umanitoba.ca),
Heather Finnegan, Jason Leboe
University of Manitoba

The influence of processing matches and mismatches on explicit recognition memory.

A match in processing between processes associated with encoding and retrieval promotes successful remembering (Morris, Bransford, & Franks, 1977). We presented participants with a series of abstract shapes and induced either holistic or featural processing of these shapes during the study phase. Participants subsequently made old/new recognition judgments and remember/know judgments in response to a mix of previously studied and novel shapes. Using two variations of the remember/know procedure we obtained evidence that impairments of recognition due to a processing mismatch between processing of shapes during the study and test phases originate both from disruption of recollection and familiarity.

(25)

Jordan Schoenherr (psychophysics.lab@gmail.com), Craig Leth-Steensen, William Petrusic
Carleton University

The involvement of working memory in confidence processing.

This study examines the effects of working memory on the processing of subjective confidence. Participants were required to select the larger or smaller of two squares, after which they would indicate their level of confidence in their response. During this time, participants would randomize letters A-F aloud. Three randomization conditions were compared: no randomization, during decision, and randomization during confidence. This manipulation demonstrated that the confidence process appears to be partially separable from the primary decision, that the load has differential

effects on confidence depending on when it terminated, and that these effects differed over speed and accuracy stress.

(26)

Darryl W. Schneider (darryl.schneider@vanderbilt.edu), Gordon D. Logan
Vanderbilt University

The dynamics of retrieval from a hierarchical control structure.

The dynamics of retrieval from a hierarchical control structure were studied using a sequence-position cuing procedure, wherein subjects memorize two task sequences, then are cued to perform a task at one of the serial positions in a sequence. To investigate retrieval from different levels of the hierarchical control structure, the information that could be retrieved during a preparatory interval was manipulated, yielding different time-course functions. A model based on the idea that retrieval was time-consuming, cue-dependent, and structurally-constrained provided an excellent account of the data, illustrating how a structured representation can yield behavior that does not mirror that structure.

(27)

Brian Duffels (bduffels@ualberta.ca)
University of Alberta

Colour SNARC.

The SNARC effect (Spatial Numerical Association of Response Codes) describes the phenomenon wherein people respond faster to tasks involving low magnitude numbers with their left hand, and respond faster to larger numbers with their right hand. A mental representation of the ordinal number line has been implicated in these findings. The current study demonstrates that the SNARC effect is not limited to number. Differential results in response time by hand have been demonstrated with colour. The data indicate that people respond faster to red stimuli with their right hand, and faster to yellow stimuli with their left.

(28)

Craig Leth-Steensen (craig_leth_steensen@carleton.ca), Daniel Mauro
Carleton University

An ex-Gaussian analysis of mental rotation response times.

Five participants performed a mental rotation task with two separate types of three-dimensional Shepard and Metzler (1971) figures designed using realistic perspective, colour, and

lighting cues. On each trial, a pair of figures was presented that were either the same or mirror-images and differed in orientation by either 0, 30, 60, 90, 120, 150 or 180 degrees. Distributions of response times for "same" trials were fit with the ex-Gaussian revealing both that the non-linearity in the mean RT vs. angular departure relations and the differences in slopes across stimulus types were due to the ex-Gaussian (tail) parameter tau.

(29)

Christopher Warren (cwarren@uvic.ca),
Michael E. J. Masson, Daniel N. Bub
University of Victoria

The involvement of motor representations in conceptual operations.

The role of action representations in language comprehension was examined. Subjects listened to sentences and were cued to make a gesture related or unrelated to a manipulable object mentioned in the sentence. Gesture production was faster when the gesture was related to the object. Variations in sentence context showed dissociable priming effects between functional gestures (associated with an object's use) and volumetric gestures (associated with an object's shape). When the sentence described a non-physical interaction (i.e., the man looked at the calculator), only functional gestures were primed. When the sentence described a non-manual physical interaction (i.e., stepped on the calculator) only volumetric gestures were primed.

(30)

Megan Therrien (mther091@uottawa.ca),
Charles Collin, Joe MacInnis
University of Ottawa

The role of high spatial frequencies on human navigation.

We examined the effect of spatial frequency (SF) filtering on human navigation by having participants navigate through a series of computer-generated 3-dimensional mazes. Participants navigated through each maze five times, and the subsequent completion times were recorded so that learning curves could be analyzed. Participants' views of the mazes were SF filtered to various high- or low-pass cutoffs in order to assess the effects of limiting visual information on navigating one's environment. Results show a non-linear relationship between

SF and navigation performance, with an evident threshold in the low SF region. Experiments examining high SF regions are ongoing.

(31)

Katherine M. Robinson (katherine.robinson@uregina.ca), Adam K. Dubé
University of Regina

Mathematical inversion: Conceptual, procedural, and factual knowledge part II.

The development of the inversion concept on $d \times e \div e$ problems was further examined. Grades 6, 7, and 8 students completed (a) a procedural task solving inversion problems, (b) a conceptual task evaluating the inversion shortcut (i.e., no calculations are required to solve inversion problems), and (c) a factual task solving multiplication and division problems. Unexpectedly, no grade differences in inversion use were found in the procedural task. Many students disapproved of the shortcut in the conceptual task. Factual knowledge was higher for older students and multiplication problems. Some links between the tasks were found and will be discussed.

(32)

Adam K. Dubé (dube111a@uregina.ca)
University of Regina

Skills underlying inversion shortcut use: The role of analogical reasoning and working memory.

Researchers have used the inversion problem to assess whether or not children have the conceptual understanding that addition and subtraction are inverse operations. Interestingly, older children's inversion shortcut use on multiplication and division problems is lower than younger children's inversion shortcut use on addition and subtraction problems (Robinson, Ninowski, & Gray, 2006). The reason for the drop in older children's inversion shortcut use is not fully understood. Older children's inversion shortcut use on multiplication and subtraction problems may require two steps that are underpinned by two skills: (i) relationship recognition and (ii) application of knowledge. To determine if these skills/steps are involved, children from Grades 6 and 8 will solve inversion tasks, analogy word problems, and working memory tasks. The aim is to understand the role of analogical reasoning and working memory in the use of the inversion shortcut.

(33)

Stephanie Walsh (swalsh@warp.nfld.net),
Mary Courage, Gerard Martin
Memorial University of Newfoundland

"I won't forget:" Exploration of the change from cued episodic memory to prospective memory in children.

Prospective memory (ProM) is the ability to form a plan or intention and remember to carry it out later in the appropriate context. We examined ProM development in 3- to 6-year-olds using several different computer-based and naturalistic tasks. We argue that children younger than 5 years can succeed on some ProM tasks by using retrospective memory processes (e.g., rehearsal, cued episodic recall). Only 6-year-olds showed ProM when 24-hr delays prevented rehearsal and no distinctive cues were presented to aid recall. Thus, the sensory, perceptual, and cognitive processes that contribute to ProM are markedly immature until about age 6 years.

(34)

Sarah L. Devantier (sdevanti@uwo.ca), John Paul Minda, Mark Goldszmidt, Wael Haddara
University of Western Ontario

How physicians think about managing patients.

While medical diagnostic reasoning has been highly studied, there has been little inquiry into reasoning about ongoing patient management. Patient management involves aiding patients with chronic diseases (such as diabetes, cancer or HIV) to cope with or treat their illnesses. Using a forced-choice triad task, we provide a quantitative look at the differences between expert (endocrinologist) and novice (medical clerk) participants in the ways they categorize patients. Results show experts tend to group patients according to deep structures (i.e., how the patient will be managed) while novices tend to group patients based on surface structures (i.e., superficial characteristics, such as demographics or disease history).

(35)

Nadia Martin (n6martin@artsmail.uwaterloo.ca),
Jonathan Fugelsang
University of Waterloo

Belief bias across two domains of reasoning.

Abundant evidence exists demonstrating that people do not evaluate information in an atheoretical manner. Specifically, research in deductive and causal reasoning has

demonstrated that people evaluate information in light of their own beliefs. Using a within-subject design, we examined the degree to which beliefs and logic are used in these two tasks. Whereas the use of beliefs in the causal reasoning task was predictive of belief use in the deductive reasoning task, the use of logic was not correlated between the two tasks. These data will be discussed in terms of domain-general and domain-specific processes in reasoning.

(36)

Stephanie Solcz (ssolcz@uwaterloo.ca),
Jonathan Fugelsang
University of Waterloo

Individual differences in deductive reasoning: Is smarter always better?

The role of working memory (WM) in belief bias was examined by comparing performance of participants with high and low WM spans on categorical syllogisms. Only those with high WM spans showed the typical belief bias effect. Specifically, compared to those with low spans, high span participants were more successful at correctly rejecting unbelievable, invalid conclusions. These results refute the hypothesis that those higher in cognitive abilities should overcome biases and reason according to logic. Rather, these findings reveal how individual differences in WM promote different strategies, with those high in WM span reasoning with beliefs to their advantage.

(37)

Gary Capstick (gcaps102@uottawa.ca),
George Fouriez
University of Ottawa

The problems of the temporal order judgment method.

To test the fidelity of parameter estimation using the temporal order judgment (TOJ) method, we compared three methods for estimating points of subjective simultaneity (PSS). Participants were required to judge the synchrony of visual-auditory events using a TOJ method, a declaration method (simultaneous or not), and a choice method (choose synchronous standard over asynchronous alternative). PSSs were more variable for the TOJ. A second experiment showed that the TOJ method is more susceptible to response bias. It may not be a useful method for estimating these parameters.

(38)

Dan Meegan (dmeegan@uoguelph.ca),

Pierre Desroches
University of Guelph

Perceptual-motor dissociation in the auditory domain: Tempo perception versus locomotor synchronization.

There are many examples of perceptual-motor dissociations in the visual domain. For example, accurate motor adjustments are made when the location of a target is imperceptibly perturbed (Goodale et al., 1986). We report a similar phenomenon in the auditory domain. The auditory stimulus was a repetitive sequence of beats. In the perturbed condition, the tempo was occasionally perturbed by one beat per minute. In the unperturbed condition, the tempo remained constant. Imperceptibility was demonstrated by chance performance when choosing which condition contained perturbations. Motoric adjustments were demonstrated by perfect locomotor synchronization in both unperturbed and perturbed conditions.

(39)

Michael Woloszyn (mwoloszyn@tru.ca)
Thompson Rivers University

The relative impact of misapplied size constancy and conflicting cues on the perception of Muller-Lyer figures.

Using the method of adjustment, participants compared the line lengths of 'dumbbell' versions of Muller-Lyer (circles at the endpoints in place of arrowheads). Two popular explanations for the illusion, 'Conflicting Cues' (Day, 1989) and 'Misapplied Size Constancy' (Gregory, 1966), make opposing predictions concerning the perception of three configurations of the figure (small inner/small outer circles, small inner/large outer circles, and large inner/small outer circle). Specifically, increasing the size of the inner circles would result in little change in illusion size according to CC, but a large change according to MSC. Conversely, increasing the size of the outer circles would result in a large change in illusion size according to CC, but little change according to MSC. Contrary to expectations, the data were marginally supportive of MSC.

(40)

Danielle Labossiere
(umlabo05@cc.umanitoba.ca), Jason Leboe
University of Manitoba

The role of prime distractor fluency in negative priming effects.

Slower naming of a probe-display target that was just ignored as a distractor in the preceding prime display (negative priming) is commonly attributed to inhibition of that item during the prime event. Recently, distractor degradation was suggested to reduce the need to inhibit the prime distractor, also reducing negative priming (Grison & Strayer, 2001). The current study challenges that idea, demonstrating that the effect can be readily observed for degraded prime distractors, as long as the probe target is also similarly degraded. These results are most consistent with accounts of negative priming that emphasize the role of episodic retrieval processes.

(41)

Chris Gleddie (gleddiec@hotmail.com),
Nicole D. Anderson
Grant MacEwan College

The role of asymmetry in face discrimination.

The extent to which asymmetry information contributes to the discrimination of faces is unclear. We evaluated judgments of facial asymmetry using synthetic face stimuli where the geometric content can be precisely controlled (Wilson et al, 2002). Thresholds for discriminating asymmetrical from symmetrical faces were 2x lower than thresholds for discriminating the identity of a face ($3.0\% \pm 0.3\%$ vs $6.2\% \pm 0.7\%$ mean head radius respectively). Moreover, preliminary results suggest that asymmetry thresholds are similar for upright and inverted faces. We will argue that these results support the notion that different neural mechanisms underlie judgments of face asymmetry and face identity.

(42)

Bianca Hatin (bianca_hatin@hotmail.com),
Chris Oriet
University of Regina

Object updating influences the perceptual asynchrony illusion.

When two attributes are alternated asynchronously, a target that is first blue, then red for equal durations, is reported as red above chance. This perceptual asynchrony illusion has

been explained by the object-updating hypothesis, which argues that asynchronously-paired features are vulnerable to updating by the most recent feature value. According to object updating, when one colour is shown for longer than the other in this task, the colour shown last should bias colour reports. The colour of shorter duration was rarely reported when it appeared first, but frequently reported when it appeared last, consistent with object updating.

(43)

Annie Jalbert¹ (eaj6897@umoncton.ca),
Sebastien Tremblay², Jean Saint-Aubin¹
¹*Université de Moncton*, ²*Université Laval*

Similarity in memory for where and when: Killing two birds with one stone.

Two experiments examined the effects of visual similarity on short-term recall for location and order with visuo-spatial information. Similar or dissimilar coloured squares were serially presented. At recall, all coloured squares were presented at random at the bottom of the screen and participants had to place them at their location in their presentation order. Results revealed that similarity hinders memory for location and order, under quiet and articulatory suppression conditions. These results provide further evidence that similarity has a major impact on processing relational information in memory, whether it is where or when an object had been presented.

(44)

Jason Ozubko¹ (jdozubko@uwaterloo.ca),
Steve Joordens²
¹*University of Waterloo*, ²*University of Toronto Scarborough*

Oblivious but able: Participants' sensitivity to the influence of familiarity but not its diagnosticity in old/new recognition decisions.

The mirror effect is the finding that, in recognition memory paradigms, low frequency words give rise to more hits and fewer false alarms than do high frequency words. Dual-process accounts of the mirror effect suggest that the effect arises because low frequency words are more easily recollected but less familiar than high frequency words. The dual-process account makes specific predictions about situations in which familiarity is being disregarded. Bearing out these predictions, we show, across several experiments, that participants are insensitive to the diagnostic value of familiarity. Interestingly,

participants are able to disregard familiarity but only when they are explicitly aware that they should.

(45)

Jonathan Fawcett (jmfawcet@dal.ca),
Tracy Taylor
Dalhousie University

The consequences of forgetting in a directed forgetting task.

Item-method directed forgetting presents study words one at a time, each followed by an instruction to remember (R) or forget (F); a directed forgetting effect is defined as better memory for R than F items. The present study explored the consequences of F versus R instructions on stop signal inhibition and incidental learning of probe words. In Experiment 1, F instructions improved the ability to inhibit subsequent responding to visual probes by delaying responses. In Experiment 2, F instructions impeded later recognition of probe words presented after each instruction. Results support the view that forgetting is an active cognitive process.

(46)

Aaron Brown¹ (brown18a@uregina.ca),
Katherine Arbuthnott^{1,2}

¹*University of Regina*, ²*Campion College*

Mood, autobiographical memory, and verbal learning.

Two cognitive effects are associated with depression: impaired semantic organization in word list learning and overgeneral memory, observed when participants are instructed to retrieve specific autobiographical memories (AMs). The present study tested whether these two effects are related. Healthy participants completed two depression measures, the California Verbal Learning Test (CVLT), and retrieved 15 AMs. Results indicated that AM specificity and semantic clustering in the CVLT were not correlated, and neither was related to depression in this sample. CVLT cued recall was, however, negatively correlated with the number of general memories produced, indicating a retrieval locus of the overgeneral memory effect.

(47)

Nigel Gopie (ngopie@uwaterloo.ca),
Colin M. MacLeod
University of Waterloo

Older people do not remember irrelevant information better: Evidence against inhibition failure in aging.

A common complaint among the elderly is declining memory ability. Hasher and Zacks (1988) suggested that seniors' memory deficits are due to their reduced ability to selectively ignore irrelevant information. This account makes a key prediction—that older adults should remember irrelevant information (relatively) better than younger adults. This was investigated by having participants study words either by naming aloud their print colour and ignoring the words or by reading aloud the words and ignoring their print colours. Results from explicit and implicit memory tests of the words indicated that aging does not differentially affect memory for irrelevant information although it does influence memory in more subtle ways.

(48)

Sandra Wright¹ (swright@swgc.mun.ca),
John Evans², Darlene Skinner², Gerard Martin²
¹*Sir Wilfred Grenfell College*, ²*Memorial University of Newfoundland*

Spatial, rather than non-spatial cues, support memory retrieval in a discrimination reversal learning problem.

Rats (*Rattus norvegicus*) were trained on a left-right discrimination where non-spatial (light and noise on or off) or spatial (different rooms that were similar) cues were changed between the original and reverse discriminations. Rats that experienced spatial cue changes learned to reverse their responses in fewer trials than rats that experienced only non-spatial cue changes. In the second experiment, orientation changes (maze pointed west or north with choice point unchanged), but not changes in non-spatial cues, supported discrimination reversal learning. Thus, when rats learn conflicting responses they use spatial cues to access the correct response from memory.

