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NorthWest Cognition And Memory

NOWCAM is an annual venue for students and researchers from the Pacific Northwest working in the general area of memory and cognition to meet and share their current research with an informed, sympathetic, and good-humoured audience.

NOWCAM 2018 Program

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NOWCAM MISSION STATEMENT

The Pacific Northwest is home to numerous wide-flung Psychology departments with strengths in cognition and memory. NOWCAM provides a forum for faculty and students from these departments to get together and discuss their latest research. Interactions with other researchers can spark innovations and cross-fertilizations that move the research forward in new and exciting ways. In any case, it's good fun to get together with friends and colleagues who share similar interests, chew the cognitive rag a bit, and quaff a beer or two over a good meal.

The aim of NOWCAM is to support Pacific Northwest faculty and student researchers working in the general area of memory and cognition by creating an annual venue in which they can share their current research activities with an informed, sympathetic, and good-humoured audience. With the exception of keynote addresses, NOWCAM favours papers and posters presented by students (usually with faculty as co-authors). This gives students an opportunity to develop their chops, and faculty a chance to sit back and relax.

INTERNET ACCESS

Visiting members of eduroam supported institutions may securely connect to the EDUROAM wireless network without needing a guest account. Authentication and support of eduroam for visitors is provided by your home institution. Note: The best way to prepare to use EDUROAM for wireless access on a device at another institution is to ensure it works properly at your home institution before travelling. Further information about eduroam can be found <http://eduroam.ca>, or <http://eduroam.org> for visitors from outside Canada. If your institution does not belong to eduroam or your wireless device has not been configured to use eduroam, you will need to connect to KPU's Guest Wi-Fi network. This requires a mobile phone, and can be done using the following steps:

1. Connect to the Wi-Fi network "KPUGuest"
2. Open your browser and provide your mobile phone number
3. Check your phone to receive an access code
4. Enter the access code into your browser to connect to the network

TRANSIT INFORMATION

The following buses get you within easy walking distance of the conference venue: **301, 405, 410, 430, C96**. If you are taking SkyTrain to the venue, the closest station is **Lansdowne Station**, which is a roughly 10-minute walk from the venue (see p. 30 for a map). Both [TransLink](#) and [Google Maps](#) offer detailed transit information and can help you find a route to the venue. Adult fares are **\$2.85 for 1 Zone, \$4.10 for 2 Zones, and \$5.60 for 3 Zones** (if you are staying close by, you will only be traveling 1 Zone). Current schedules, route maps and fares for bus, SkyTrain, SeaBus, and West Coast Express services are available at www.translink.bc.ca.

PARKING INFORMATION

The cost of parking on campus is \$5.00/day. Visitor parking is available in all non-reserved parking stalls at KPU. Payment may be made at one of the two pay stations (see p. 29 for a parking map)

THURSDAY EVENING SOCIAL INFORMATION

On Thursday, May 10th, there will be a no-host social event in the vicinity of the conference venue at **Hanok Korean (100-8400 Alexandra Road)**, by the 4 Points Sheraton Hotel. Join us starting at 6:00 PM for a drink or a meal! See p. 30 for directions from the conference venue to the Thursday evening social.

GALA INFORMATION

On Friday, May 11th a gala dinner will be held at **Dragon Group Seafood Restaurant (4751 Garden City Road)**, from 6:30 – 10:00 PM. The restaurant is a 10-minute walk from the venue, and all who purchased a Gala ticket are welcome to join us immediately after the keynote address. See p. 30 for directions from the conference venue to the Gala dinner.

ACKNOWLEDGEMENTS

We would like to thank our student organizing committee: Dawn-Leah McDonald, Michelle Hunsche, Eric Mah, Angela Giesbrecht, as well as our superb faculty organizers Drs. Daniel Bernstein & Carla MacLean. Big thanks to the student volunteers who provided additional support: Aaron Kong, Amanda Tabert, Kristen Zeller, Amanda Dumoulin, Dave Khera, Jack Chen, & Jon Lau. We would also like to thank Ivy Ng of the Kwantlen Psychology Lab for all her assistance with planning. Finally, we would like to thank Trishia Coburn, the NOWCAM '17 planning committee and Steve Lindsay for passing the baton (and their invaluable planning materials and advice)!