(49)

Sherri Smart (sherrismart@shaw.ca),
Pauline Pearson
University of Winnipeg

The influence of relevance on the incidental encoding of colour: Evidence from implicit and explicit memory.

The contribution of explicit memory to implicit colour memory was assessed. Participants ($n=64$) reported identity or correctness of colour (implicit memory) of 32 previously-viewed images (half colour transformed) and 16 new images. Subsequently, participants viewed a black-and-white image of the object before each coloured image and reported the colour of the item during study (explicit memory). Colour was encoded even when irrelevant to the task (i.e., report identity). Priming occurred regardless of relevance of colour to the task, but only when the same task was completed during both study and test. However, priming was absent when explicit recall was incorrect.

(50)

Mitchell Jeffrey¹ (jm.jeffrey@hotmail.com),
Chris Oriet², Pauline Pearson¹
¹*University of Winnipeg*, ²*University of Regina*

The effect of attribute relevance on implicit and explicit memory for faces: Further evidence of a dissociation.

We investigated whether emotion is incidentally encoded and recalled in implicit and explicit memory tasks involving faces. Participants classified faces along one of two perfectly correlated attributes (gender or emotion). On each trial, explicit and implicit memory for the emotion expressed during the study phase was examined. Emotion was encoded irrespective of whether it was relevant to the study task, but was explicitly recalled above chance only when relevant at study. In the absence of explicit recall, encoding of emotion facilitated implicit recall only when it was relevant to the test task (i.e., emotion classification task).

(51)

Roy Ferguson (ra2fergu@watarts.uwaterloo.ca),
Jennifer A. Stolz
University of Waterloo

Changing the size of attentional focus: Implications for theories of selective attention.

Participants viewed a display of letter strings, one of which was uniquely coloured. The task was to make a lexical decision to the coloured

target, while ignoring the other stimuli. On half of the trials all of the distracting letter strings were nonwords, while on the other half of trials one of the distractors was a word. At issue is whether the presence of distractor words in the display will affect response latencies to targets. If such an effect is observed, could it subsequently be eliminated by altering the mental set of participants? These questions have implications for understanding how spatial attention is applied in physical space as well as being broadly relevant to early and late selection accounts of word processing.

(52)

Arne Stinchcombe¹ (astinchc@gmail.com),
Andrée-Ann Cyr¹, Sylvain Gagnon¹, Shawn Marshall², Malcolm Hing², Hillel Finestone
¹*University of Ottawa*, ²*Elisabeth Bruyère Research Institute*

The role of attention and executive functioning in traumatic brain injury (TBI) drivers' reactions to simulated road challenges.

This study examined the role of impaired attention and executive functioning in traumatic brain injury (TBI) drivers in high crash risk simulated road events. Twenty TBI drivers and 20 control participants were exposed to four challenging simulated roadway events during which behavioural reactions were recorded. Participants were also asked to perform a dual task during portions of the driving task and TBI individuals were administered neuropsychological measures of speed processing and executive functioning. Specifically, measures of attention included simple and choice reaction time, Useful Field of View, and dual task performance. Measures of executive functioning were assessed through Wisconsin Card Sorting Task, backwards digit span, verbal fluency, mental arithmetic, and mental control. Preliminary results with 15 participants indicate that the TBI group displayed significantly longer reaction times to the dual task than controls ($p < .05$) and that dual task performance correlated significantly with crash rate ($r = .57$). Further analysis will discuss the contribution of executive function impairment in TBI individuals' reactions to driving challenges.

(53)

Evan F. Risko¹ (efrisko@watarts.uwaterloo.ca),
Chris Blais², Jennifer A. Stolz¹, Derek Besner¹
¹University of Waterloo, ²University of California
at Berkeley

**Non-strategic contributions to putatively
strategic effects in selective attention
tasks: Proportion compatible
manipulations reconsidered.**

Researchers often use proportion manipulations in selective attention tasks to index attentional control. For example, in the Stroop task researchers have demonstrated that increasing the proportion of congruent trials increases the magnitude of the Stroop effect. This increase is taken to reflect an attentional strategy. In the present investigation we provide evidence that proportion manipulations do not exclusively index attentional control. Rather, a significant portion of the proportion effects observed is due to the uneven distribution of complete trial repetitions and alternations that occurs as a direct result of the proportion manipulation.

(54)

Mamata Puitandy (puitandym@hotmail.com),
Chris Oriet
University of Regina

**Can response selection and task-set
reconfiguration be carried out in parallel?**

The present study investigated whether response selection can be carried out in parallel with reconfiguration of task-set (Gilbert, 2005) or not (Oriet & Jolicoeur, 2003). We manipulated the time at which information about the required task (odd/even vs. more/less) and required response set (left keys vs. right) was provided. Results suggest that providing both pieces of information simultaneously yields no benefit in reducing switch cost over providing them separately, suggesting processing was either serial, or parallel but inefficient. However, unexpected response repetition interfered with task-set reconfiguration, suggesting that task-set reconfiguration cannot be done independently of response-set reconfiguration.

SATURDAY June 16

Paper Session 1.1: Animal Behaviour

9:00 – 10:30, DSB C103

Chair: Douglas Williams

9:00 – 9:15
(55)

Patrick Van Rooyen (manilla_6@hotmail.com), Angelo Santi
Wilfrid Laurier University

Pigeons' memory for time: Assessing the role of subjective shortening in a duration comparison task.

Pigeons were trained on a duration comparison task to peck one key if a comparison duration (C) was 1-s shorter than a standard duration (S), and another if C was 1-s longer than S. The duration values selected prevented identification of the correct response on the basis of S or C alone. After 75 sessions of training, evidence for subjective shortening was assessed by presenting equal duration pairs (S=C) at S-C delays of 1, 2, 4, and 8-s.

9:15 – 9:30
(56)

Douglas Williams¹ (d.williams@uwinnipeg.ca), Rhiana Wall¹, Johns Kenneth²
¹*University of Winnipeg*, ²*University of Manitoba*

Transfer of timed excitatory conditioning.

When an unconditioned stimulus (US) is delivered at a fixed time after the onset of a conditioned stimulus (CS), an excitatory conditioned response (CR) is normally acquired that peaks at the arrival time of the US. Two appetitive conditioning experiments with rats found that well-timed excitatory conditioning is also acquired when additional USs are introduced at random times alongside the fixed time US, and regardless of whether the overall correlative relationship between the CS and US is positive or negative. Timed excitatory conditioning developed in fewer sessions under a positive contingency, but did not readily transfer in test without the added presence of the randomly timed pellets.

9:30 – 9:45
(57)

Mark Cole (mcole@uwo.ca), Margo Peck, Julie Quirt
Huron University College at the University of Western Ontario

Redundant visual and spatial cues: Which are learned best in a foraging task using rats.

Rats searched for food on top of selected towers arranged in a 4 X 4 matrix. For two experimental groups, the location of food was initially indicated by both visual landmark (V) and relational arrangement pattern (P) cues, but then either the V or the P cues became unreliable. P cues neither enhanced performance when present nor debilitated performance when made unreliable, relative to control rats that had only V cues from the outset. V cues enhanced performance when present and debilitated performance when made unreliable, relative to control rats that had only P cues from the outset.

9:45 – 10:00
(58)

Farshad Nemati (farshad.nemati@uleth.ca), Ian Q. Whishaw
University of Lethbridge

Modular control of visual exploration in the rat.

The exploratory behavior of rats in an open field is organized to reference points for excursions such as idiosyncratically formed home bases, salient local cues, or the entry point. Rats with damage to striate visual cortex and control rats were tested in a series of open field tests. Measures of exploratory behaviour demonstrated that both groups organized their exploratory behaviour to salient local cues or their point of entry.

Nevertheless, rats with damage to striate visual cortex did not expand their exploration. These findings indicate that striate visual cortex contributes to the organization of exploratory behavior in rats.

10:00 – 10:15
(59)

Christopher Sturdy¹ (csturdy@ualberta.ca), Michael R. W. Dawson¹, Carly Nickerson¹, Laurie Bloomfield¹, Isabelle Charrier²

¹University of Alberta, ²Université Paris Sud

Artificial neural networks, songbirds, and perception.

Here we report on a study in which we used artificial neural networks to understand songbirds' perception of note-type categories. We previously reported on our efforts to model empirical data obtained from black-capped chickadees by training perceptrons to discriminate between two call note types and then testing network generalization to novel notes that were shifted in their entirety either up or down in frequency. Perceptron results were highly similar to those obtained with birds trained in an analogous task. In a second study that we are reporting this year, we trained perceptrons with notes in which individual acoustic features, both frequency and temporal, had been modified. Plots of network responses revealed that some acoustic features had significant effects on network responses, while others did not. Moreover, the context in which the network was trained determined network responses to test notes. The implications of using artificial neural networks for understanding empirical data and generating testable hypotheses for songbird perception will be discussed.

Paper Session 1.2: Perception

9:00 – 10:30, COR B108

Chair: Ben Bauer

9:00 – 9:15
(60)

Ben Bauer (benbauer@trentu.ca)
Trent University

That's just mean: Further characterization of the perceptual averaging operator.

Recent vision research (Ariely, 2001; Chong & Treisman, 2003, 2005) and auditory research (Holt, 2006; Ulanovsky et al., 2004) strongly suggest that observers accurately compute perceptual averages, perhaps automatically, and on several timescales. A visual averaging operator can drive gain-control, normalization, and coding efficiency. Evidence from three experiments addresses three questions: 1) can the operator be deployed locally showing insensitivity to nearby stimuli, 2) can biasing feedback to the observer alter their reported average, and 3) can the operator, currently known to act upon visual-spatial properties (e.g., size, tilt, direction), compute average brightness consistent with Stevens' Power Law?

9:15 – 9:30
(61)

Heath Matheson (heathmatheson@dal.ca), Patricia McMullen
Dalhousie University

Psychophysical quantification of configural face processing using just noticeable differences.

To quantify the degree to which upright faces are processed with a 'configural processor' relative to inverted faces and objects, psychophysical just-noticeable differences (jnds) were determined for displacement of critical features (e.g., eyes, windows) within upright and inverted faces and houses and other objects. Stimuli were closely matched on low-level visual features of size, luminance, and shape. Observers were most sensitive to displacement of critical features in upright faces. Sensitivity was equivalent for inverted faces, upright houses and inverted houses. This technique provides quantified differences in the degree to which configural processing is used.

- 9:30 – 9:45 (62)** Chris Oriet (chris.orient@uregina.ca), Robyn Pettypiece, Dennis Alfano
University of Regina
A masked priming study of emotion perception in alexithymia.
Emotion recognition ability varies across healthy individuals and can be measured with the Toronto Alexithymia Scale (TAS-20). We tested whether there are differences in the encoding of emotion between high and low scorers on the TAS-20. Happy and angry prime faces were displayed for 17 ms and followed by a second happy or angry masking face (400 ms). Prime-mask matches facilitated emotion classification in both groups, suggesting prime face emotion was interpreted similarly in high and low scorers. Nevertheless, high scorers were slower to identify the masking faces, suggesting that emotion-recognition difficulties may be better characterized as emotion-describing difficulties.
- 9:45 – 10:00 (63)** Kevin J. MacKenzie (kjmacken@yorku.ca), Richard F. Murray, Laurie M. Wilcox
York University
Modelling cue combination: Can perceived depth be predicted by JNDs?
It is widely held that cue combination is well described by the modified weak fusion model (MWF) posed by Landy et al. (1995). Domini and Caudek (2006) propose an alternative model, in which depth cues are not promoted to common metric units. Their IC model characterizes perceived depth in terms of JNDs and predicts that the perceived depth difference between two stimuli is proportional to the number of JNDs separating them. We evaluated this psychophysically for motion and stereo-defined stimuli. The JNDs were not proportional. This result poses no challenge to MWF, but necessitates revision of the IC model.
- 10:00 – 10:15 (64)** Christopher Striener¹ (chris.striener@gmail.com), Annabelle Blangero², Yves Rossetti², Laure Pisella², James Danckert¹
¹University of Waterloo, ²Espace et Action - INSERM
Alterations in orienting but not reorienting following prism adaptation in a patient with optic ataxia.
Prism adaptation alleviates attentional abnormalities in neglect. However, the mechanisms underlying these effects remain unknown. We examined the influence of prisms on attention in CF, a patient with optic ataxia due to bilateral superior parietal lesions. CF showed beneficial effects only for validly cued targets – a pattern of results different from that observed in neglect where the greatest improvement is for reaction times to invalidly cued targets. Therefore, superior parietal cortex may be necessary to demonstrate the full effects of prismatic adaptation. This is supported by neuroimaging studies showing changes in activity in this region in neglect patients following adaptation.
- 10:15 – 10:30 (65)** Michelle Jarick (michelle_jarick@hotmail.com), Jeffery Jones
Wilfrid Laurier University
Observing static and dynamic speech gestures activate the motor system for speech production.
With the discovery of 'mirror neurons', there is increasing evidence in favour of a perceptual-motor link for speech. We investigated this relationship using a Stroop-like paradigm with static and dynamic speech stimuli. Participants observed a speaker producing speech syllables (Experiment 1) or static photographs of implied speech gestures (Experiment 2), and pronounced a syllable that was compatible or incompatible, as quickly and accurately as possible. Results showed participants were fastest to pronounce the syllable when it was compatible with the speaker, than incompatible. This suggests that both static and dynamic speech gestures might 'prime' our motor system for speech production.

Paper Session 1.3 (Symposium): Cognitive Psychology in the Real World – A Symposium of Reviews

9:00 – 10:30, HSD A240
Overview: Raymond Klein

- (66) Jonathan Fawcett (jmfawcet@dal.ca)
Dalhousie University
Of guns and geese: A general review of the 'weapon focus' literature.
A frequently cited factor in the accuracy of eyewitness testimony is weapon focus, defined as a deficit in later memory for an event or visual scene containing a weapon. Weapon focus has been attributed to interference from the arousal/threat created by the weapon (arousal/threat hypothesis) or by attentional focus on the weapon (unusual item hypothesis). Laboratory, simulation and field studies are separately reviewed, with emphasis on their implications for both of these hypotheses. It is concluded that weapon focus is a small effect observed primarily in laboratory studies, and not easily generalized to real-world scenarios.
- (67) Yoko Ishigami (ishigami@dal.ca)
Dalhousie University
Is a hands-free phone safer than a handheld phone?
The nature of the differences in driving-related performance between hands-free (HF) and handheld (HH) phone drivers is not well understood. One purpose of this review is to evaluate the effects of the phone type on driving (-related) performance across different levels of driving fidelity in the published literature. Talking on a phone, regardless of the phone type, has negative impacts on driving (-related) performance especially in detecting and identifying events. Moreover, the HF phones were rarely found to be necessarily safer than the HH phones. These patterns are similar across different levels of fidelity in studies.
- (68) Roisin M. O'Connor¹ (rmoc@u.washington.edu), Sherry H. Stewart², Anthony G. Greenwald¹
¹*University of Washington*, ²*Dalhousie University*
Measuring implicit cognitions in clinical and social sciences research: A review of the literature.
Cognitive theory posits that beliefs and attitudes directly influence behavior. Accordingly, research examining clinically- (e.g., substance use) and socially- (e.g., stereotyping) relevant behaviors depends on proper assessments of these cognitions. Although frequently used, explicit, self-reports of beliefs/attitudes may be limited as they assume that behaviors are primarily a function of controlled, explicit cognitive processes. Conversely, theoretical and empirical evidence suggests that some behaviors are motivated by automatic, implicit cognitive processes (without conscious deliberation). The development of implicit cognition measures is a growing field in itself. The most promising, psychometrically sound, and widely used measures of implicit cognition will be reviewed.
- (69) Raymond Klein (ray.klein@dal.ca), Michael Lawrence, Gail Eskes
Dalhousie University
Attention in the ANT: Measuring the components of attention with emphasis on the Attention Network Test.
Attention, in its various guises, is at the foundation of awareness, the contents of consciousness, memory and the organization of behavior. Its components (e.g., orienting, alertness and cognitive control) have been conceptualized as isolable

subsystems mediated by overlapping neural networks. Developed by Posner and colleagues, the Attention Network Test is a simple, “Donderian,” tool that provides measures of the efficacy of these networks. We will describe this test and review studies of normal individuals, brain activity, genetics, development and patient groups using it. Variants of and alternatives to the ANT will be discussed, recommendations made, and directions for research identified.

- (70) Alan Kingstone (alan.kingstone@ubc.ca)
University of British Columbia

Cognitive ethology: A new research approach.

We all hope that our research will help us to understand and predict human cognition and behaviour as it occurs within the real-world (e.g., Smilek, Birmingham et al., 2006). This talk first identifies the principles that underlie lab-based investigations and concludes that adhering to them will fail to generate valid theories of human cognition and behaviour in natural settings. An alternative set of principles, and a novel research framework, called Cognitive Ethology is then presented. I discuss how Cognitive Ethology is distinct from, and complementary to, lab-based investigations.