THURSDAY, MAY 10TH, 2018

6:00 pm – late **Social Event – No-Host Reception at Hanok Korean ([100-8400 Alexandra Road](#))**

FRIDAY, MAY 11TH, 2018

8:30 – 9:00 **Registration (Refreshments Provided) – The Melville Centre for Dialogue (Room 2550)**
9:00 - 9:15 **Opening Remarks**

9:15 – 10:30 **Paper Session I: Forensic Science & Learning**

- 9:15 The Impact of Gender Stereotypes on Perceptions of a Shoplifter – Does the Male Stereotype put Men at a Disadvantage?
Shelby Anderson & Dr. Kelly Warren
- 9:30 Believing is Seeing: The Effects of Expectation on Person Perception
Amanda V. Tabert, Carla L. MacLean, & Itiel E. Dror
- 9:45 Effects of Curative Judicial Instructions on Confirmation Bias in Cases Involving Retracted Confessions
Kara J. Kristoffersson, Patricia I. Coburn, Megan E. Giroux, Deborah A. Connolly, & Daniel M. Bernstein
- 10:00 Motor Learning: The Effect of Expectancy on Reward Positivity and Readiness Potential
Robert Trska, Chad C. Williams, Cameron Hassall, Clay Holroyd, & Olav Krigolson
- 10:15 Medial prefrontal cortex represents sequence identity in a sequence production task
Danesh Shahnazian, Clay Holroyd, José Ribas Fernandez, Massimo Silvetti, & Tom Verguts

10:30 – 11:00 **Break (Refreshments Provided)**

11:00 – 11:50 **Speed Talks**

- 11:00 Pretty Posters: Evidence Based Poster Design
Thu (Rosie) Tran, Yoojeen Ahn, Natasha Pestonji-Dixon, & Peter Graf
- 11:10 Examining the Neural Correlates of Impulsivity Using a Portable Electroencephalography Device
Taryn Berman, Clay Holroyd, & Olav Krigolson
- 11:20 Invisible Test: Utilizing Auditory Oddball for Implicit Fatigue Assessment
Stephen J.C. Luehr & Olav Krigolson
- 11:30 Where will you look? Implied social presence and its effect on visual attention to erotic and neutral stimuli in men and women
Sonia Milani, Alan Kingstone, & Lori Brotto
- 11:40 Can the age-related differences in the speed of video game play be explained by motor speed?
Joseph J. Thompson & Mark R. Blair

11:50 – 1:30 Lunch (Not Provided)

1:30 – 2:30 Paper Session II: Memory

- 1:30 Task switching reduces efficiency of visual working memory
D.L. McIntyre, Daniel Tay, & John McDonald
- 1:45 A preliminary meta-analysis of stimulus valence effects on recognition memory
Kaitlyn Fallow
- 2:00 A dissociation between memory and truth judgments: A difficult puzzle for revelation effect accounts
Devon Currie & Glen Bodner
- 2:15 All (isn't) well that ends well? A lack of peak-end rule findings across the lifespan
Eric Y. Mah & Daniel M. Bernstein
-

2:30 – 4:00 Poster Session 1 (Refreshments Provided)

4:00 – 5:00 Paper Session III: Social Cognition & Motor Control

- 4:00 Behavioural responses and eye movement reveal Theory-of-Mind errors in adults
Angela Giesbrecht, Daniel Derksen, & Daniel M. Bernstein
- 4:15 Fluency Misattribution Drives Auditory Hindsight Bias for Non-words
Megan E. Giroux & Daniel M. Bernstein
- 4:30 Hindsight Bias for Positive Emotions Depends on Emotional Distinctiveness
Michelle C. Hunsche, Megan E. Giroux, Ragav Kumar, & Daniel M. Bernstein
- 4:45 Motor intention and action plan switching: How is an action selected?
Duo Wang, Daniel Bub, & Michael Masson
-

5:00 – 5:10 Break

5:10 – 6:20 Keynote Speaker: Dr. James W. Tanaka

6:30 – 10:00 Gala Dinner: Dragon Group Seafood Restaurant ([4751 Garden City Road, Richmond](#))

SATURDAY, MAY 12TH, 2018

8:30 am Refreshments provided

9:00 – 10:30 Poster Session II

10:30 – 11:00 Break (Refreshments Provided)

11:00– 11:45 Paper Session IV: Decision Making

11:00 The Risks of Measured Risk-Taking: Can Behavioural Measures of Risk-Taking Predict Binge Drinking in Undergraduate Students?

Carolyn Helps, Cassandra Turner, & Brianna Turner

11:15 Triplets! Optimization of retinopathy diagnosis through triplet embedding

Cameron Hassall, Mikaela Chia, Bruce Wright, & Olav E. Krigolson

11:30 Midfrontal Theta: Real World Applications in Medical Education

Jordan Middleton, C. Williams, B. Wright, & O.E. Krigolson

11:45 – 1:15 Poster Session III (Lunch Provided)

1:15 – 2:15 Paper Session V: Perception & Attention

1:15 Putting the Learning Back into Neural Learning Systems

Chad C. Williams, Thomas D. Ferguson, Mathew Hammerstrom, Francisco L. Colino, Bruce Wright, & Olav E. Krigolson

1:30 Examining perception of personally familiar faces using fast periodic visual stimulation

Alison Campbell & James W. Tanaka

1:45 More attention, greater control: Acute and chronic stress correlate with differences in alpha and theta oscillations

Thomas D. Ferguson, Chad C. Williams, Francisco L. Colino, Bruce Wright, & Olav E. Krigolson

2:00 Is coffee the remedy for boredom?