Paper Session 1.4: Memory I

9:00 – 10:30, HHB 105

Chair: Douglas Mewhort

- 9:00 – 9:15
(71) Douglas Mewhort¹ (mewhortd@post.queensu.ca), Elizabeth Johns
¹*Queen's University*

Serial-position curves for lures in recognition memory.

We report short-term recognition memory experiments in which the lures were orthographic neighbours of the studied items. We assigned each lure to the serial position of its related study item. Contrary to familiarity theory, the serial-position curves for lures and targets were parallel; both showed marked recency. The results suggest that a lure is rejected because it contradicts a particular studied item, as in dual-process models or in the Iterative Resonance Model (Mewhort & Johns, 2005, Memory). Subsequent experiments using lures that were similar to two different studied items, however, did not support dual-process theory.

- 9:15 – 9:30
(72) Andreas Breuer (abreuer@uvic.ca), Michael E. J. Masson
University of Victoria

Memory consolidation during rapid visual presentation: Investigations using indirect and direct memory tests.

It has been claimed that for a briefly viewed object to be encoded into memory, the viewing episode must undergo a process of memory consolidation beyond the initial processing needed to identify the object. Previous demonstrations have supported the conclusion that memory consolidation can take several hundred milliseconds. However, we provide evidence that pictures shown for only 75 ms in a rapid serial visual presentation (RSVP) format with no motivation for processing beyond immediate identification do exhibit improved performance in an indirect test of memory (masked object identification) even when performance is at chance in a direct recognition memory test.

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- 9:30 – 9:45**
(73) Kathleen L. Hourihan (klhourih@watarts.uwaterloo.ca), Colin M. MacLeod
University of Waterloo
Production during study benefits even to-be-forgotten words.
The production effect—the fact that reading a word aloud during study improves explicit memory relative to reading a word silently (MacLeod et al., submitted)—was examined using item method directed forgetting. If enhanced item distinctiveness underlies the production effect, then it should occur even for words not learned intentionally. Participants studied a list of words by reading half aloud and half silently; half of each of these sets of words was followed by a Remember instruction and half was followed by a Forget instruction. Production benefited recognition of Remember and Forget words equally, consistent with the distinctive encoding account.
- 9:45 – 10:00**
(74) Richard A. Block (block@montana.edu)
Montana State University
Intending to remember: Rapid mobilization of attention enhances memory.
Several experiments focused on whether intending to remember information affects subsequent memory. A series of previously unfamiliar human face or nonface (ape, bird) stimuli were presented, with stimulus durations varying from 500 to 3000 ms, followed by recognition-memory testing. Compared to subjects in the incidental memory condition, those in the intentional memory condition showed better subsequent recognition memory. Although component processes involved in human face encoding are more automatic than are those involved in nonface encoding, intentional processes affect both face and nonface encoding. The mobilization of attentional resources to encode information for future remembering is effective within 500 ms.
- 10:00 – 10:15**
(75) Bob Uttl (uttlbob@gmail.com), Kimberly Baltimore
Red Deer College
Twenty-five years of research on prospective memory.
We rely upon prospective memory proper (ProMP) to bring back to awareness previously formed plans and intentions at the right place and time, for example, a plan to buy groceries en route home. ProMP is distinguished from other subdomains of prospective memory (ProM) such as vigilance and habitual ProM. Our meta-analysis of several hundred articles accumulated over 25 years of research on ProM reveals widespread methodological problems (e.g., ceiling effects, small sample sizes) and conceptual confusions (e.g., failure to distinguish between ProM subdomains) that undermine credibility of many studies. Moreover, the review shows that many aspects of ProM have received only minimal attention.
- 10:15 – 10:30**
(76) Carrie Cuttler (cuttler@psych.ubc.ca), Ryan McLaughlin, Peter Graf
University of British Columbia
Better late than never: Marijuana use and prospective memory.
Previous research suggests that marijuana use is associated with impairments in retrospective memory. Ours is the first study to examine the relationship between marijuana use and prospective memory, the ability to remember plans and intentions. Over 100 undergraduate students completed a survey that assessed marijuana use and prospective memory. Marijuana use was found to be associated with failures on prospective memory tasks that involve internal cues (e.g., I forget what I want to say in the middle of a sentence, I forget what I came in a room to get); it was also related to problems with punctuality.
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Paper Session 2.1: Language and Number Processes

11:00 – 12:30, Cor B108

Chair: Jamie I. D. Campbell

- 11:00 – 11:15 (77)** Jamie I. D. Campbell (jamie.campbell@usask.ca), Arron W. S. Metcalfe
University of Saskatchewan
Arabic digit naming speed: Effects of number-processing context.
Participants named two single digit numbers then performed simple addition or magnitude comparison (Experiment 1), multiplication or magnitude comparison (Experiment 2), and multiplication or subtraction (Experiment 3) on the same or on a different pair of digits. Digit naming time was approximately 15 ms slower when participants performed addition or multiplication relative to performing comparison or subtraction regardless of whether or not the same digit pair was involved. A letter naming control condition in Experiment 3 demonstrated that the effect was specific to digit naming. Number fact retrieval apparently can inhibit Arabic digit naming processes.
- 11:15 – 11:30 (78)** Arron W. S. Metcalfe (arron.metcalfe@usask.ca), Jamie I. D. Campbell
University of Saskatchewan
Hearing the difference: Auditory and Arabic format and performance on basic multiplication and addition problems.
LeFevre et al. (2001) examined effects of auditory vs. Arabic visual presentation formats on performance of simple multiplication. They observed a smaller problem-size effect with auditory than Arabic stimuli. For multiplication, we replicated the finding of a smaller problem-size effect for auditory than Arabic, but found the opposite pattern for addition whereby the problem-size effect was larger with auditory stimuli. Decomposition of mean RT into its ex-Gaussian components, Mu and Tau, demonstrated that the triple-interaction arose entirely in connection with Tau. This suggests that the effects of auditory vs. Arabic format on RT substantially reflected format-related shifts in procedural strategies.
- 11:30 – 11:45 (79)** Shannon O'Malley (somalley@artsmail.uwaterloo.ca)
University of Waterloo
Visual word recognition: Are the processing dynamics fixed?
The joint effects of word frequency and stimulus quality were additive on RT when participants read aloud high and low frequency words randomly mixed with nonwords at two levels of stimulus quality within a single block of trials. This directly contrasts with the interaction between word frequency and stimulus quality previously reported for the same word set when nonwords were excluded. This finding suggests that early processing dynamics underlying visual word recognition are variable rather than fixed. One way to explain these and other data appeals to the distinction between cascaded and thresholded modes of processing, with contextual factors determining which mode dominates.
- 11:45 – 12:00 (80)** Serje Robidoux (smrobido@watarts.uwaterloo.ca), Jennifer A. Stolz, Derek Besner
University of Waterloo
Visual word recognition: Control over interactive activation.
Stolz and Neely (1995) reported a three-way interaction between Semantic Relatedness, Stimulus Quality (SQ), and Association Strength such that the interaction between SQ and Relatedness is eliminated when prime-target pairs are weakly associated. In one proposed interactive activation account, feedback from semantics is blocked when the associations are weak, producing additivity between SQ and Relatedness provided that another level is thresholded. This account assumes that subjects know what type of associate (weak or strong) to expect in a block of trials. The

present experiment investigates the joint effects of SQ, Relatedness and Association Strength when strong and weak-associate trials are intermixed in a single block.

12:00 – 12:15
(81)

Rostam Azarbehi (r.azarbehi@unb.ca), Darren Piercey
University of New Brunswick

How wordlike is a word: A familiarity study.

It is assumed that familiarity is used to categorize words and nonwords during a lexical decision task. To test this assumption, participants were given normal lexical decision instructions during two words only lexical decision experiments where only high and low frequency words were presented. Participants categorized a significant portion of low frequency words as nonwords. In a third experiment, nonwords were introduced during the second half of the experiment. Introducing nonwords significantly decreased the proportion of low frequency words that were incorrectly categorized as nonwords. This provides further support for familiarity as a method of categorization.

12:15 – 12:30
(82)

Ian Hargreaves¹ (ishargre@ucalgary.ca), Penny Pexman¹, Jodi Edwards²,
Luke Henry¹, Bradley Goodyear²
¹*University of Calgary*, ²*Seaman Family MR Research Center*

The neural consequences of semantic richness.

Variability in semantic richness has been found to influence tasks that involve semantic processing. Relatively richer concepts facilitate lexical decision and semantic categorization judgments. The neural consequences of semantic richness (number of associates; NoA) were explored using fMRI in a categorization task. Behavioral results were consistent with past findings; however, imaging data revealed less cortical activity for concepts with a high number of associates (NoA) relative to activity for concepts with a low NoA. We argue that these results are consistent with faster settling of richer concepts (Plaut and Shallice, 1993) resulting in an attenuation of the cortical BOLD response.

Paper Session 2.2: Cognitive Processes I

11:00 – 12:30, HSD A240

Chair: William Petrusic

11:00 – 11:15
(83)

William M. Petrusic¹ (bill_petrusic@carleton.ca), Samuel Shaki²
¹*Carleton University*, ²*College of Judea and Samaria*

Language and instruction dependent SNARC effects in comparative judgment.

With English language readers as participants, in an experiment requiring pair-wise comparative judgments of numerical magnitude, typical SNARC effects were obtained. With comparisons of the remembered size of animals, SNARC depended on the direction of the instruction. In both cases the continua are organized from left to right corresponding to the direction of reading. On the other hand, with Hebrew and Arabic language readers, exactly the same configuration of findings was obtained except that the spatial direction in each domain was reversed; the mental continua are organized from right to left corresponding to the direction of reading.

11:15 – 11:30
(84)

George Fouriez (georgef@uottawa.ca), Sara Rubenfeld, Gary Capstick
University of Ottawa

Natural statistical judgments of differences in average length.

Participants (n=28) viewed 250 paired clusters of vertical bars, judging them into five response categories as being “possibly” or “definitely” taller on the right or left, or “too close to call.” Multiple regression showed decisions were primarily based on Critical Ratio (CR), the pre-Student version of the t-test, calculated implicitly on bar height. D-

prime versus CR plots were straight. Participants were also influenced by number, choosing the side with more bars, and by the apparent disarray as indexed by Lathrop's lambda. The implicit decision to say "possibly" corresponded to a one-tailed alpha of 0.05.

11:30 – 11:45
(85)

Meredith Young¹ (youngme2@mcmaster.ca), Jason Tangen², Kevin Eva¹
¹*McMaster University*, ²*University of Queensland Australia*

Covariation judgments and implicit associations: An investigation into differential susceptibility to information order and expectation in senior and young adults.

Our ability to assess the relationship between events in the world is necessary for everyday functioning. In Experiment 1, undergraduates and senior adults evaluated the correlation between levels of chemical and plant growth, which shifted midway through the trial sequence. While undergraduates adjusted their predictions in light of this change, but responses of senior adults suggested an interaction between prior expectation and information order. Experiment 2 replicated these results using a modified Implicit Associations Task; an interaction between test order and social congruency was observed in seniors, but not in undergraduates. We will discuss these results as examples of the distortion of observed relationships.

11:45 – 12:00
(86)

Melissa Brasgold (mbras088@uottawa.ca), Caroline Pershin, Arne Stinchcombe, Sylvain Gagnon
University of Ottawa

Visuo-spatial supra-span sequence learning: Mimicking old age performance through dual-task on the Hebb paradigm with younger adults.

Research using Hebb's (1961) paradigm revealed a visuo-spatial sequence learning (VSSL) deficit in older adults. Two studies attempted to mimic the effects of age on VSSL by decreasing attentional resources via a dual task. Using the Hebb, 118 young adults (Exp 1: 68; Exp 2: 50) performed immediate serial recall of 25 span+2 item sequences of squares, with a recurring sequence presented every third trial. A dual task consisted of verbally repeating orally presented letters during sequence encoding (Exp 1) or retrieval (Exp 2). In each study, both control and experimental groups demonstrated learning of the repeated sequence, indicating that the dual task manipulations failed to mimic the age-related deficit.

12:00 – 12:15
(87)

Emily Russell (065831r@acadiau.ca), Rick Mehta
Acadia University

Effects of pretraining on acquisition of novel biconditional and negative patterning discriminations in human predictive learning.

Three experiments used a predictive learning task to assess two hypotheses: that pretraining with a configural (rather than elemental) discrimination would improve acquisition of target configural discriminations, and that acquisition of a biconditional target discrimination would be faster than a negative patterning target discrimination. Each experiment employed a 2 x 2 between-subjects design with pretraining (configural or elemental discrimination) and target discrimination (biconditional or negative patterning) as factors. Pretraining had little influence on acquisition of the target discriminations, and the negative patterning discrimination was learned faster than the biconditional discrimination. Implications for theories of associative learning are discussed.

- 12:15 – 12:30
(88) Glen E. Bodner¹ (bodner@ucalgary.ca), Andreas Breuer², Jeremy C. S. Johnson¹
¹University of Calgary, ²University of Victoria

Masked response priming is experience dependent at a 45-ms SOA.

Response priming refers to facilitation when a prime and target bias the same binary response. We examined whether response priming with 45-ms masked primes is automatic, is mediated by top-down action triggers, or reflects conscious stimulus-response learning. To this end, we varied whether masked primes repeatedly or never appeared as targets. Contrary to the automatic-priming account, primes were only effective when they also occurred as targets. Contrary to the action-trigger account, the size of the target set did not modulate this pattern. We conclude that response priming is experience dependent at short SOAs, supporting a stimulus-response learning account.

Paper Session 2.3: Reasoning

11:00 – 12:30, HHB 105

Chair: Valerie Thompson

- 11:00 – 11:15
(89) Valerie Thompson (valerie.thompson@usask.ca), Jamie Prowse, Erin Beatty
University of Saskatchewan

Determinants of confidence in deductive reasoning.

The available evidence suggests that confidence in deductive inferences is based on variables that are not linked to the execution of analytic processes. A strong test of this conclusion is afforded by mental models theory (Johnson-Laird & Byrne, 1991), which assumes that problem difficulty is determined by representational complexity. Reasoners solved syllogisms that varied in terms of the ease with which they could be represented. Whereas some easily represented syllogisms engendered confidence, others did not. We propose the data are better explained by Chater and Oaksford's (1999) probability heuristic model, which posits a limited role for analytic processes in deductive reasoning.

- 11:15 – 11:30
(90) Jamie Prowse (jamie.prowse@usask.ca), Valerie A. Thompson
University of Saskatchewan

Heuristic effects on confidence and accuracy: An extension of the probability heuristics model of syllogistic reasoning.

Presently a great deal is known about the factors affecting accuracy in reasoning, yet there is little known about the factors that influence confidence. Predictions by Chater & Oaksford's probability heuristics model (1999) suggest that individuals rely on relatively simple heuristics rather than deductive logic when solving syllogisms. Two studies were conducted in which we varied informativeness of the premises and the attachment of the conclusions. As predicted by the model, individuals expressed higher confidence for the more informative premises; however contrary to the model, individuals' confidence was higher for conclusions that were not derived from the attachment heuristic.

- 11:30 – 11:45
(91) Seyed Hossein Faramarzi (shf357@gmail.com), William Speechley, Kamyar Keramatian, Elton T. C. Ngan
University of British Columbia

Human decision making: Activation of brain regions during associative and sequential processes.

Human decision-making has typically been broken into two interacting cognitive processes. This dual-process model identifies an automatic, intuitive, and effortless process and a controlled, deliberative, and effortful one. While the operations of these two streams are well characterized, the precise underlying neural networks are still

largely unknown. Using fMRI, we measured cortical activity in response to a sequential reasoning task (deliberative reasoning) and an object selection task (associative reasoning). These tasks showed significant activations in the dorsolateral prefrontal and posterior parietal cortices to be associated with the deliberative task, and inferior temporal cortex activity during the associative task.

11:45 – 12:00
(92)

William Speechley (willspeechley@yahoo.ca), Christopher Murray, Manuel Munz,
Elton T. C. Ngan
University of British Columbia

Logic, intuition, and delusions.

Delusions, a cardinal feature of schizophrenia, are fixed false beliefs that are firmly held despite overwhelming contradictory evidence. We propose that a failure in the normal interaction between logical and intuitive decision-making processes may account for this phenomenon. In particular, delusional individuals may fail to adequately engage logical reasoning when the two streams diverge, enabling an erroneous triumph of intuition over reason. Using simple conditional statements we were able to induce either convergence or divergence between the two processes. Divergence caused substantial deficits in patient performance not evident in controls, providing compelling preliminary support for our novel model of delusions.

12:00 – 12:15
(93)

Erin Beatty (erin.beatty@usask.ca), Valerie A. Thompson
University of Saskatchewan

Influences on conclusion endorsement: Perspective and belief bias.

The goal of this study was to investigate if changing perspectives from ones own to another promotes the engagement of analytic processing and in turn would reduce belief bias. Participants evaluated four research vignettes (two consistent and two inconsistent with previously assessed beliefs) and indicated whether data supported a correlation between two variables. Belief bias was much smaller when participants' evaluations were from the researcher's perspective than from their own. This is the first study that saw such a reduction in belief bias across perspectives. Performance was also correlated with a measure of thinking dispositions.

12:15 – 12:30
(94)

Lila McCormick (lila.mccormick@usask.ca), Valerie A. Thompson
University of Saskatchewan

Making a “good” decision: The role of consciousness, complexity, and duration.

We investigated the counterintuitive findings of Dijksterhuis and colleagues (Dijksterhuis, 2004; Dijksterhuis & van Olden, in press) that unconscious decisions are superior to conscious decisions. In three experiments, participants were presented with four hypothetical options and asked to rate the attractiveness of each in conscious (provided time to think about options), unconscious (provided with a distracter task), and immediate conditions. We varied decision complexity and the decision making duration. All three experiments failed to replicate Dijksterhuis and colleagues' findings, instead revealing that conscious decisions produced more post-choice satisfaction than unconscious decisions and were equally good or superior on normative measures.

Paper Session 2.4: Human Neuroscience

11:00 – 12:30, DSB C103

Chair: Patricia Sorensen

11:00 – 11:15
(95)

Patricia Sorensen (patti.sorensen@uleth.ca)
University of Lethbridge

Prenatal alcohol exposure impairs neurophysiological functioning even for correct responses.

To evaluate the neurophysiological functioning of adults with fetal alcohol spectrum disorders (FASD), individuals with FASD, matched controls and university subjects completed two versions of the virtual Morris water task. The FASD group displayed significantly less activity for independent components (ICA) with modelled sources in the temporal and parietal cortices. Differing levels of component activity between the non-spatial cue and the spatial place trials distinguished the FASD group from the two control groups. Furthermore, FASD subjects did not maintain correlated activity among cortical regions across adjacent 100 ms epochs. These electroencephalographic differences were displayed despite analyzing only correct responses.

11:15 – 11:30
(96)

Ivan Kouznetsov (ivank@shaw.ca), Kamyar Keramatian, Kalina Christoff
University of British Columbia

Localization of the medial prefrontal cortex using fMRI.

The medial prefrontal cortex is known to play an important role in multiple domains of mental functioning, including emotional awareness, theory of mind, and self-related processing. In this study, we aimed to develop a functional localizer procedure to identify the medial prefrontal cortex at the individual level. Subjects made judgments about either their emotional response to a series of images or the physical characteristics of the images. Significant activation of the medial prefrontal cortex was observed. This task will be used to implement real-time fMRI training for the voluntary control of activation in medial PFC.

11:30 – 11:45
(97)

Alan Gordon¹ (amgordon@psych.ubc.ca), Rachelle Smith¹, Kamyar Keramatian¹, Brian Luus¹, Alex Weinberg¹, Jonathan Smallwood², Jonathan Schooler¹, Kalina Christoff¹

¹*University of British Columbia*, ²*University of Aberdeen*

Mind-wandering, awareness, and task performance: An fMRI study.

Mind-wandering is a vibrant and multifaceted cognitive process, but the neural underpinnings of its various components are poorly understood. In this study fMRI was used to examine 15 subjects given random thought probes about the extent and awareness of their mind-wandering during a sustained-attention paradigm. A richer neural activation was observed for mind-wandering without awareness than with awareness, suggesting the presence of a richer cognitive content. Different levels of behavioural accuracy and types of intrusive thoughts were associated with distinct neural signature. This study thus provides a neuroimaging foundation for examining the role of awareness and task performance in mind-wandering.

11:45 – 12:00
(98)

Mehul Gandhi (mehgan@uvic.ca), Ronald Skelton, Sharon Livingstone, Susan Gillingham

University of Victoria

Gender differences in spatial navigation in a virtual water maze: Negation by landmarks.

We used a virtual Morris Water Maze to compare navigational cognition in male and female undergraduates (n = 16, 15). The task required the participants to find an invisible target located in a fixed location within a large round arena housed in a square room with windows that provided a view of a distant landscape. At first, when there were

objects on the arena wall which could be used to find the target location, there were no gender differences, but when these objects were removed, forcing the participants to rely on distant landscape features, males were significantly faster.

12:00 – 12:15
(99)

Kamyar Keramatian (kamyar@psych.ubc.ca), Rebecca Weiss, Kalina Christoff
University of British Columbia

Topography of working memory representations within the human prefrontal cortex.

This study aimed to examine the topography of working memory (WM) representations within the human prefrontal cortex (PFC). A posterior-to-anterior gradient of activation was hypothesized within the PFC, with more abstract WM representations situated more anteriorly. The present fMRI study was conducted to directly test this hypothesis. Subjects were asked to keep track of verbal stimuli in a 2-back WM task. Stimuli were clustered in blocks of highly abstract, intermediate abstract or highly concrete nouns. The results showed an anterior-to-posterior topography within PFC providing support for a possible topographical organization within PFC according to levels of abstraction.

12:15 – 12:30
(100)

Tetyana Bogutska (tbogutska@yahoo.ca)
York University, Kamyanets-Podilsky University

Psychophysiological rating as indicator of learning performance.

Among the psychophysiological characteristics which are used to estimate the preschoolers readiness for learning it is difficult to single out a leading one. That is why we suggest determining a complex of psychophysiological parameters and using that basis to calculate an integral indicator as a psychophysiological rating (PR). PR includes IQ, complex sensomotor reaction time, complex reaction time of choice, speed of information processing, brain capacity, ratio of strength of the nervous system, accuracy of object tracking reaction. Our research has shown that PR credibly correlates with learning performance results.

President's Symposium: Cognitive Neuroscience of Decision Making

2:00 – 3:30, MAC A144

Chair: Clay Holroyd

(101)

Michael Frank (mfrank@u.arizona.edu)
University of Arizona

Interactive dynamics of striato-cortical circuits in reinforcement learning and decision making.

The basal ganglia and frontal cortex interact intimately to facilitate adaptive action plans while suppressing those that are less adaptive. The dynamics of this circuitry in reinforcement learning and decision making have been explored via a series of inter-related computational models. The models suggest distinct neurobiological mechanisms associated with (a) action selection; (b) learning the probability of an action leading to reward; (c) holding in mind graded values of reinforcement magnitude in working memory; and (d) dynamic modulation of decision thresholds as a function of response conflict. I will present novel predictions arising from these models that have been confirmed in experiments with multiple patient populations, pharmacological manipulation, neuroimaging and genetics.

- (102) Samuel McClure (smcclure@princeton.edu)
Princeton University

Neural mechanisms of time discounting.

Deciding between goods available at different times in the future requires discounting the value of the options based on the delay until their delivery. Behaviorally, people and other animals appear to discount value sharply over the near term and at a more modest rate over the long term. I will present experiments suggesting that this behavior results from the influence of two separate brain systems. Regions associated with the mesolimbic dopamine system are preferentially activated by rewards available in the immediate future. By contrast, regions in the lateral prefrontal cortex and posterior parietal cortex show far less sensitivity to delay.

Paper Session 3.1: Cognitive Processes II

4:00 – 5:30, HSD A240

Chair: Matthew Dixon

- 4:00 – 4:15
(103) Matthew Dixon (matt.dixon@utoronto.ca), Justin Ruppel, Jay Pratt, Eve De Rosa
University of Toronto

Determining the fate of irrelevant information using the extradimensional shift task.

Selective attention highlights goal-relevant information while suppressing irrelevant information. We created two versions of an extradimensional shift task to examine the fate of irrelevant information using coloured shapes. In the negative priming (NP) version participants responded to the same exemplars within the colour dimension, whereas in the “learned inhibition” (LI) version colour exemplars changed. In both versions, participants were then probed with the irrelevant shapes. The behavioural decrement during probe trials was greater and more sustained during LI relative to NP; thus the performance cost varied as a function of whether the colour context remained the same or changed.

- 4:15 – 4:30
(104) Meredith Young (youngme2@mcmaster.ca), Lee Brooks, Geoff Norman
McMaster University

Familiar contextual cues bias categorical decision making.

Learning to make medical diagnoses is an interesting example of categorical decision-making. Participants learned rules for pseudo-psychiatric diagnoses, and practiced on case vignettes which included both diagnostic (disease features) and non-diagnostic information (name, age, familial situation, etc.). At test, participants diagnosed cases that contained two equiprobable diagnoses presented in the context of a familiar patient description. Despite knowing diagnostic rules, participants assigned significantly more diagnostic probability to the diagnosis supported by the familiar patient descriptions on immediate, 24-hour, and one-week delays. The impact of familiar patient descriptions increased with delay, although memory for the rule did not decrease significantly.

- 4:30 – 4:45
(105) Darryl W. Schneider (darryl.schneider@vanderbilt.edu)
Vanderbilt University

Task-set inhibition in chunked task sequences.

The relationship between chunking and task-set inhibition in task sequences was investigated to determine whether within-chunk facilitation reduces the $n-2$ repetition cost attributed to task-set inhibition. An experiment is reported in which subjects were induced to chunk sequences such that $n-2$ repetitions occurred within or between chunks. Direct evidence of chunking was obtained, and $n-2$ repetition cost was smaller

when $n-2$ repetitions occurred within chunks than between chunks. These findings are consistent with the idea that the reduced $n-2$ repetition cost reflects priming of task goals rather than direct modulation of task-set inhibition.

4:45 – 5:00
(106)

Randall Jamieson (rjamies@mcmaster.ca), Lee Brooks
McMaster University

**Exemplar-based retrieval enables an illusion of category simplicity:
Implications for theories of category coherency.**

We apply an exemplar model of memory, Minerva2 (Hintzman, 1986), to examine peoples' false belief that family resemblance categories have simple defining features (e.g., that all tables have four legs). In the model, participants encode training exemplars. When asked whether a studied category had a simple defining feature, representations of the queried categories are retrieved and, then, are used to infer category structure. We show that parallel retrieval from a store of studied exemplars produces systematic distortions in category representation and that these distortions enable an illusion of category simplicity.

5:00 – 5:15
(107)

Lorraine Allen (allan@mcmaster.ca), Shepard Siegel, Samuel Hannah, Matthew Crump
McMaster University

**Merging associative and signal-detection accounts of contingency
assessment.**

There is evidence that contingency assessment can be best understood as an instance of associative learning, i.e., by application of the Rescorla-Wagner model. There also is evidence that contingency assessment is based on both the observer's sensitivity to the contingency and the observer's response bias (or decision about criterion placement), and thus is best understood by application of signal detection theory. We suggest that the signal detection framework is not an alternative to associative interpretations of contingency assessment, but rather that it is a useful way of integrating the acquisition of associations with a decision process.

5:15 – 5:30
(108)

Gregory P. Krätzig (gregory.kratzig@usask.ca), Jamie I. D. Campbell
University of Saskatchewan

**Adaptive strategy choice in computational estimation: A role for
feedback?**

We explored adaptivity of strategy choice using a computational estimation task. Participants received two-digit by two-digit multiplication problems with instructions to quickly estimate the product either by rounding up or down, whichever would provide the more accurate estimate. Trial by trial feedback (correct or incorrect strategy choice) lead to more accurate strategy selection, despite the computational complexity of identifying the correct strategy. Our results fit well with the Siegler and Shipley (1995) Adaptive Strategy Choice Model in that accuracy of strategy choice was significantly better with feedback than without feedback.

Paper Session 3.2: Attention

4:00 – 5:30, HHB 105

Chair: Thomas Spalek

- 4:00 – 4:15
(109) Thomas Spalek¹ (tspalek@sfu.ca), Paola Poiese², Vincent Di Lollo¹
¹Simon Fraser University, ²University of Trento

Attentional involvement in pop-out visual search: Questioning the preattentive hypothesis.

In Feature Integration Theory, pop-out visual search was said to be done preattentively, a viewpoint that has been seriously questioned by later evidence, which was obtained exclusively with dual-task paradigms. Using single-task paradigms, we showed that a) enumeration within the subitizing range requires attention, b) detection of a pop-out orientation target is impaired by a salient task-irrelevant colour distractor, and c) that detection of a pop-out target is facilitated by a spatial cue. Collectively, these outcomes are inconsistent with a preattentive view and point to the necessity for attentional involvement in all visual-search tasks, including pop-out searches.

- 4:15 – 4:30
(110) Kyle Mathewson (kylemath@uvic.ca), James Tanaka
University of Victoria

The detrimental effects of working memory load on a sustained attention task: The elimination of a cueing effect with distraction.

What effect does working memory load have on attentional processes? The effect of performing a working memory task on a sustained attention 'Posner paradigm' was examined. Participants were cued to one side of visual space and indicated as quickly as possible the side on which targets appeared via a key press response. The task was performed with and without a dual-task of mental math. The mental math task led to an overall slowing of responses and the elimination of the cueing effect observed in the no-task condition. Thus, reaction time advantages afforded by attention are negated by working memory load.

- 4:30 – 4:45
(111) John McDonald (jmcd@sfu.ca), Jessica Green
Simon Fraser University

Isolating event-related potential activity related to attentional control.

We investigated event-related potential (ERP) activity elicited by attention-directing cues. We isolated attentional control activities by comparing shift-left and shift-right cue ERPs to two different baseline (neutral) cue ERPs. Distributed source modeling indicated that the isolated activities were centered in frontal and occipital lobes. Some of the lateralized activity was centered in the cortical lobe on the same side as the to-be-attended location, indicating that it might reflect suppression of the to-be-ignored location. One lateralized ERP component reversed polarity for shifts of attention to upper and lower fields, suggesting that attentional preparation might modulate activity in primary visual cortex.

- 4:45 – 5:00
(112) Jessica Green (jgreenb@sfu.ca), John McDonald
Simon Fraser University

Dynamics of attentional control revealed by beamformers of low-frequency brain waves.

Neuroimaging has identified brain areas that control voluntary shifts of attention, but the temporal dynamics of attentional control remain unknown. We used beamformers to reconstruct neural sources of low-frequency electroencephalographic activity during a visual-attention task. Occipital, parietal, and frontal cortices were activated in succession within 500 milliseconds of a signal to shift attention. Parietal and occipital

areas were then re-activated in succession prior to the appearance of a visual target. These results show that attentional control involves a feed-forward projection to frontal cortex and a subsequent feed-back projection to visual cortex, largely through the same cortical regions.

5:00 – 5:15 (113) Evan F. Risko (efrisko@watarts.uwaterloo.ca), Jonathan S. A. Carriere, Daniel Smilek
University of Waterloo

Fatigue kills: Sleep deprivation and visual attention from a systemic perspective.

Performance decrements associated with sleep deprivation have been demonstrated in numerous contexts. Here, we explore the relation between visual attention and sleep deprivation from a systemic perspective where emphasis is placed on the interaction between visual attention and other components of the system (e.g., physiological function). Alert and sleep deprived participants performed a search task, during which we recorded eye movements, physiological responses, and subjective sleepiness. Analysis focuses on how sleep deprivation affects visual attention and how changes in physiological and phenomenological measures co-vary with measures of visual attention. Theoretical and practical benefits of approaching visual attention from a systemic perspective are discussed.

5:15 – 5:30 (114) Hiroe Li (hiroeli@psych.ubc.ca), Peter Graf
University of British Columbia

System navigation requires spatial attention; text entry requires verbal attention.

Personal Digital Assistants (PDAs) are powerful, mobile devices that are frequently used in attention-demanding environments (e.g., while driving, while listening to a presentation). The present study examined the specific attentional demands (e.g., space-related versus speech-related) of two different types of PDA tasks: Data/text entry and system navigation. Thirty undergraduate students performed each of these types of PDA tasks while concurrently engaged in a secondary task that required spatial or verbal attention. The results revealed that navigation tasks draw more spatial attention while text entry tasks draw more verbal attention.

Paper Session 3.3 (Symposium): Steroids and Neuroplasticity – From Copulation to Lactation

4:00 – 5:30, DSB C103

Overview: Jodi Pawluski

(115) Sari van Anders (saria@sfu.ca), Lisa Dawn Hamilton, Neil Watson
Simon Fraser University

Effects of sexual activity on women's testosterone.

We examined within-subject effects of sexual (intercourse) vs. control (cuddling; exercise) activities on salivary T sampled at three timepoints in women. The initial sample included 49 women, though not all participants returned all samples. T was significantly higher pre-intercourse than pre-control activity. Post-activity T was significantly higher following intercourse and cuddling. Morning T did not differ by activity. Evidence thus supports anticipatory rises in T prior to sexual activity, and increased T after intercourse and cuddling closely afterwards but not the next morning. Significant trait-like associations between orgasming and T were also apparent.