Quentin Raffaelli, Allison Drody, Eric Dos Santos, Caitlin Mills, Jessica Andrews-Hanna, & Kalina Christoff

2:15 – 2:30 Closing Remarks

POSTER SESSION I (FRIDAY: 2:30 – 4:00)
--

- 1 Tactile perception during reach-and-grasp action observation
Morgan Teskey, Daniel N. Bub, & Michael E.J. Masson
- 2 Changes in IOR magnitude with increasing number of locations
Elisabeth Kreykenbohm & Thomas M. Spalek
- 3 Distractor Suppression: An Automatic or Controlled Process?
Katelyn Baertsch & John McDonald
- 4 Change Detection in Chinese Characters: The role of Unchanging Characters' Lexicality
Qiwán Shi, Yinglan Jiang, Wendi Li, & Richard D. Wright
- 5 Change Detection of Inner and Outer Object Components Varies with Stimulus Configuration
Ryan T. deKergommeaux, Qiwán Shi, Cynthia N. McDowell, Yasmeeen Mezban, Michelle Ilagan, & Richard D. Wright
- 6 Change Detection and Degree of Object Complexity
Kelsey N. Alexander, Qiwán Shi, Jennifer R. Krentz, Cassidy A. Ouldtata-Allan, & Richard D. Wright
- 7 Change Detection of Object Shapes and Fill Patterns
Jennifer R. Krentz, Qiwán Shi, Cassidy A. Ouldtata-Allan, Kelsey N. Alexander, & Richard D. Wright
- 8 Change Detection and Transposition of Object Colours
Carissa M. Stocco, Qiwán Shi, Ryan T. deKergommeaux, Cynthia N. McDowell, & Richard D. Wright
- 9 With faces in mind: Examining the role of selective attention and mind wandering during a visual task
Avarna Fernandes, Cynthia Lu, Jennifer Yip, & Todd C. Handy
- 10 Attention capture by faces and trains: Evidence from eye tracking and behavioural data
Troy Q. Boucher, Nichole E. Scheerer, Elina Birmingham, & Grace Iarocci
- 11 Holistic gist: The speed of holistic face processing
Michaella Trites, Elizabeth Gregory, Jocelyn Chalmers, Buyun Xu, & Jim Tanaka
- 12 Holistic gist ORE: The speed of holistic face processing advantages for own-race faces
Xiaoyi Liu, James Tanaka, & Buyun Xu
- 13 Early bird vs. night owl: Using EEG to measure your attention fluctuations throughout the day
Lena Walther, Chad Williams, & Olav Krigolson
- 14 Analysis of a Multi-task domain characterized by fluctuating task complexity levels & its effects on ocular-motor measures related to higher level learning
Joseph J. Thompson, Mark R. Blair, Scott Harrison, & Robin C.A. Barrett
- 15 Efficiency of Pop-Out Visual Search: Explaining a Discrepancy
Taylor Cork, Hayley E.P. Lagroix Vincent Di Lollo, & Thomas M. Spalek
- 16 The Effect of Positive and Negative Self-Talk on Cognitive Performance
Abdulrahman Alharbi & Professor Farhad Dastur

POSTER SESSION II (SATURDAY: 9:00 – 10:30)

- 1 Crime Blindness and Eyewitness Suggestibility: The Role of Attention Focus in the Adoption of Misinformation
Soha Pourpirali, Dayna Guzman, Rochelle A. Robinson, Aneesa Shaikh, Nathaniel Strong, & Ira E. Hyman
- 2 Have you seen this film detail before? Accuracy feedback boosts remembering
Taylor Blanchette & Glen Bodner
- 3 Mobile EEG Objectifies Cognitive Fatigue Effects on Attentional Resource Allocation
Robert McDermit & Olav Krigolson
- 4 Neural Representations of Risk and Ambiguity
Mitchel Kappen, Cameron D. Hassall, & Olav E. Krigolson
- 5 Music's Effect on Emotion
Connor J. Mitchell, Devinder Khera, Gurjot Chhina, & Jacob Nolan
- 6 Performance and Variability Measures in Driving Research
Jack Zhou, Taylor Cork, Bertrand Sager, & Thomas M. Spalek
- 7 The Easy-to-Hard Advantage with Melanoma Detection Training Using the Perceptual Expertise Approach
Kelly E. Grannon, Shikha Khurana, Faye Lee, Buyun Xu, & James Tanaka
- 8 Implicit Strategies for Diabetic Retinopathy Classification: Similarity & Perceptual Space
Mikaela S. Chia, Cameron D. Hassall, Clay B. Holroyd, Bruce Wright, & Olav E. Krigolson
- 9 Bilingualism and Lifespan Cognition
Kirandeep K. Dogra, Eric Y. Mah, & Daniel M. Bernstein
- 10 Factors Influencing Intrusiveness in Autobiographical Memories
Heather Tower, Madison Johnson, Hanna Webster, & Ira Hyman
- 11 How do eye movements affect the qualitative aspects of a memory?
Erin L. Maxwell & Glen Bodner
- 12 The Impact of Overall Scene Colour and Orientation on Change Detection
Laurissa Wilson, Qiwan Shi, & Richard D. Wright
- 13 The Mind's Eye: Switching Memory Perspective when Recalling Biased Behavior
Tess Schorn, Ellen Carroll, Alex Czopp, & Ira Hyman