- (116) Thierry Charlier (tcharlier@psych.ubc.ca)
University of British Columbia
Slow and fast effects of testosterone on brain morphology and male sexual behaviour.
Testosterone influences the physiology and behavior mainly at the genomic level through the activation estrogen and androgen receptors. We showed that the steroid receptor coactivator SRC-1 modulates the action of testosterone on male sexual behavior and on the associated neuronal plasticity. In addition, the experimental modification of SRC-1 expression suggested relatively rapid morphological changes in the preoptic region. Subsequent experiments using immunocytochemistry and in vivo diffusion-weighted magnetic resonance imaging demonstrated that testosterone treatment for 24 hours only is sufficient to induce significant morphological changes in the preoptic region. The mechanisms underlying this rapid neural plasticity are currently under investigation.
- (117) Jodi Pawluski (jodi@psych.ubc.ca), Caroline Walker, Liisa A. M. Galea
University of British Columbia
Adult hippocampal neurogenesis is altered with maternal experience.
Adult neurogenesis in the hippocampus is influenced by steroid hormones which fluctuate during the estrous cycle, pregnancy and lactation. The present study aimed to thoroughly investigate the role of motherhood on hippocampal neurogenesis. Four groups of female Sprague-Dawley rats were used; multiparous, primiparous, nulliparous, and sensitized. All rats were injected with BrdU (200 mg/kg) 24h after birth/pup-exposure. Results show there was a significant decrease in BrdU-labeled cells in the dentate gyrus surviving throughout lactation in primiparous dams. In addition, multiparous dams had a greater percentage of surviving new cells. Future research aims to determine the hormonal mechanisms mediating these changes.
- (118) Andrea Olson¹ (okayandrea@yahoo.com), Brian Christie
¹*University of British Columbia*
Sex differences in CA1 stress-induced long term depression are not affected by prenatal ethanol exposure.
Prenatal ethanol exposure (PNEE) reduces long term potentiation (LTP), which is similar to the effect of acute stress on LTP. Although the effect of PNEE on LTD has yet to be investigated, acute stress enhances LTD. Estrogen has the diametric effect from PNEE and acute stress by increasing LTP and reducing LTD. We investigated the effect of PNEE and acute stress on CA1 LTD in young males and females and found that stress was required for LTD in males but blocked LTD in females. PNEE did not affect this sex difference indicating that sex differences in hippocampal synaptic plasticity are not altered by PNEE.

Poster Session 2 (5:30-7:00) MacLaurin Building (MAC), Lobby

(119)

Ron Boaz (radron@gmail.com), David Coleman, David Pettitt, Cedric Villamin, Elina Birmingham, Scott Sinnett, Alan Kingstone
University of British Columbia

Break(point)ing the fourth wall.

The perception of a fluid series of events is often subjectively segregated into what individuals feel as the most important segments. Where these segments begin and end is commonly referred to as breakpoints (e.g., Birmingham et al., 2006; Newston & Engquist, 1976). The present study explores this phenomenon by enquiring not only about meaningful events, but also about the believability of the events. Participants viewed two episodes of "Alfred Hitchcock Presents", a program that contains many unrealistic events. In one episode, participants were required to press and hold a key whenever they felt that a segment was meaningful, and in another condition, respond when they felt that a segment was unbelievable. The data was analyzed as to determine convergence rates within and between question types. Our findings have implications for dynamic measurements of attention, meta-awareness, and even as a measurement tool for the film industry.

(120)

Ana B. Chica^{1,2} (anachica@ugr.es), Tracy L. Taylor¹, Juan Lupiáñez², Raymond M. Klein¹
¹Dalhousie University, ²Universidad de Granada

Two mechanisms underlying inhibition of return.

Inhibition of Return (IOR) refers to slower responses at previously attended locations. IOR affects both input and output processing, depending on whether the oculomotor system was in a quiescent or in a prepared state, respectively (Taylor & Klein, 2000). If the motoric flavour of IOR is non-perceptual and non-attentional, no IOR should be observed when the task is not spatial. Here we tested IOR in a discrimination task when eye movements to the cue were or not required. IOR was only observed when the eyes did not move, suggesting that the motoric flavour of IOR does not affect input processing.

(121)

Shahab Ghorashi¹ (ghorashi@psych.ubc.ca), Vincent Di Lollo², John McDonald²
¹University of British Columbia, ²Simon Fraser University

Can the attentional spotlight really be split into eight sub-beams?

Steady-state EEG evidence suggests that the attentional beam can be shaped as a doughnut wherein information in the centre is suppressed (Müller & Hübner, 2002). This conflicts with behavioural evidence that central information cannot be ignored (Visser et al., 2004). We used a 4x4 checkerboard with subjects attending either the black or the white checks, and found stronger ERP responses to stimuli presented on the attended colour. It would be far-fetched to conclude that the attentional beam was divided into eight sub-beams. Rather, we believe that attention was deployed to an integral colour-object whose parts were spatially distributed.

(122)

Scott Sinnett¹ (ss@psych.ubc.ca), Robbie Cooper², Alan Kingstone¹
¹University of British Columbia, ²University of Bristol

Quietly does it: Eye fixations of expert athletes.

A long eye fixation, called a "quiet eye" (QE) correlates with success at difficult aiming actions, like shooting a rifle. This has led to suggestions that QE ability is a separate skill that can be learned, and then applied, to enhance aiming-performance. We examined expert-athletes performing their sport with a preferred and non-preferred limb. Experts' QE times were long/expert-like when responding with the preferred limb, and short/novice-like when performing with the non-preferred limb. This suggests that the QE is closely tied to the aiming-movement itself. The implications of this work for both the theory and application of skill acquisition is discussed.

(123)

Stephen Smith (s.smith@uwinnipeg.ca), Kasmira Sobkow, Heather Mackenzie, Alexander Lukin
University of Winnipeg

Money doesn't buy happiness, but it does buy attention: Evidence from an 'emotional-blink' task.

The current study examines whether stimuli associated with a monetary reward modulate attention. Participants completed a conditioning phase in which images from a particular class of items (e.g., cars or birds) were paired with a monetary reward (\$0.25). Following conditioning, participants searched for a target embedded within a series of 17 rapidly presented images on each trial. Critically, a rewarded or unrewarded item from the initial phase appeared 200-ms or 800-ms before the target. At 200ms lags, stimuli paired with monetary rewards impaired target detection relative to the other distractors, suggesting that stimuli associated with rewards are prioritized by attention.

(124)

Christopher Fennell (fennell@uottawa.ca)
University of Ottawa

Asymmetries in infants' ability to notice mispronunciations.

To build a lexicon, infants need to disambiguate similar-sounding words (e.g., "ball" - "doll"). To test infants' ability to detect relevant sound changes in new words, they are habituated to novel objects paired with novel words (e.g., "bin") and then tested on mispronunciations (e.g., "din"). A meta-analysis of these experiments revealed asymmetries in infants' ability to notice mispronunciations (e.g., noticed a change from [b] to [d], but not vice-versa). The pattern of these asymmetries do not fit a hypothesis that postulates underspecification of the language sound representations, but instead may reflect perceptual-acoustic cues that are readily available to the infant.

(125)

Linda Kerswell¹ (kerswell@unbc.ca), Paul Siakaluk¹, William Owen¹, Penny Pexman²
¹*University of Northern British Columbia*,
²*University of Calgary*

Pseudohomophone processing in the lexical decision task.

Lexical decision responses to pseudohomophones (e.g., brane) are slower and more error prone than to pseudowords (e.g., frane). It is

assumed that this occurs because pseudohomophones activate phonological and perhaps semantic information of their base words. We tested this assumption directly by examining the effects of orthographic, phonological, and semantic variables on lexical decision response times (RT) and errors to pseudohomophones using standard multiple regression. We observed significant effects of base word log frequency (RT, errors), orthographic neighbour-hood size (RT, errors), orthographic similarity (errors), and word body status (extant or novel) of the pseudohomophones (RT, errors).

(126)

Keri Locheed¹ (locheed@unbc.ca), Kim Wilson¹, Josh Rash¹, Paul Siakaluk¹, William Owen¹, Penny Pexman², Christopher Sears²
¹*University of Northern British Columbia*,
²*University of Calgary*

The influence of sensorimotor information on semantic feedback and semantic processing.

We examined body-object interaction (BOI) effects in semantic categorization, semantic lexical decision, and naming tasks. We observed a facilitatory effect in each task: words rated high in BOI (e.g., mask) were responded to more rapidly and accurately than words rated low in BOI (e.g., ship). We propose that words rated high in BOI activate more sensorimotor information than words rated low in BOI, leading to faster settling in semantics, and to more feedback activation from semantics to orthography and to phonology. Our results demonstrate that theories of lexical semantics should incorporate sensorimotor information as an important aspect of conceptual knowledge.

(127)

Josh Rash¹ (josh_man07@hotmail.com), William Owen¹, Pat Siakaluk¹, Ron Borowsky²
¹*University of Northern British Columbia*,
²*University of Saskatchewan*

Contextual influences on addressed and assembled phonological processes.

Dual-route models of visual word recognition typically assume that readers can contextually adjust their reliance on addressed and assembled phonological processes. Owen, Blake and Borowsky (2006) examined both word frequency and orthographic length effects as indices of addressed and assembled processes, respectively. They found that frequency effects could be modulated independent of length

effects. We have replicated the basic findings of this previous study, and found that letter confusability (Arguin & Bub, 2005) influences measures of assembled processing (i.e., length effects). Implications for models of visual word recognition are presented.

(128)

Sarah Mageean
(sarah_wynne_5@hotmail.com),
Amanda Sheptycki, Andrew Howell
Grant MacEwan College

Flourishing: Frequency and achievement-related correlates of students' mental health.

Keyes (2005) described, among a representative U.S. adult sample, the frequency and correlates of flourishing, operationalized as elevated emotional, psychological, and social well-being. We examined the frequency of flourishing among 397 undergraduates and predicted that flourishing would have adaptive cognitive and behavioural achievement-related correlates. The rate of flourishing was similar to that found among adults (e.g., 21% and 19% of students met criteria for "flourishing" and its opposite, "languishing", respectively). Concomitants of flourishing included low procrastination, high self-control, adoption of a malleable view of ability, endorsement of mastery-approach goals, and high grades. Results are cast in terms of models of self-regulated learning.

(129)

Chad Coulombe (icereaver@canoemail.com),
Lynne Honey
Grant MacEwan College

When is dominance attractive?

Dominance is one cue that organisms may use to evaluate conspecifics for mate-choice and non-sexual affiliation. Surprisingly, dominance has not been systematically studied in this context. We asked participants to evaluate targets described as dominant, equal or subordinate to the participant. We determined that, contrary to previously published results, there was no romantic preference by males for subordinate females and no romantic preference by females for dominant males. Rather, both sexes seemed to prefer partners of comparable status, but males described as subordinate were rated as significantly less attractive. Additionally, ratings differed between 'corporate' and 'recreational' scenarios.

(130)

Nelson Heapy (nheapy@uwo.ca), Allison Bloom
Huron University College

Posttraumatic stress in spouses of trauma victims.

This study examined the relationship between posttraumatic stress (PTS) symptoms in cardiac rehabilitation patients and their spouses. Participants were 31 cardiac patients and their spouses, and 12 rehabilitation patients who are recovering from non life threatening injuries. Significant correlations were found between PTS symptoms of cardiac patients and their spouses. Hyperarousal symptoms decreased over time, whereas intrusion and avoidance symptoms remained stable over time. No significant difference was found between symptom levels in patients and in their spouses. No correlation was obtained between spousal hostility scores and PTS symptoms. Cardiac patients and their spouses scored significantly higher on stress symptoms than did the other rehabilitation patients.

(131)

Jonathan Farthing (jon.farthing@usask.ca),
Jacqueline Cummine, Ron Borowsky,
Phil Chilibeck, Gord Binsted, Gordon Sarty
University of Saskatchewan

False activation in the brain ventricles related to task-correlated breathing in fMRI speech and motor paradigms.

We demonstrate, and show how to eliminate, a task-correlated breathing activation artefact created while performing exercise tasks during a gap in functional magnetic resonance imaging (fMRI). Two studies are presented. The first was intended to isolate a reliable fMRI paradigm for intense handgrip contractions. A gapped acquisition was used to reduce motion artefact, where the contraction was performed during a gap, and image acquisition was between contractions. The second study involved naming regular words (REGs) and nonwords (NWs), where a gap is required for the analysis of participants' overt speech. For study 1, brain ventricle activation was present when breathing responses were task-correlated, and was only eliminated by removing the gap from the sequence. For study 2, NWs were associated with activation artefact in the ventricles, and slower reaction time (RT), reflecting a strategy whereby breathing falls in synchrony with image acquisition. REGs showed the expected RT distribution and frequency effect (reflecting lexical access), with no ventricle activation, and

consequently no synchrony with image acquisition. The gapped paradigm increased the likelihood of breathing correlated T2* signal changes in brain ventricles. fMRI researchers should examine the brain ventricles for activation artefact as they are likely associated with false activations in other brain regions.

(132)

Craig Leth-Steensen
(craig_leth_steensen@carleton.ca)
Carleton University

What the heck is going on when you add a covariate to a repeated measures design in SPSS?

Adding an uncentered covariate to a repeated measures or mixed within- and between-subjects ANOVA in SPSS can drastically affect the treatment sums of squares for the within-subjects factors. This problem is solved simply by centering the covariate. The reasons for this are detailed herein and demonstrated by way of a concrete example.

(133)

Kristen Bouvier (bouvierk@mymail.macewan.ca), Russell Powell
Grant MacEwan College

Conditioned emotional responses and implementation intentions: The aversive effects of simple plans.

Implementation intentions (simple plans that specify when, where and how a goal will be attained) have been shown to significantly enhance goal attainment. The prevailing theory is that implementation intentions help establish more effective stimulus control over difficult behaviour patterns. The present study examined whether consequences in the form of conditioned emotional responses might also play a role. Regression analyses of self-ratings for three behaviour patterns – studying, exercising and flossing – showed that implementation intentions, as well as anxiety/guilt associated with nonfulfillment of implementation intentions, significantly predicted the frequency of each behaviour. These results are congruent with a Mowrer-like two-factor model of self-regulation.

(134)

Jacinthe LeBlanc (leblanc.jacinthe.3@courrier.uqam.ca), Claude Dumas
Université du Québec à Montréal

The effect of the starting position in a two-choice progressive elimination task in dogs.

LeBlanc & Dumas (2006) showed that dogs had difficulty implementing the least distance rule in a three-choice progressive elimination task (PET) when the starting point was located in front of the left or right target. The present study aimed at examining whether this difficulty was linked to an attentional limitation or to a difficulty to assess distance. Nine dogs were administered a two-choice PET with three starting positions. The results revealed that the dogs implemented the least distance rule when starting in front of the left or right target. Hence, the data support the attentional hypothesis.

(135)

Michael R. W. Dawson¹ (mdawson@ualberta.ca), Debbie M. Kelly², Marcia L. Spetch¹
¹*University of Alberta*, ²*University of Saskatchewan*

Using artificial neural networks to simulate the reorientation task.

The reorientation task is a paradigm that has been used extensively to study the types of information used by animals to navigate in their environment. In this task, animals are reinforced for going to a particular location in an arena that is typically rectangular in shape. The animal then has to find that location again after being disoriented, and possibly after changes have been made to the arena. This task is used to determine what geometric and featural cues can be used by animals to “map” the arena. While there are extensive empirical results from this task, there are few models of how it might be accomplished. The purpose of this presentation is to address this issue. We present a number of simulation results that show that a simple neural network, a perceptron, can be used to generate many of the traditional findings that have been obtained using the reorientation task. It is also shown that such networks perform this task by combining geometric and featural cues. Additional simulations are presented to demonstrate that artificial neural networks provide a medium in which novel manipulations of the arena can be quickly explored in order to generate testable hypotheses for future animal experiments.

(136)

Jennifer Bloomfield (jlbloomfield@gmail.com),
William Thomas, Amy Stillar, Matti Saari, Andrew Weeks

Nipissing University

Methodological advances in the process of inducing maternal behaviour in virgin female rats.

An experiment was conducted to investigate neural changes in the medial preoptic area and the amygdala following the onset of maternal behaviour. As maternal behaviour is not expressed in rats until immediately following parturition, the timing of changes associated with this behavioural switch were of particular interest. Groups included: mothers with pups, mothers/pups removed, control virgins and virgins exposed to pups. Here, we describe the methodology developed to allow for maternal behaviours to be induced in virgins. These procedures successfully induced maternal behaviour in 80% of the virgin females. Further, neophobic behaviours were avoided in 100% of the virgin females.

(137)

Alex Weinberg¹ (alex_anders_w@hotmail.com),
Caroline Walker¹, Stephanie Lieblich¹, Mark D. Spritzer², Liisa A. M. Galea¹

¹*University of British Columbia,*

²*Middlebury College*

Strain and housing conditions affect expression of defensive behaviours in adult male rats.

This study investigated how housing conditions and strain differences affect the behavioral and neural response of adult male rats towards an acute stressor, 2,5-dihydro-2,4,5-trimethylthiazoline (TMT, a component of fox feces). Twenty-four Sprague Dawleys and twenty-four Long Evans males were either singly housed or pair-housed. Behavior was scored after a 15 minute exposure to either TMT or water. Overall, as expected, TMT was found to elicit a strong defensive burying response, an increase in risk-assessment, and an increase in avoidance, with stronger defensive burying and avoidance responses seen in the Long-Evans strain and a stronger risk-assessment observed in the Sprague-Dawley strain.

(138)

Sylvain Fiset (sfiset@umce.ca)
Université de Moncton in Edmundston

Spatial memory in domestic dogs: Encoding of multiple cues for finding disappearing objects.

Spatial memory of domestic dogs for hidden objects was investigated using a visible displacement problem of object permanence with a detour paradigm. Experiment 1 showed that dogs are able to spontaneously locate and find a disappearing object in a detour situation. In Experiments 2 and 3, dead reckoning and allocentric spatial information were put in conflict in an L-shape and a U-shape detour task. Results revealed that domestic dogs simultaneously encode and use multiple cues to locate a disappearing object in a detour task but gradually rely on allocentric information when the detour is made more complex.