POSTER SESSION III (SATURDAY: 11:45 – 1:15)
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- 1 Bridging the gap between learning and fun: Relationship between video game use and self-regulated learning
Shih-Chieh Chen & Jocelyn Lymburner
- 2 Neural Learning Signals Reflect Task Performance in a Medical Context
Mathew Hammerstrom, Chad C. Williams, Thomas D. Ferguson, Francisco L. Colino, Bruce Wright, & Olav E. Krigolson
- 3 The Effect of Feedback Frequency on the P300 for Motor Learning
Georgia Powell, M. Kappen, T. Berman, F.L. Colino, & O.E. Krigolson
- 4 Time on feedback during learning
Katerina Dolguikh, Jordan I. Barnes, Caitlyn McColeman, Yue Chen, Natasha Boorman, & Mark R. Blair
- 5 Auditory Feedback Control of Speech in Children with and without ASD
Nichole E. Scheerer, Dr. Jeffery Jones, & Dr. Grace Iarocci
- 6 Predictors of University Students' Knowledge of Autism Spectrum Disorder
Ariel Cheung, Emily Gardiner, & Grace Iarocci
- 7 Perception of social interactions: How affect traits and visual attention influence theory of mind
Kristen Zeller, Kevin Smith, Jaime Christiaanse, & Daniel M. Bernstein
- 8 Relationship between mind wandering and schizotypy
Cynthia Lu, Avarna Fernandes, Jennifer Yip, & Todd Handy
- 9 Electrophysiology of emotional reactivity and response inhibition in children and adolescents with attention-deficit/hyperactive disorder
Susanna Piasecki, Robert Ley, Killian Kleffner, Urs Ribary & Mario Liotti
- 10 Exercise habits and the impact on cognitive function: A MUSE study
Emily Jackson, Wande Abimbola, & O.E. Krigolson
- 11 Effects of Pain and Monetary Loss on Frontal Midline Theta Activation: A Pilot Study
Cora-Lynn Bell, Sepideh Heydari, & Clay Holroyd
- 12 Using a Pair of Glasses to See Your Brainwaves
Greg Gagliardi, Chad C. Williams, Wande Abimbola, & Olav E. Krigolson
- 13 Near or mere exposure: Conceptual/perceptual fluency and the mere exposure effect
Natasha Pestonji-Dixon, George Molina, & Dr. Peter Graf
- 14 Planning can lead to False Memory
Aaron Kong, Zach I. Hamzagic, Michael J. Silverstein, Anna-Lisa Cohen, Daniel M. Bernstein, Daniel G. Derksen, & D. Stephen Lindsay

ABSTRACTS

FRIDAY, MAY 11TH, 2018

Paper Session I: Forensic Science and Learning (9:15 – 10:30)

The Impact of Gender Stereotypes on Perceptions of a Shoplifter – Does the Male Stereotype put Men at a Disadvantage?

Shelbie Anderson, *Simon Fraser University*, & Dr. Kelly Warren, *Grenfell- Memorial University of Newfoundland*
shelbiea@sfu.ca

To analyze the impact of gender differences on perpetrator perceptions, a convenience sample completed a questionnaire after being randomly assigned to see a picture of a male or female shoplifter. Results showed that perceived motivations were largely similar across genders, however, the differences that did arise aligned with gender stereotypes. Findings suggest that eyewitnesses may perceive shoplifters differently based on gender, but these perceptions may not necessarily impact recommended punishments.

Believing is Seeing: The Effects of Expectation on Person Perception

Amanda V. Tabert, Carla L. MacLean, *Kwantlen Polytechnic University* & Itiel E. Dror, *University College London*
AmandaTabert@gmail.com

We examined the influence of context on person perceptions. We paired feminine or masculine clothing with a gender-ambiguous face and asked participants to make gender, height and weight estimates in two phases. Results revealed height and weight estimations to be consistent with gender categorization, and 32% of gender categorization was changed in phase 2. Our results demonstrate the effect of expectation on perceptual judgments and the intra-subject inconsistencies in judgment.