(139)

Alexander Lukin (lukinalex@gmail.com),
Douglas Williams

University of Winnipeg

Do delayed CS-US relationships support timed CRs under negative contingencies?

Excitatory conditioned responses (CRs) are generated under negative contingencies in appetitive conditioning in rats when a single fixed time unconditioned stimulus (US) is presented alongside other probabilistic USs. Timed CRs acquired under these circumstances are especially strong when the fixed US is embedded within the duration the conditioned stimulus (CS). Our results suggest that conditioning is poor but not absent when a fixed US occurs at CS termination. On test trials, a short-lived conditioned head-entry response was observed immediately upon CS termination. Extinction of the conditioning context prior to test had no effect on the magnitude of the CR observed.

(140)

Brennan Eadie (eadie@interchange.ubc.ca),
Brian Christie

University of British Columbia

Decreased neurogenesis in a mouse model of Fragile X syndrome.

Fragile X syndrome is the most common inherited form of mental retardation, is phenotypically similar to autism, and is caused by silencing of a single gene, *Fmr1*. Although *Fmr1*

knockout mice have been generated, a clear neurobiological basis for the learning impairment has not been elucidated. We hypothesized that neurogenesis in the hippocampus may be deleteriously altered in this syndrome. We have shown that the survival of new cells in the hippocampus of young Fmr1 knockout mice is significantly decreased with the greatest effect observed in the ventral hippocampus which may be more involved with emotional, rather than, spatial memory.

(141)

Tammy L. Ivanco (ivancotl@cc.umanitoba.ca),
Karen O'Brien, Kelly Hartle
University of Manitoba

Evaluating the long-term rewards of ethanol after early exposure.

Early exposure to ethanol increases rats' later self-administration of ethanol. It is suggested the pharmacological effects of ethanol, and not gustatory or olfactory effects, play the primary role in creating this predisposition to consume ethanol. To test if the pharmacological reinforcing effects of ethanol are robust enough to overcome the negative gustatory effects of quinine, Long Evans Hooded rats are prenatally exposed to ethanol. During periadolescence, they are given the chance to consume quinine, ethanol or ethanol-quinine. The rates of consumption of the early exposure rats are compared to that of controls. Consequences of early exposure are discussed.

(142)

Kelly Hartle (kehartle@shaw.ca),
Tammy L. Ivanco
University of Manitoba

Anatomical consequences of early damage across the lifespan.

To determine the impact of early damage on surviving neurons across the lifespan, male Long Evans rat pups underwent a photochemically-induced stroke within the right motor cortex at 10 days of age. Pups were sacrificed at either 2 or 6 months of age. Ten layer II pyramidal cells from each of the right and left motor cortex were drawn from each animal. Analysis of dendritic length and volume were conducted for each cell. Results revealed significant morphological changes in 2 month old experimental animals. Animals at 6 months of age were no longer significantly different from controls.

(143)

Anna Morrish (amorrish@gmail.com)
University of British Columbia

Antagonism of the cannabinoid CB1 receptor accelerates the consummatory phase of sexual behaviour.

While plant derived cannabinoids, such as THC, have generally been found to inhibit male sexual behavior, little is known about the role of the endocannabinoid system itself in regulating male sexual behavior. To this extent, we examined the effects of acute administration of either a cannabinoid CB1 receptor antagonist (AM251), or an inhibitor of endocannabinoid hydrolysis (URB597) or endocannabinoid uptake (AM404) on both the appetitive and consummatory phases of male sexual behavior. URB597 was found to have no effect on any parameter of sexual activity, whereas AM404 only reduced mounting behavior at the highest dose, which was likely an effect of this dose on motor behavior. Alternately, AM251 was found to dose dependently reduce both the latency and the intromissions required to attain ejaculation, indicating a facilitation of ejaculatory processes. These findings are discussed with reference to the role of endocannabinoids in regulating hypothalamic neuropeptide signaling.

(144)

Ryan McLaughlin (rjmclgh@mta.ca), Matt Hill,
Anna Morrish, Boris Gorzalka
University of British Columbia

Local enhancement of cannabinoid CB1 receptor activity in the hippocampus has antidepressant-like effects in the forced swim test.

Recent evidence suggests that stress-induced down-regulation of hippocampal endocannabinoid signaling may contribute to the etiology of depression. We assessed whether local infusions of HU-210 (CB1 agonist), URB-597 (FAAH inhibitor), or AM-251 (CB1 antagonist) into the dentate gyrus would produce antidepressant-like effects in the rat forced-swim test. High and low doses of HU-210 elicited an antidepressant effect (decreased immobility and increased swimming), while administration of URB-597 or AM-251 had no effect at either dose. These results demonstrate the importance of hippocampal CB1 receptors in regulating emotional behavior, although dissociation exists between the sites of action of CB1 agonists and FAAH inhibitors.

(145)

Il Soo Moon¹ (moonis@dongguk.ac.kr),
 Sun-Jung Cho¹, HyunSook Lee², IngNyol Jin²
¹Dongguk University, ²Kyungpook National
 University

A method for combined fluorescence in situ hybridization and immunocytochemistry.

In this manuscript, we report a simplified but robust protocol that allows immunocytochemical localization of proteins after ISH. In this protocol, we fix cultured cortical or hippocampal neurons with 4% paraformaldehyde (PFA), rinse briefly in PBS, and then further fix the cells with -20°C methanol. Our method has several major advantages over previously described ones in that (1) it is just consecutive routine fixation procedures, (2) it does not require any special alteration to the fixation procedures, and (3) it can be used with antibodies that are compatible with either MeOH- or PFA-fixed target proteins.

(146)

Il Soo Moon¹ (moonis@dongguk.ac.kr),
 Sun-Jung Cho¹, HyunSook Lee², IngNyol Jin²
¹Dongguk University, ²Kyungpook National
 University

KCl treatment increases eIF4E mRNAs in the dendrites of cultured hippocampal neurons.

Activity-dependent local dendritic translation in CNS neurons plays important roles in synapse-specific provision of proteins necessary for strengthening of synaptic connections. Availability of eukaryotic translation initiation factor 4E (eIF4E), an mRNA 5'-cap-binding protein, is the major rate-limiting factor for protein synthesis. Fluorescence in situ hybridization (FISH) revealed that treatment of the neurons with KCl increases very significantly ($p > 0.01$) in dendritically localized eIF4E mRNAs. By combining FISH with immunocytochemistry (IC), we further showed that KCl treatment increases very significantly ($p > 0.01$) in the PSD95-associated eIF4E mRNA punctae. These results demonstrate an activity-dependent increase of eIF4E mRNA at synaptic sites.

(147)

Conny H. Lin¹ (conny@interchange.ubc.ca),
 Justin R. Davis, Yun Li, Catharine H. Rankin¹
¹University of British Columbia

Effects of ethanol on development of *C. elegans*.

We investigated the effect of chronic or acute ethanol exposure on survival rate, reproductive onset, worm length/size, fecundity and lifespan in *C. elegans*. Chronic exposure of ethanol over the entire lifetime, over larval development, and during adult only was explored. In all cases, we found that alcohol significantly decreased length, reproductive onset, decreased total number of eggs laid and shortened lifespan. The effect of acute ethanol exposure during embryonic development was investigated by exposing eggs to ethanol for 1 hour at various times (1-9h after eggs were laid). We report significant effects of 1hr exposure on age of reproductive onset.

(148)

Christine Tsang¹ (ctsang33@huron.uwo.ca),
 Danielle Longfield¹, Nicole Myles¹,
 J. Bruce Morton²
¹Huron University College at Western,
²University of Western Ontario

The melody is in the words: The effect of simultaneous linguistic and musical information on infant perception for music and language.

Eight-month-old infants were familiarized to one of two different melodies with nonsense lyrics. The lyrics were syllables arranged in 1) a non-random order, such that the transitional probabilities between syllables formed "words", or 2) a random order, such that the transitional probabilities between syllables did not form reliable "words". At test, infants were tested for auditory preferences to either the novel melody, or to the familiar "words". Results show that infants' perception of melody breaks down in the presence of linguistic information, while infants' perception of "words" remains unaffected ($p < 0.01$). These results suggest that 8-month-old infants are highly sensitive to linguistic information to the detriment of other perceptual processing.

(149)

Cary Kogan¹ (ckogan@uottawa.ca), Charles Collin¹, Katherine Bendell¹, Megan Therrien¹, Lindsey MacLeod

¹University of Ottawa

Navigation abilities in Fragile-X syndrome: Evidence for pronounced visuospatial integration deficits.

Fragile-X Syndrome (FXS) is a common form of inherited mental retardation. Previous work suggests that FXS leads to particular deficits in global motion integration. To determine if these deficits extend to difficulties in navigation and cognitive map formation, we had participants with FXS (N=17) and mental-age-matched controls (N=17) attempt to learn a series of computer-generated mazes. Completion times were recorded for three consecutive runs through each maze, and the resulting learning curves were analyzed. FXS participants showed a virtual absence of spatial learning relative to controls, suggesting a pronounced deficit in cognitive mapping in FXS.

(150)

Jamus O'Brien (jamo.obrien@uleth.ca), Robert J. Sutherland

University of Lethbridge

A novel model of episodic memory in the rat.

Using a variation of contextual fear conditioning and the immediate shock effect, we demonstrate that rats are able to form memories for specific episodes which consist of an integrated representation of time, place, and event nature. This representation is dependant upon an intact medial prefrontal cortex and hippocampus, whereas a standard version of contextual fear depends only upon the hippocampus.

(151)

Jordan Schoenherr (psychophysics.lab@gmail.com)

Carleton University

Category structure in the category-order effect.

The category-order effect occurs when stimuli from a small, exclusive category precede a larger, more inclusive one. Participants are assumed to categorize stimuli, and this facilitates performance. To date no study has explicitly investigated this premise. A categorization task asked participants to identify the stimuli in one of five categories (numbers, letters, similar-letters, pseudo-words, and words) while the

structure-recognition task required participants to rate the amount of perceived structure from randomly generated to highly organized stimuli. While the accuracy of participants' judgements did not support previous findings, the amount of perceived structure is implicated as the determinant of this phenomena.

(152)

Justin Kantner (jkantner@uvic.ca), D. Stephen Lindsay

University of Victoria

Tests of constrained retrieval in recognition memory.

Many prominent theories of recognition memory hold that recognition judgments are based on the degree of match between test probes and previously encountered exemplars. Jacoby, by contrast, has recently argued that such judgments may be supported by a process of "constrained retrieval" whereby the field of exemplars is deliberately searched for items of a particular contextual source. We evaluate Jacoby's evidence and report experiments designed to elicit constrained retrieval in a recognition task. Results indicate that individuals can constrain retrieval in the service of recognition, but only under particular encoding and task conditions.

(153)

Kristen Bouvier (BouvierK@mymail.macewan.ca), Kristine A. Peace

Grant MacEwan College

Alexithymia, dissociation, and social desirability: Investigating individual differences in the narrative content of false allegations of trauma.

Individual factors influence memory reporting and effect credibility assessments. This study examined the influence of alexithymia, dissociation, and social desirability on features associated with truthful and fabricated trauma allegations. Participants (N=291) wrote narratives of both traumas and completed individual difference measures. Alexithymia was associated with less plausible reports and differential reporting of emotional details between narratives. Dissociation was related to less coherent and plausible reports, and

difficulties in fabricating contextual details. Coherence and plausibility ratings fluctuated between low to high social desirability. Results suggest that individual difference factors should be taken into account in forensic assessment of trauma narratives.

(154)

Rehman Mulji (reh@ucalgary.ca),
Glen E. Bodner
University of Calgary

A role for concentrating in producing directed forgetting.

In standard two-list directed forgetting, an instruction to forget after list 1 impairs list 1 recall (costs) but improves list 2 recall (benefits). We replicated this pattern when subjects were instructed both to forget list 1 and to concentrate on list 2. However, we observed benefits—but no costs—with only the forget instruction, contrary to the claim that the forget instruction causes inhibition. We suggest (cf. Sahakyan & Kelly, 2002) that the forget instruction induces improved encoding of list 2 (benefits), whereas the concentrate instruction produces forgetting of list 1 (costs) by inducing a between list change in mental context.

(155)

Lauren Unik (lauren_unik@hotmail.com),
Heather Tiede, Jason Leboe
University of Manitoba

A test of inhibitory versus interference accounts of retrieval-induced forgetting.

Retrieval-induced forgetting (RIF) occurs when the act of generating information from memory causes forgetting of related information. We investigated whether distinctive encoding can produce forgetting of related information encoded less distinctively, without providing an opportunity for retrieval inhibition to occur. In two experiments, participants solved anagrams for some category exemplars (ANNABA = BANANA), whereas other category exemplars were simply read. Our results reveal that distinctive encoding in a way that does not allow for a retrieval inhibition process to occur can mimic the typical RIF pattern, suggesting that this mechanism may not be necessary to explain the phenomenon of RIF.

(156)

Erin A. Maloney (eamalone@artsmail.uwaterloo.ca), Evan F. Risko, Jennifer A. Stolz, Jonathan A. Fugelsang
University of Waterloo

Ironic effects of trait level working memory, cognitive load, and math.

People who are higher on trait working memory (WM) capacity suffer more from an additional WM load than do people who are lower on trait WM capacity (Kane & Engle, 2000). The present experiments investigate the boundary conditions of this finding. Individuals performed a novel arithmetic task while concurrently performing a visual (Experiment 1) or verbal (Experiment 2) WM task. Results of Experiment 2, but not Experiment 1, are consistent with the pattern previously reported suggesting that the nature of the WM load modulates the relation between trait WM capacity, WM load, and task performance.

(157)

Michelle Corcoran (michelle.corcoran@uleth.ca), John R. Vokey
University of Lethbridge

Mining the ORE.

The other-race effect (ORE) is defined as poorer recognition of other-race faces when compared with same-race faces. Introducing a context of predominantly other-race faces at encoding kept the ORE intact; introducing a context of predominantly same-race faces, however, eliminated the ORE. In examining the influence of categorizing on the basis of race at encoding, we found that categorizing eliminated the ORE. We also examined the influence of categorization on the other-sex effect (poorer recognition of other-sex faces). Using a standard recognition memory paradigm, we failed to find an other-sex effect. However, when participants were required to categorize on the basis of sex at encoding, an other-sex effect emerged.

(158)

Megan Myers (mmyers@uvic.ca), Lara Pierce, Oliver Ayling, Mehul Gandhi, Parminder Kaur, Kim Maynard, Rebecca Phillips, Zena Rittenhouse, Kathleen Unfreed, Nicole von Kleist, James Tanaka

University of Victoria

Electrophysiology of other-race face recognition.

Although it is established that people are better at recognizing own- versus other-race faces, the neural mechanisms mediating this advantage are not well understood. In this study, Caucasian participants were trained to differentiate African (or Hispanic) faces at the subordinate individual level and classify Hispanic (or African) faces at the basic level of race. The main finding was that when trained at the subordinate level, novel African faces elicited a greater posterior N250 potential than novel Hispanic faces. These differences were mirrored in an old/new recognition task suggesting that the N250 component is a reliable marker of other-race face recognition.

(159)

Cindy Ho (cindyh@interchange.ubc.ca), Deborah Giaschi

University of British Columbia

Low-level and high-level maximum motion displacement: Evidence from functional magnetic resonance imaging.

Maximum motion displacement (Dmax) represents the largest dot displacement in a random dot kinematogram (RDK) at which direction of motion can be discriminated. Dmax is not fixed but is stimulus dependent. For RDKs with small dot size/high dot density, Dmax may be determined by receptive field size of low-level motion detectors. Dmax for larger dot size/reduced dot density RDKs exceeds the spatial limits of these detectors and is likely mediated by high-level feature-matching mechanisms. Using functional MRI, we confirm that activation is less in low-level occipital and greater in high-level parietal visual areas when high-level RDKs are viewed.

(160)

Peggy J. Planetta (pplanet06@yahoo.ca), Philip Servos

Wilfrid Laurier University

Tactile motion aftereffect.

The motion aftereffect (MAE) is the apparent motion of a stationary stimulus following

prolonged exposure to a continuously moving stimulus. In two experiments, we measured the duration, frequency, and vividness of the tactile MAE, which was induced by a rotating drum. First, we adapted the 1)Fingers and palm, including thumb, 2)Fingers and palm, excluding thumb, and 3)Fingers only, excluding thumb. There were no differences between the skin surfaces tested. Second, we tested different adapting speeds: 15,30,45,60, and 75 rpm. The frequency, duration, and vividness of the tactile MAE increased with rpm. Current research is investigating the neural basis of the illusion.

(161)

Farhad Dastur (farhad.dastur@kwantlen.ca), Levente Orban

Kwantlen University College

Visual preferences for ripening fruits and vegetables in pregnant women.

We propose a study to explore changes in visual preferences during the first trimester of pregnancy. The pregnancy sickness as toxin avoidance theory was used to generate the hypothesis that 1st trimester women (relative to nonpregnant women) should experience increased preferences toward those visual features, especially hue, associated with ripeness and freshness in fruits and vegetables (yellows, oranges, and reds) and decreased preference toward those features associated with foods that are unripe, overripe, or spoiled (greens, blues, and browns).