Effects of Curative Judicial Instructions on Confirmation Bias in Cases Involving Retracted Confessions

Kara J. Kristoffersson, Patricia I. Coburn, Megan E. Giroux, Deborah A. Connolly, *Simon Fraser University*, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
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Cases involving confessions may bias how jurors evaluate other evidence. We tested whether juror instructions could mitigate this effect. Participants read a criminal trial summary which varied in terms of confession presence and type of fingerprint evidence (inculpatory; exculpatory; ambiguous). Participants then rated the accused's guilt and credibility, and assigned weight to the fingerprint evidence. Findings show that curative instructions can help protect an accused's credibility in retracted confession cases.

Motor Learning: The Effect of Expectancy on Reward Positivity and Readiness Potential

Robert Trska, Chad Williams, Cameron Hassall, Clay Holroyd, & Olav Krigolson, *University of Victoria*
Rob.Trska@Gmail.com

EEG is a method to measure cortical activity in the brain. Recent evidence demonstrates that differences in anticipated outcomes and feedback modulate various human event-related potentials. Of interest are the Reward Positivity, a component associated with reward learning and expectancy, and the Readiness Potential, a slow-ramping component associated with motor planning and execution. Modulation of these components indicates a connection of motor processes and reward-error centres of the brain.

Medial prefrontal cortex represents sequence identity in a sequence production task

Danesh Shahnazian, Clay Holroyd, *University of Victoria*, José Ribas Fernandez, Massimo Silvetti, & Tom Verguts, *Universiteit Gent*
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A recent influential theory posits a significant role for the medial prefrontal cortex in representing the identity of the sequence that is being executed. To test this prediction, we conducted a fMRI study of participants engaged in a novel sequence production task. A whole brain analysis revealed a significant association between BOLD response pattern of the voxels located in the medial prefrontal cortex and the identity of the sequence.

Speed Talks (11:00 – 11:50)
Pretty Posters: Evidence Based Poster Design

Thu (Rosie) Tran, Yoojeen Ahn, Natasha Pestonji-Dixon, & Peter Graf, *University of British Columbia*
rt.thutran@gmail.com

Posters are the most common presentation method, yet available guidelines for designing effective posters have not been validated. To investigate which poster dimensions are conspicuous for conference attendees, undergraduate student participants rated the dissimilarity between 20 psychology posters and the overall appeal of each poster. A multi-dimensional scaling analysis revealed posters were perceived differently on text heaviness and number of colors. Posters with less text were rated as more appealing.

Examining the Neural Correlates of Impulsivity Using a Portable Electroencephalography Device

Taryn Berman, Clay Holroyd, & Olav Krigolson, *University of Victoria*
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Impulsivity is an inherent aspect of adolescence and has been examined extensively in a behavioural context. However, empirical support for the neural components associated with impulsivity is limited and inconsistent. We used a portable electroencephalography device to examine the correlates associated with response inhibition tasks in participants with high and low levels of impulsivity. Despite not differing in accuracy, the groups displayed differences in P300 amplitude, wavelet frequency, and phase.

Invisible Test: Utilizing Auditory Oddball for Implicit Fatigue Assessment

Stephen J.C. Luehr & Olav Krigolson, *University of Victoria*
sluehr@uvic.ca

Fatigue is a major safety concern for medical and transportation industries. Here we show that an ignored stimulus can be used to elicit event-related brain potentials even when distracted. Furthermore, we link this to past research by our lab that supports the use of this task to assess fatigue in real-time in the workplace. Specifically, by using portable EEG system we can objectively and non-intrusively perform fatigue assessment during tasks.

Where will you look? Implied social presence and its effect on visual attention to erotic and neutral stimuli in men and women

Sonia Milani, Alan Kingstone, & Lori Brotto, *University of British Columbia*
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An implied social presence was manipulated to examine looking behaviour of men and women who were either aware that their eyes were being tracked or unaware of this fact. As hypothesized, the 'aware condition' impacted women more than men. Women made fewer fixations than men in the aware condition and equally distributed their attention. In the 'unaware condition', women fixated more on the male models in the erotic images.

Can the age-related differences in the speed of video game play be explained by motor speed?

Joseph J. Thompson & Mark R. Blair, *Simon Fraser University*
jjthomps@sfu.ca

Laboratory studies have identified changes in cognitive functioning in early adulthood. The present study extends previous generalizations of this work to the complex video game skill, StarCraft 2. We show that previous findings of age-related change after 24 years of age are not due to a motor decline, as an in-situ measure of motor speed explains only a fraction of the age-related slowing in StarCraft 2.