(162)

Catherine Éthier-Majcher¹

(c.ethier-majcher@umontreal.ca), Daniel Fiset², Caroline Blais¹, Martin Arguin¹, Daniel Bub², Frédéric Gosselin¹

¹University of Montreal, ²University of Victoria

Diagnostic features for uppercase and lowercase letter identification.

In this study, we aim to reveal the potent features (Gosselin & Schyns, 2002) mediating uppercase and lowercase letter identification in Arial font letters. Six participants each identified 26,000 uppercase and lowercase Arial font letters sampled in image location and spatial frequency by Bubbles (Gosselin & Schyns, 2001). Separate analyses revealed the potent features for each uppercase and lowercase letter. The results show that high spatial frequencies support the identification of features that discriminate among visually similar letters (e.g., 'O' and 'Q'), whereas low spatial

frequencies carry information about the features that are shared among subsets of visually similar letters.

(163)

Scott Sinnett (ss@psych.ubc.ca),
Nicola Hodges, Romeo Chua, Ricky Pak,
Alan Kingstone
University of British Columbia

How expertise affects embodied cognition.

The perception of action can lead to modifications in the behaviour of the observer. Bach and Tipper (in press) showed that responses to pictures and video clips of someone typing on a typewriter were faster with a finger response when compared to a foot response. The same congruency effect was observed when the observed action was someone playing soccer (e.g., faster foot responses when compared to hand responses). In a separate study, these authors showed the exact opposite effect when the actors were famous athletes (Bach & Tipper, 2006). That is, faster foot responses to expert tennis players and faster finger responses to expert soccer players. The current study expands on these contradictory data sets by requiring the same subjects to discriminate between experts and non-experts playing tennis or soccer with congruent and incongruent action-response associations (e.g., foot and finger responses). The data will be discussed in its relation to embodied cognition and the effects of the observed actor's expertise.

(164)

Peter Dixon¹ (peter.dixon@ualberta.ca),
Scott McAnsh¹, Scott Glover²
¹*University of Alberta*, ²*Royal Holloway, University of London*

Familiarity and reach trajectory.

Subjects reached and grasped a coin with the thumb and forefinger of their right hand. The coins were of various Canadian or British denominations. The grip aperture (i.e., the distance between their thumb and forefinger) was measured over the course of the reach. As in previous research, grip aperture was scaled to the size of the coin well before the hand reached the target. However, there was also an effect of familiarity, such that the grip aperture scaling was less precise with the familiar Canadian coins. The results imply that memory and visual information interact in the control of reaching.

(165)

Verena Willenbockel (verenaw@uvic.ca),
James Tanaka, Daniel Fiset
University of Victoria

Time- and spatial-scale-dependent face perception.

The present study investigates the time course of spatial frequency processing in face perception under different task demands. In a dynamic masking paradigm that allowed us to interrupt face processing at various stages, we presented full bandwidth, low-pass, and high-pass filtered images for stimulus durations ranging from 20 ms to 220 ms, while participants performed different categorizations on the same set of stimuli (identity matching, gender and emotion discrimination). The results provide insights into both the temporal dynamics of spatial scale processing in complex stimuli and the interplay of bottom-up and top-down mechanisms underlying face perception.

(166)

Meredith Young (youngme2@mcmaster.ca),
Justyna Maslowska, Louis Schmidt
McMaster University

Influence of shyness and sociability on categorization of facial expressions of emotion.

Accurate identification of emotional expressions in others plays an important role in social interaction. Although some special populations (e.g., autism and schizophrenia) exhibit difficulty with emotion recognition tasks, there are few studies of healthy adults that have examined the role of individual differences in temperament on the ability to categorize facial expressions of emotion. Here we show that individual differences in temperament may influence rapid recognition of emotional facial expression. Shyness was related to less accuracy, while sociability was related to greater accuracy, in the categorization of affective faces regardless of the type of emotion expressed.

(167)

Mélanie Joanisse (joanissemelanie@hotmail.com), Sylvain Gagnon
University of Ottawa

The dual life of spatial memory traces: Easily retrieved and easily disturbed.

Four experiments examined the nature of visuo-spatial stimuli in long-term memory. Participants were asked to position identical or non-identical objects with or without interference at retrieval.

Forty stimuli were displayed on a 7 × 8 grid in the first three experiments and 36 stimuli were displayed on the grid in the fourth experiment. Results showed that relocating identical stimuli (black filled circles) was easier than recall of non-identical stimuli (object drawings). Interference generated at retrieval (identical stimuli to those encoded already positioned on the display) did not influence overall accuracy, but increased response time and induced a response bias. Using non-identical stimuli (object drawings, pale and dark grey filled circles) as interfering material did not reduce interference. These results suggest that when identical visual stimuli are studied the spatial dimension is the predominant remembered feature. The spatial features of a trace are retrieved more easily and show increased sensitivity to spatial interference regardless of distinctive visual characteristics of the interfering stimuli.

(168)

Stephanie Yamin¹ (syami088@uottawa.ca), Arne Stinchcombe¹, Andr  e-Ann Cyr¹, Sylvain Gagnon¹, Shawn Marshall², Malcolm Hing², Hillel Finestone

¹University of Ottawa, ²Elisabeth Bruy  re Research Institute

Examination of traumatic brain injured drivers' behavioural reactions to simulated complex roadway events.

Traumatic brain injury (TBI) survivors may exhibit difficulties in their ability to competently operate a vehicle as they are compromised due to the persistence of perceptual, cognitive and motor impairments (Galsky, 2000). TBI patients have been reported to be at an increased risk of traffic accidents once they resume driving and if distance driven is factored in (Formisano et al., 2005). We examined the reaction of TBI and non-TBI drivers when confronted with challenging road situations in a simulated environment. Twenty TBI drivers and 20 experienced control drivers were asked to drive in four simulated 8km routes each of which included one high collision risk event. Deceleration, lane position and velocity were recorded during the events and the nature of

avoidance strategies will be presented. In addition, global measures such as overall velocity, lane position, time to collision and time to complete scenario between groups will be examined. Data analysis is currently underway.

(169)

Heather Tiede (umtiedeh@cc.umanitoba.ca), Karen Mercure, Murray Singer
University of Manitoba

When thinking more can lead to the "feeling of knowing" less.

According to Koriat's accessibility account (Koriat, 1993), feelings of knowing (FOKs) are influenced by both the amount of information that is generated by a memory pointer as well as the ease with which this information comes to mind. The current study investigated which of these features of the accessibility account underlies FOKs for general-knowledge questions. Results indicated that generating more information about a particular topic actually led to lower FOKs. These results suggest that the ease with which information comes to mind can be a more important factor in making FOK judgments than the amount of information that is generated.

(170)

Joel Lucas (joelalucas@gmail.com), Craig Leth-Steensen, William M. Petrusic
Carleton University

Can switching between tasks enhance the SNARC effect?

Thirty-five participants switched between making either smaller/larger or odd/even judgements to single-digit stimuli. Within blocks, the tasks were performed in alternating runs of two trials with a 200 ms RSI. Smaller and odd responses were coupled and made with the left hand for half of the blocks and the right hand for the other half (and vice versa for the larger and even responses). For both tasks, right-hand responses were made significantly more slowly than left hand ones for smaller stimuli whereas the reverse was true for larger stimuli (i.e., the SNARC effect). This effect was significantly enhanced for task-switch trials.

(171)

Steven R. Carroll (srcarrol@connect.carleton.ca), William M. Petrusic
Carleton University

Confidence judgments are subject to numeric distance and anchoring effects.

On each trial in a sensory detection task, participants were required to decide whether they were more or less confident of the correctness of their decision than the confidence denoted by a number N ranging from 55 to 95. Subsequently, participants expressed confidence on a scale ranging from 50 to 100. Times to compare the internal confidence estimate to the numerical value N revealed numeric distance effects. Analyses of mean confidence ratings revealed anchoring effects with mean confidence ratings decreasing with decreases in N. These findings support models of decision-making that assume confidence information is represented numerically during confidence processing.

(172)

Ben Amsel (ben.amsel@utoronto.ca),
George Cree
University of Toronto Scarborough

Insights into semantic decision making: A connectionist attractor network approach.

Connectionist attractor networks have provided insight into several behavioral phenomena in semantic memory including semantic priming, feature verification, and typicality effects. However, a computational account of the classic

category verification task, in which participants are asked to verify whether an exemplar is a member of a category, remains absent from the literature. We demonstrate how an attractor network that computes a feature-based representation of word meaning can be used to provide appropriate input to a decision-making process. We propose one possibility wherein the initial word's representation is held in working memory and compared to the second as its meaning unfolds.

(173)

Shawn Tan (shawnt@ualberta.ca), Peter Dixon
University of Alberta

Effects of task switching on processing of number features.

In the SNARC effect, small numbers produce faster left hand responses and large numbers produce faster right hand responses. This phenomenon arises from an interaction between magnitude representation on a left-to-right oriented number line with selection of corresponding manual responses. Two experiments were conducted to examine the SNARC effect during task-switching. When participants alternated between colour and parity judgments, A SNARC effect was observed for judgments of parity but not color. In an alternating runs paradigm, where each task was performed twice before a task-switch, the SNARC effect emerged on parity judgments and color-switch trials but not color-repetition trials.

SUNDAY June 17

Paper Session 4.1: Human Neuroscience II

9:00 – 10:30, DSB C103

Chair: Kathy Mullen

- 9:00 – 9:15 (174)** Kathy Mullen¹ (kathy.mullen@mcgill.ca), Serge Dumoulin², Robert Hess¹
¹McGill University, ²Stanford University
The fMRI response of the LGN and V1 to red-green, blue-yellow, and achromatic visual stimuli.
 The lateral geniculate nucleus (LGN) is the primary thalamic nucleus that relays visual information from the retina to visual cortex (V1). We use fMRI to reveal for the first time the responses of the human LGN to stimulation of the two chromatic (red-green and blue-yellow) and the achromatic systems of human vision. We find that the red-green color response dominates the LGN, for the conditions used, suggesting a major contribution from P-cells. We also find a significant boost in the blue-yellow response between LGN and V1 at low temporal rates, suggesting a selective enhancement of S-cone based responses in V1.
- 9:15 – 9:30 (175)** Olav Krigolson (olav@uvic.ca), Kyle Mathewson, Clay Holroyd
 University of Victoria
Sequence learning and medial-front cortex: External versus internal error evaluation.
 In principle, neural error signals such as the error-related negativity (ERN) occur at the earliest indicator that events are worse than expected. To examine this contention we had participants perform a sequence learning task. Our results indicated that when participants were learning the sequence error feedback evoked an ERN whereas erroneous responses did not. Conversely, after the sequence had been learned an ERN was elicited by response errors but not by error feedback. Importantly, our results suggest that during the time course of learning participants in the present experiment shifted from an external to internal mode of error evaluation.
- 9:30 – 9:45 (176)** Kyle Mathewson (kylemath@uvic.ca), Olav Krigolson, Clay Holroyd
 University of Victoria
The error-related negativity as a reinforcement learning signal in motor sequence acquisition.
 Dopaminergic temporal difference (TD) reinforcement learning signals are believed crucial for the shaping of situationally appropriate behaviour. As a window into these neural signals, the error-related negativity (ERN) was examined during the shaping of motor sequences, and during their subsequent execution. During learning, the ERN elicited by feedback (fERN) is expected to diminish while the ERN following erroneous responses (rERN) is expected to increase. This predicted shift in ERN timing was obtained, mirroring the shift in timing of the dopamine signals to the earliest indicator of event outcomes, and elucidating the role of these TD signals in sequence learning.
- 9:45 – 10:00 (177)** Lara Pierce (lpierce@uvic.ca), Olav Krigolson, James Tanaka, Clay Holroyd
 University of Victoria
The ERN and reinforcement learning in a difficult perceptual expertise task.
 When people learn in a reinforcement learning task they are initially unaware when they have committed an error, and require feedback to monitor their performance. Once a task is learned, however, external feedback is no longer required. This shift can be

shown using event related potentials by examining components known as the feedback error-related negativity (ERN) that is locked to the onset of the feedback and the response ERN that is locked to participant response. In this study, the transition from the feedback ERN to the response ERN was demonstrated in a difficult perceptual learning task.

10:00 – 10:15 (178) Jennifer Heisz (heiszjj@mcmaster.ca), Judith Shedden
McMaster University

Semantic, but not perceptual face learning modifies the N170 and N400 ERP components.

The effects of face learning on event-related potentials (ERPs) were examined in a 5-day experiment. In a between-subjects design, faces were viewed while listening to related stories (character condition) or while listening to unrelated stories (non-character condition). On the first day, when all faces were unfamiliar, characters and non-characters elicited repetition effects at the N170, but not at the N400. This effect reversed on the fifth day for characters, but remained unchanged for non-characters; indicating that repetition effects at the N170 and N400 are influenced by semantic face learning rather than perceptual face learning.

10:15 – 10:30 (179) Travis Baker (teb@uvic.ca), Clay Holroyd
University of Victoria

Which way do I go? Neural activation in response to feedback processing and decision making in a virtual T-maze.

The feedback ERN (fERN) is a component of the event-related brain potential (ERP) associated with feedback processing. The reinforcement learning theory of the ERN (RL-ERN) predicts that when negative feedback is predicted by a preceding cue, the fERN should be elicited by the predictive cue and not by the negative feedback. We tested this prediction in two ERP experiments that involved a novel virtual T-Maze task. Our findings were consistent with this prediction. We also discovered differential activity between the feedback cues and spatial location at 180 msec in the medial temporal lobe. These findings support the RL-ERN theory, and suggest a possible interaction between two cognitive systems of feedback processing.

Paper Session 4.2: Cognitive Processes and Methodology

9:00 – 10:30, HSD A240

Chair: Samuel Hannah

9:00 – 9:15 (180) Matthew Crump (crumpmj@mcmaster.ca), Samuel Hannah, Lorraine Allan, Shepard Siegel
McMaster University

Probing the stream: Flexible and robust representations support contingency knowledge in the streamed-trials procedure.

We extend the streamed-trials procedure (Crump, Hannah, Allan, & Hord, in press) as a tool to measure the influence of prior knowledge on judgments of contingency information. To measure interactions between contingency knowledge and prior knowledge, we replaced the coloured geometric forms originally used as stimuli with schematic faces, or emoticons. Cues and outcomes were either smiling or neutral emoticons. Across several experiments we establish that knowledge of cue-outcome relationships is both highly robust, and yet very flexible depending on task demands. We discuss the implications of our findings for current accounts of contingency learning.

9:15 – 9:30 Samuel Hannah (hannahsd@mcmaster.ca), Matthew Crump, Lorraine Allan,

- (181) Shepard Siegel
McMaster University
Blocking the stream: Cue interaction effects in contingency judgments using the streamed-trial procedure.

The streamed-trial procedure for testing contingency judgments (Crump, Hannah, Allan & Hord, 2007) presents cues and outcomes in a rapid stream that telescopes an entire block of trials into several seconds. In three experiments we show that cue interaction effects can be elicited with the stream-trial procedure, that these effects are not linked to perceptual cue interactions, and that directing attention away from a rival cue drastically reduces cue interaction effects. How the streamed-trial procedure can be used to further explore the role of attention in cue interaction effects is discussed.

- 9:30 – 9:45
 (182) Colin M. MacLeod (cmacleod@watarts.uwaterloo.ca), Evan F. Risko
University of Waterloo

The fallacy of the independent trials assumption in cognitive tasks.

Cognitive tasks typically involve a sequence of trials where experimental conditions are represented by multiple randomly ordered instances. The data ordinarily are sorted by condition for analysis, the implicit assumption being that trial sequence holds no useful information. Yet such phenomena as negative priming and task-switching costs are fundamentally trial sequence effects, seriously undermining this assumption. We argue that the independent trials assumption is problematic and thus that sequence effects should be explored for their theory-relevant value, and we present illustrations of where this approach has been or could be informative.

- 9:45 – 10:00
 (183) Douglas Mewhort (mewhortd@post.queensu.ca)
Queen's University

What to do about skew? Sometimes it helps to throw out information.

Scores derived from latency are skewed. When a manipulation yields effects correlated with skew, the permutation test is 20% more effective at correctly rejecting the Null Hypothesis than the F test: We pay a huge penalty for violating the F-test's assumption of normality. I used Monte-Carlo procedures to show that the Kruskal-Wallis rank test is only slightly less efficient than the permutation test at finding a true effect. Even though rank tests use less information from the data, they can be more efficient than the F test at correctly rejecting the Null.

- 10:00 – 10:15
 (184) Blair Armstrong¹ (blair.armstrong@utoronto.ca), Doug Bors², Bonnie Cheng²
¹*University of Toronto*, ²*University of Toronto Scarborough*

Issues of score distribution: Should the randomization test be employed in all psychological investigations?

We present an expanded analysis of the randomization test's applicability in psychology, using recent work by Mewhort (2005) as a foil. We demonstrate that score distributions in various research areas violate the assumptions of classical statistical tests (e.g., ANOVA). We then present the results of Monte Carlo simulations on data generated from pairs of distributions which violate the assumptions of classical tests (e.g., different degrees and directions of skewness and kurtosis, unequal variance, unequal sample size). We conclude that in most cases the randomization test is a more accurate test, and provide concrete guidelines for employing classical statistical tests.