Paper Session II: Memory (1:30 – 2:30)**Task switching reduces efficiency of visual working memory**

D.L. McIntyre, Daniel Tay, & John McDonald, *Simon Fraser University*
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Individual variance in the capacity and processing efficiency of visual working memory is related to attentional control. High-capacity memorisers selectively exclude distractors from memory, but this efficiency advantage requires that the upcoming task be predictable. Introducing random task switches into the memory-cueing paradigm disrupts proactive attentional control settings; memory activity – tracked in EEG as contralateral delay activity – compensates to facilitate task performance, maximizing regardless of the number of to-be-remembered items.

A preliminary meta-analysis of stimulus valence effects on recognition memoryKaitlyn Fallow, *University of Victoria**kmfallow@uvic.ca*

Research on the effects of emotion on recognition memory has produced mixed results, variously suggesting emotion enhances, worsens, or does not affect performance. While some of this variability may be attributable to neglected response bias effects, findings on this have also been inconsistent. I will present results from a small-scale meta-analysis of some of this literature, focusing on stimulus type and valence as potential moderators of the emotion-recognition relationship.

A dissociation between memory and truth judgments: A difficult puzzle for revelation effect accounts.Devon Currie & Glen Bodner, *University of Calgary**devon.currie@ucalgary.ca*

The revelation effect is a cognitive illusion whereby items preceded by an initial task (vs. no task) receive higher recognition and truth ratings. We evaluated the influence of revelation task difficulty (easy vs. hard anagrams) on both ratings. Consistent with a discrepancy misattribution account, the revelation effect on recognition ratings was larger after solving the hard (vs. easy) anagrams. However, contrary to our prediction, truth ratings showed the opposite pattern.

All (isn't) well that ends well? A lack of peak-end rule findings across the lifespanEric Y. Mah & Daniel M. Bernstein, *Kwantlen Polytechnic University**eric.mah@kpu.ca*

According to the memory heuristic called the “peak-end rule” (PER), we judge events primarily by the quality of the best/worst moments (“peak”) and the final moments (“end”). Research suggests that the PER affects judgments of simple positive events. Over 3 experiments (N = 829), we tested the rule in people ages 2-89 using small gifts. We found no evidence of the PER, and discuss possible boundary conditions for the rule.

Poster Session I (2:30 – 4:00)**1 Tactile perception during reach-and-grasp action observation**Morgan Teskey, Daniel N. Bub, & Michael E. J. Masson, *University of Victoria**morganteskey@gmail.com*

Previous research has shown that detection of a tactile event can be modulated by the performance of a goal-directed action. We tested and verified the proposal that observing a reach-and-grasp action performed by another person would also influence tactile perception. The nature of this influence appears to change during the course of the observed action, and is not specific to the limb that corresponds to the observed action.

2 Changes in IOR magnitude with increasing number of locationsElisabeth Kreykenbohm & Thomas M. Spalek, *Simon Fraser University**ekreyken@sfu.ca*

Inhibition of Return (IOR) is the finding that responses are slower to targets at previously cued compared to uncued locations. A rarely explored question is whether the total number of possible stimulus locations affects IOR. Birmingham et al. (2007) found that IOR magnitude decreased with the number of locations, supporting a gradient of inhibition account. Upon re-examining this issue, the results seem inconsistent with a gradient account.

3 Distractor Suppression: An Automatic or Controlled Process?

Katelyn Baertsch & John McDonald, *Simon Fraser University*
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In fixed feature search paradigms, attentional capture and distractor suppression may be mediated by the priming of repeated features, or modulated in a top-down fashion. The current research aimed to determine whether distractor suppression specifically is driven in an automatic or controlled fashion. When observers searched for cued targets in the presence of a salient distractor, it was revealed that neither of these processes is mediated in an automatic fashion.

4 Change Detection in Chinese Characters: The role of Unchanging Characters' Lexicality

Qiwán Shi, Yinglan Jiang, Wendi Li, & Richard D. Wright, *Simon Fraser University*
qiwan@sfu.ca

The flicker-task was used to examine how unchanging non-targets affect the search for changing Chinese character targets. Target detection performance was compared with three non-targets sets: all real characters, all pseudo characters, and a mix of real and pseudo characters. Changes were found fastest when the target was surrounded by real characters, and slowest when surrounded by pseudo characters. This demonstrates that the lexicality of unchanging characters affects target search.

5 Change Detection of Inner and Outer Object Components Varies with Stimulus Configuration

Ryan T. deKergommeaux, Qiwán Shi, Cynthia N. McDowell, Yasmeen Mezban, Michelle Ilagan, & Richard D. Wright, *Simon Fraser University*
rdekergo@sfu.ca

We used a flicker task to determine whether changes to the inner components of objects would be detected faster than changes to the outer components, or vice versa. Three different types of stimulus configurations were used. The nature of the changes was also manipulated. The results indicated that the relative efficiency of detecting inner versus outer object component changes depends on the type of stimulus objects involved.

6 Change Detection and Degree of Object Complexity

Kelsey N. Alexander, Qiwán Shi, Jennifer R. Krentz, Cassidy A. Ouldtata-Allan & Richard D. Wright, *Simon Fraser University*
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We used a flicker task to examine how the detectability of changes is influenced by the degree to which objects are altered. Stimuli were simple diagonal lines in one condition; had an additional line in a second condition; and had four additional lines in a third condition. The results suggest that mental comparisons of original and altered targets require more time when the complexity difference between them is increased.

7 Change Detection of Object Shapes and Fill Patterns

Jennifer R. Krentz, Qiwan Shi, Cassidy A. Ouldata-Allan, Kelsey N. Alexander & Richard D. Wright, *Simon Fraser University*
jrkrentz@sfu.ca

We used a flicker task to examine how change detection is affected by manipulation of object shapes and textured pattern fills within objects. Changes took longer to detect when the locations of original shapes were swapped than when they were replaced by two different shapes. Changes also took longer to detect when the locations of original pattern fills were swapped than when they were replaced by two different pattern fills.

8 Change Detection and Transposition of Object Colours

Carissa M. Stocco, Qiwan Shi, Ryan T. deKergommeaux, Cynthia N. McDowell, & Richard D. Wright, *Simon Fraser University*
cstocco@sfu.ca

We used a flicker task to examine how change detection is affected by manipulation of object colours. Changes took longer to detect when the locations of original colours were swapped than when they were replaced by two different colours. Changes also took longer when the locations of original colours were swapped than when their locations were both swapped and their orientation also changed.

9 With faces in mind: Examining the role of selective attention and mind wandering during a visual task

Avarna Fernandes, Cynthia Lu, Jennifer Yip, & Todd C. Handy, *University of British Columbia*
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Previous research demonstrates that individuals attenuate low probability sensory stimuli when mind wandering compared to when on-task, and individuals selectively attend to distinctive faces. This study examines whether these findings are demonstrated in distinct faces obscured by static, with the mediating effect of mind wandering. We expect participants' accuracy to identify distinct faces (opposite sex) to be better than non-distinct faces (same sex), and better when on-task than mind wandering.

10 Attention capture by faces and trains: Evidence from eye tracking and behavioural data

Troy Q. Boucher, Nichole E. Scheerer, Elina Birmingham, Grace Iarocci, *Simon Fraser University*
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Human faces are prioritized during visual search, but the underlying mechanism driving this preference remains unclear. In this study, participants performed a visual search task in the presence of both face and train distractors to determine whether these two classes of stimuli differentially affect visual attention. Reaction time and eye tracking data were collected in upright and inverted conditions to explore the properties of stimuli that lead to attention prioritization.

11 Holistic gist: The speed of holistic face processing

Michaela Trites, Elizabeth Gregory, Jocelyn Chalmers, Buyun Xu, & Jim Tanaka,
University of Victoria
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There is evidence that faces are processed holistically, but it is unclear how holistic face gist is encoded. Experiment 1 used part and whole conditions to test facial recognition for 17-500ms. Whole faces were better recognized (Part/whole effect). Experiment 2 added inverted conditions. Inverted recognition was significantly worse than the upright condition and showed no parts/whole effect. Results show face gist can be encoded in as little as 17ms.

12 Holistic gist ORE: The speed of holistic face processing advantage for own-race faces

Xiaoyi Liu, James Tanaka, & Buyun Xu, *University of Victoria*
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To investigate the gist holistic processing advantage towards own-race faces, the present study flashed Caucasian and Chinese faces for either 17, 50 or 250 ms using the parts/wholes paradigm. We found that whole face advantage was significant for both Caucasian and Chinese participants. Although the Caucasian participants showed an overall Other Race Effect, Chinese exhibited an opposite one. These results suggest that holistic gist occurs independent of participants' race-specific experience.

13 Early bird vs. night owl: Using EEG to measure your attention fluctuations throughout the day

Lena Walther, Chad Williams & Olav Krigolson, *University of Victoria*
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Attention is known to play a critical role in carrying out activities of daily living as well as higher order thinking. Despite this, there are still many questions surrounding daily fluctuations in attention. The goal of the present study was to determine whether students from the University of Victoria were most attentive during early, middle or late day by measuring the P300 ERP component using the Muse portable EEG device.

14 Analysis of a Multi-task domain characterized by fluctuating task complexity levels & its effects on ocular-motor measures related to higher level learning

Joseph J. Thompson, Mark R. Blair, Scott Harrison, & Robin C. A. Barrett, *Simon Fraser University*
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Among the attention literature, conflicting narratives exist on what oculomotor behaviours – specifically, the duration of fixations – ought to be expected as task-complexity increases. Using naturalistic telemetry data extracted from StarCraft 2 replay files, we examine this issue within the context of a dynamic task setting in which complexity increases over the course of each game. We also examine how these changes differ based on a participant's level of expertise.