Paper Session 4.3: Memory II

9:00 – 10:30, HHB 105

Chair: Ian Neath

9:00 – 9:15
(185)

Ian Neath (ineath@mun.ca), Aimée Surprenant, Kathleen Little
Memorial University of Newfoundland

Predicting memory performance in older adults from perceptual abilities.

We examine the idea that sensory/perceptual deficits (reduced hearing and vision) in older adults can lead to more impoverished, less discriminable memory representations and thus to reduced memory performance. Similarity ratings and confusion matrices were obtained for a perceptual rating task and an immediate serial recall task, respectively. These were analyzed using multidimensional scaling and the resulting solutions were compared. The MDS coordinates were then used as input to a local distinctiveness model of memory called SIMPLE, and the ability of the model to account for age-related difference in memory based on the perceptual similarity ratings was assessed.

9:15 – 9:30
(186)

Randall Jamieson (rjamies@mcmaster.ca), Samuel Hannah, Matthew Crump
McMaster University

An episodic memory approach to associative learning.

We apply an episodic theory of memory (Hintzman, 1986) to problems in associative learning. Cue-outcome events are stored on each trial. Cues retrieve similar prior cue-outcome events from memory. The differences between the retrieved and actual outcomes determine a surprise value that modulates the strength of encoding. By storing and retrieving from specific previous experiences, the model learns to predict cue-outcome events. We will provide simulations of learning effects (acquisition, blocking, overshadowing, and latent inhibition). We point to correspondences between theories of associative learning and human memory and describe how these relations are embedded in the model.

9:30 – 9:45
(187)

Jennifer Major (jmajor13@hotmail.com), William Hockley
Wilfrid Laurier University

A test of two different revelation effects using forced-choice recognition.

Revelation effects are the increased classification of recognition memory test probes as old when they are preceded by a problem solving task. Using a two-alternative forced-choice design, we found revelation effects for words and nonwords in conditions where the revealed items were identical to the test target (same revelation condition), but not when revealed items were different than either test alternative (different revelation condition). Results were replicated using a mixed word nonword design. Results support Verde and Rotello's (2004) two-factor account of revelation effects, which proposes that different mechanisms mediate revelation effects in the same and different revelation conditions.

9:45 – 10:00
(188)

Jason Ozubko¹, Steve Joordens²
¹*University of Waterloo*, ²*University of Toronto Scarborough*

Super Memory Bros: Evaluating a dual-process account linking the mirror effect to the pseudoword effect.

Dual-process accounts of the frequency-based mirror effect argue the effect arises because low frequency words are more distinctive and less familiar than high frequency words. The pseudoword effect can be explained in this framework by assuming that

nonwords give rise to less semantics than words, thereby increasing inter-item similarity and subjective familiarity. This account is supported using novel stimuli that vary in terms of distinctiveness and similarity in a videogame paradigm. When distinctive and less familiar items are contrasted with less distinctive and familiar items, a mirror effect is observed. Systematically reducing distinctiveness (and thereby increasing inter-item similarity) gradually leads from a mirror-like effect to a pseudoword-like effect.

10:00 – 10:15
(189)

Bob Uttl (uttlbob@gmail.com), Meaghen Henry, Kimberly Baltimore
Red Deer College

Are smaller age declines on old/new recognition vs. free recall tests artifacts of easy memory tests?

According to widely held beliefs, theoretical accounts, and textbook claims, age-related declines on old/new recognition (ONR) vs. free recall (FR) memory tests are smaller. Our objective was to determine whether these claims are artifacts of poor memory measurement, specifically, too widespread use of too easy ONR tests that are unable to measure individual differences in memory. Our meta-analyses of prior research reveal that age declines on ONR tests were artificially minimized due to ceiling effects and that age declines on ONR tests are larger than previously thought.

10:15 – 10:30
(190)

Jie Gao (jie@psych.ubc.ca), Peter Graf, Gemma Gillespie, Djuna Field
University of British Columbia

Discrepancy reactions are not necessarily linked with processing fluency.

Discrepancy-attribution theory explains why a target processed with unexpected fluency might be rated as more likable. The theory stipulates that unexpectedly fluent processing produces a discrepancy reaction which is channelled into the dominant cognitive activity, for example, to polarize liking when engaged in making liking ratings. The present study explored whether discrepancy reactions can be produced by other factors (ie. factors not directly linked to processing fluency), for example, by a target display-position manipulation or by a foreground-background contrast manipulation. The results showed that both manipulations affected subjects' liking ratings and old-new decisions about words.

Paper Session 5.1: Cognitive Processes III

11:00 – 12:30, HSD A240

Chair: Christine Tsang

11:00 – 11:15
(191)

Christine Tsang (ctsang33@huron.uwo.ca), Richard Rubenstein, Ann Holding
Huron University College at Western

The development of sensitivity to novel musical scale structure: A comparison between infant and adult perception.

Recent studies have demonstrated that musical perception changes with increased experience within a culture-specific musical framework. The present study examines infant and adult sensitivity to a novel, non-Western, non-diatonic scale structure. In Experiment 1, it was found that 8-month-old infants familiarized to a Balinese composition arranged in one of two Balinese scales could abstract the scale structure of an unfamiliar, non-Western musical composition ($p < 0.02$). In Experiment 2, adult listeners familiarized to the same Balinese compositions showed an effect of scale type ($p < 0.01$). Together, these results suggest that adult sensitivity to novel scale structure may be mediated by extended experience with Western musical structure.

- 11:15 – 11:30 (192)** Danielle Droucker (danielledroucker@gmail.com), James Tanaka
University of Victoria
Reversing the other race effect in face recognition: A test of the perceptual expertise hypothesis.
It has been demonstrated that people are better at recognizing faces from their own race than faces from other racial groups. The present research investigated whether the own race recognition advantage is a consequence of perceptual exposure or perceptual expertise. In this study, Caucasian participants were trained to differentiate African (or Hispanic) faces at the subordinate level of the individual and classify Hispanic (or African) faces at the basic level of race. Consistent with the perceptual expertise account, post-training recognition of novel faces from the subordinate level category condition improved relative to recognition of faces from the basic level condition.
- 11:30 – 11:45 (193)** Iain Law (iainlaw@gmail.com), Penny Pexman
University of Calgary
Effects of physical affordances on word recognition.
Recent research has established a role for sensorimotor affordances in image and sentence processing. By comparison, an embodied approach to visual word recognition has received limited attention. The present study is an attempt to examine the role of affordances during visual word recognition. Word stimuli were rated for the desire to touch each word's referent. Participants responded to words in lexical and semantic decision tasks by pressing or releasing either a palm-sized or finger-sized button. Results suggest that touch information is activated in word recognition but that touch desirability effects are not modulated by button size.
- 11:45 – 12:00 (194)** Biljana Stevanovski (bstevano@unb.ca), Geniva Liu, Chris Bebbington, Raymond Klein
¹University of New Brunswick, ²Dalhousie University
Do signs and advertisements capture attention on a compensatory tracking task?
Advertisements that border roadways might capture attention and interfere with driving behaviour. To investigate this possibility, subjects performed a compensatory tracking task in which they kept a cursor within the centre of a visual display. At various intervals, images (traffic-related arrows, general traffic signs [e.g., a stop sign], or advertisements) were displayed to the left or to the right of the display. In some conditions, subjects performed the tracking task concurrent with an identification task (e.g., identify directional traffic signs). The impact of the presented images and the concurrent task on tracking are discussed in relation to effects on driving.
- 12:00 – 12:15 (195)** Bob Uttl¹ (uttlbob@gmail.com), Meaghen Henry¹, Jan Uttl²
¹Red Deer College, ²Avidata
Human factors in avalanche avoidance and survival.
We reviewed hundreds of avalanche incidents to examine human factors involved in avalanche avoidance and survival. For each incident, we coded features of weather, terrain, snowpack, participants, and avalanche/participant interactions. More importantly, we coded participants' behavior prior, during, and after an avalanche occurred. Our results show that majority of avalanche incidents are avoidable and many participants caught in avalanches are ill prepared for survival (e.g., fail to carry beacons, shovels). Surprisingly, professionals (avalanche control personnel) commit same or even more severe human errors than recreational backcountry users. We present a decision making model of avalanche avoidance and survival.

12:15 – 12:30
(196)

Geniva Liu¹ (geniva@dal.ca), Daniel Hutchinson², Raymond Klein¹, Bryan Maycock²
¹Dalhousie University, ²Novia Scotia College of Art and Design

The “good eye”: Scan patterns of artists engaged in drawing.

While vision allows us to successfully guide our skilled actions in the environment, the skilled action of drawing eludes many of us. However, an individual who can accurately draw a scene from observation is said to possess a “good eye.” Is there a systematic pattern of eye movements that underlies this metaphor? We examine this question by quantifying the eye and hand movements of expert artists while they draw a simple three-dimensional scene. The results identify the extent to which experienced artists possess a common set of visual scanning strategies when presented with identical stimuli and drawing conditions.

Paper Session 5.2: Animal Neuroscience

11:00 – 12:30, DSB C103

Chair: Brian Christie

11:00 – 11:15
(197)

Brian Christie (bchristie@psych.ubc.ca)
University of Victoria

2B or not 2B: Questioning NR2 subunit roles in synaptic plasticity.

Synaptic plasticity serves as the main model for how learning and memory processes occur in the mammalian brain, however it remains unclear how NMDA (n-methyl-D-aspartate) receptor activation can be involved in both increases and decreases in synaptic strength. In a series of experiments I will show that prior exercise can dynamically modulate the contribution of NR2 subunits to both long-term potentiation (LTP) and long-term depression (LTD). These results indicate that exercise can determine the type of contribution that NMDA receptor NR2A and NR2B subunits to bidirectional synaptic plasticity, and give us more reason to view the adult brain as a dynamic entity capable of both structural and functional remodeling.

11:15 – 11:30
(198)

Sheila MacIntosh (m0220434@student.nipissingu.ca), Nicklaus Csuzdi, Amy Stillar, Allison Birdsall, Megan Donnelly, Matti Saari
Nipissing University

Sensitivity to isoflurane anaesthesia in ten day old rats: A paradoxical effect?

We have previously shown that sensitivity to isoflurane is age-dependent. Here we report on three experiments quantifying our observation that rat pups at PND10 show a reduced anaesthetic response to isoflurane. Wistar rat pups at PND5, 10, 15, and 20 were anaesthetized with isoflurane in an induction chamber modified to record motor activity of four subjects simultaneously. The three experiments confirm our previous observations that PND10 pups are less sensitive to anaesthetic effects. The results support our suggestion that the anaesthetic response is mediated by specific neural systems in the brain.

11:30 – 11:45
(199)

Richard Brown¹ (rebrown@dal.ca), Mary-Elyn Keenan¹, Rhian Gunn
¹Dalhousie University

Dissecting mouse models of human neuro-behavioural disorders: A DSM-IV for the mouse.

How can we determine the reliability and validity of a transgenic mouse model of a human neural disorder such as Alzheimer's Disease, Fragile X syndrome or ADHD? This presentation will focus on our behavioural analysis of the Coloboma mutant mouse (C3H/HeSnJ-cm), which has been proposed as an animal model of ADHD. We have examined these mice and their littermate controls in two different sizes of open field,

pre-pulse inhibition, acoustic startle, Rotarod, balance beam, spontaneous alternation in a Y-maze, conditioned odour preference, continuous alternation in the T-maze, tail-flick test and hot-plate test. Is this a valid and reliable model of ADHD or is it not?

11:45 – 12:00
(200)

Guey-Jen Lai (jen.lai@uleth.ca), Hugo Lehmann, Simon Spanswick, Hiroe Yamazaki, Robert J. Sutherland
University of Lethbridge

Behavioural deficit and functional recovery after granule cell death in hippocampus.

The hippocampus is one of the two brain regions that continuously generate new cells in the adult mammalian brain. The dentate gyrus subgranular zone of the hippocampus is the source of newly born granule cells. Bilateral removal of adrenal glands leads to specific granule cell death in hippocampus without significant effects in other regions of the brain. Thus, we use this model to study the regeneration of lost cell and its role in function restoration of brain circuitry. Several behavioural tests are shown to be useful in characterizing the deficit caused by granule cell death in the hippocampus.

12:00 – 12:15
(201)

Robert Brown (rambrown@ucla.edu), Bernard Balleine
University of California – Los Angeles (UCLA)

Striatal plasticity during the acquisition of instrumental responding.

The dorsal striatum plays a role in action selection and choice. Previous work has shown distinct regions of the striatum are critical for habitual and goal directed performance in instrumental responding. Less is known about the nature and temporal requirements of striatal plasticity that underlies instrumental responding. We report that activation of pERK is regionally specific, and time limited as measured by Western blot and immunohistochemistry. Persistent activation in some regions following overtraining may reflect bidirectional plasticity processes. These results may be important for understanding the underlying pathologies of human disease states such as obsessive-compulsive disorder, obesity and drug addiction.

Paper Session 5.3 (Symposium): Perspectives on the Ubiquity/Tyranny of Time

11:00 – 12:30, HHB 105
Overview: Simon Grondin

(202)

Simon Grondin (simon.grondin@psy.ulaval.ca), Simon Tobin, Andréline Gosselin
Université Laval

Remembering duration retrospectively.

The purpose of this talk is to discuss methods for experimentally investigating the memory of durations for past periods. The results of a first experiment, where 50 participants performed five different cognitive tasks (120 to 480 seconds) and used verbal estimates (VE), showed that the value of the power law exponent was about .47 for retrospective timing. In another experiment that involved performing a cognitive task or listening to music, three methods (VE, relative estimates and comparisons with a standard) for estimating duration were compared and led essentially to the same conclusion: longer remembered duration for the listening conditions.

(203)

Richard A. Block¹ (block@montana.edu), Peter A. Hancock², Dan Zakay³
¹Montana State University, ²University of Central Florida, ³Tel Aviv University

Cognitive workload affects duration judgments: Meta-analytic evidence.

Experiments investigating whether or not cognitive workload affects duration judgments of 3 sec or longer were meta-analyzed. Cognitive workload refers to the amount of

nontemporal information-processing, or attentional, demands placed on a person. Effect sizes depend on whether or not participants were aware before the duration that a duration judgment was required (prospective vs. retrospective paradigms). With greater cognitive workload, the ratio of subjective to target duration decreases for prospective judgments (verbal estimates and reproductions shorten and productions lengthen), but it increases for retrospective judgments. The findings support an attentional-gate model of prospective timing and a contextual-change model retrospective timing.

- (204) Peter Graf (pgraf@psych.ubc.ca)
University of British Columbia

Don't let the bathtub overflow.

Our days are filled with tasks, like filling the bathtub, that require some form of monitoring. The present research explored whether monitoring is attention demanding, whether all tasks evoke the same monitoring schedule, and whether all schedules are equally attention demanding? In a series of experiments, undergraduate students monitored either a clock that ran down in 12 minutes or a container that filled up in 12 minutes; their task was to turn off the clock or the tap when the target was reached. While monitoring, subjects were engaged in another activity (e.g., a recognition memory experiment). Across experiments, we manipulated the relative importance of the monitoring versus the simultaneously ongoing activity, the attentional demands of the latter, and the shape of the container (e.g., it looked either like a cylinder or a vase) that was being filled. The results showed that monitoring was affected by all of these factors.

- (205) D. Stephen Lindsay¹ (slindsay@uvic.ca), Anna Lisa Cohen², Justin Kantner¹
¹*University of Victoria*, ²*Yeshiva University*

The intention interference effect.

Goshke and Kuhl (1993) found that forming an intention to perform a prospective memory (pm) task facilitates performance on reading aloud pm-task-related words. They took this "intention superiority effect" as evidence that representations of task-related words are held in a highly accessible state. Cohen, Dixon, and Lindsay (2005) developed an interference measure of intention, demonstrating slowed Stroop colour-naming on pm-task-related words on trials on which subjects were instructed that they would later have to perform a task compared to trials on which they were told they could forget the task. We report new experiments using this intention interference procedure.

- (206) Donald Wilkie (dwilkie@psych.ubc.ca)
University of British Columbia

Discovery of ordinal timing.

Animals possess multiple timing systems. One is an ability to discriminate circadian, (time of day) information. In an early demonstration of this ability Saksida and Wilkie (1994) trained pigeons to peck one key in the morning and a second key in the afternoon. To rule out a non-temporal strategy such as alternation, morning or afternoon sessions were sometimes skipped. Skipping had no effect. We have recently trained rats on a similar task. Although the rats learned the task they were disrupted by skipped morning sessions (but not skipped afternoon sessions). Rather than consulting a circadian clock, rats seem to engage in ordinal timing (i.e., learn an ordinal sequence within a period of a day). We will offer some speculations on this species difference.

Awards and Hebb Lecture (2:00 – 3:45)
MacLaurin Building (MAC), Room A144

- (207) **Donald O. Hebb Lecture**
Morris Moscovitch (moms@psych.utoronto.ca)
University of Toronto
The cognitive neuroscience of recent and remote episodic and semantic memory.

Annual General Meeting (4:00 – 5:30)
MacLaurin Building (MAC), Room A144

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