15 Efficiency of Pop-Out Visual Search: Explaining a Discrepancy

Taylor Cork, *Simon Fraser University*, Hayley E. P. Lagroix, *University of Toronto & Simon Fraser University*, Vincent Di Lollo, *Simon Fraser University*, & Thomas M. Spalek, *Simon Fraser University*
 tcork@sfu.ca

A discrepancy exists in the literature regarding whether pop-out visual search is performed efficiently irrespective of whether it is done in isolation, or as part of a dual-task (Lagroix et al., 2015; Di Lollo et al., 2001). The present work showed that blocking versus mixing of set sizes across trials plays a critical role by encouraging participants to adopt different search strategies which interact differently with an attention-demanding first task.

16 The Effect of Positive and Negative Self-Talk on Cognitive Performance

Abdulrahman Alharbi & Professor Farhad Dastur, *Kwantlen Polytechnic University*
 abdulrahman.alharbi2@email.kpu.ca

Research consistently documents that self-talk has an effect on performance. However, the outcome each type of self-talk has on performance is unclear. The present study examines the effects of self-talk on cognitive performance using the online Tower of Hanoi task on 74 participants. We predicted positive self-talk would result in better cognitive performance and negative self-talk would result in worse cognitive performance. Nonetheless, the present findings indicate no significant results.

Paper Session III: Social Cognition & Motor Control (4:00 – 5:00)
Behavioural responses and eye movements reveal Theory-of-Mind errors in adults

Angela Giesbrecht, *Kwantlen Polytechnic University*, Daniel Derksen, *Simon Fraser University*, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
 angela.giesbrecht95@gmail.com

Adults can understand others' mental states (Theory of Mind, ToM), but their private knowledge can hinder this ability. Participants indicated where characters in stories would search for an object, as well as the object's location. Eye-tracking recorded where participants looked. When characters held a false belief about an object's location, participants made ToM errors. Participants also looked longer at incorrect response locations. The study suggests that adults make ToM errors.

Fluency Misattribution Drives Auditory Hindsight Bias for Non-words

Megan E. Giroux, *Simon Fraser University*, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
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In a priming phase, non-words played 0, 1, 3, or 6 times. At test, participants heard distorted non-words only or clear non-words followed by distorted versions of those words. Participants estimated that more peers could identify distorted non-words if participants heard clear non-words at test and if primed more frequently with non-words. We conclude that (1) auditory hindsight bias occurs for non-words; and (2) fluency drives auditory hindsight bias.

Hindsight Bias for Positive Emotions Depends on Emotional Distinctiveness

Michelle C. Hunsche, *Kwantlen Polytechnic University*, Megan E. Giroux, *Simon Fraser University*, Ragav Kumar, *University of Victoria*, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
michelle.hunsche@kpu.ca

We examined hindsight bias (HB)—relying on outcome knowledge when making judgments about previous beliefs—for emotional faces. We tested whether HB occurs for 5 different emotions (happiness, fear, disgust, surprise, anger), and whether distinctiveness influences this effect. We found HB for negative emotions. HB for positive emotions was evident in nondistinctive trials (happy faces displayed amongst positive/neutral faces), but not in distinctive trials (happy faces displayed amongst negative faces).

Motor intention and action plan switching: How is an action selected?

Duo Wang, Daniel Bub, & Michael Masson, *University of Victoria*
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To carry out a motor intention (e.g. whether to use or lift an object) requires that we select one action plan from a set of alternative possibilities. We examine the cognitive processes underlying action selection in a task that requires switching from one action plan to a new action plan on the same or a different object. Clear evidence indicates that action selection entails the inhibition of competing affordances.

Keynote Address**From Milliseconds to Decades: The Creation and Retrieval of Holistic Face Memories**

Dr. James W. Tanaka
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All human faces are created equal. We all share the same face parts (two eyes, a nose, and a mouth) arranged in a similar spatial configuration. Despite the perceptual similarity of faces, we are able to recognize the face of a friend, significant other, or colleague in a blink of an eye. How is this impressive feat of visual recognition accomplished? Faces, unlike most objects, are encoded and retrieved as holistic memories. In my talk, I will discuss what a holistic face memory is. I will examine recent work in our lab suggesting that holistic face representations are formed in milliseconds and produce memories that could last a lifetime. This research has implications for understanding how experience shapes the recognition of own- and other-race faces and how breakdowns in face recognition occur in autism and prosopagnosia.

SATURDAY, MAY 12TH, 2018

Poster Session II: Perception (9:00 – 10:30)

1 Crime Blindness and Eyewitness Suggestibility: The Role of Attention Focus in the Adoption of Misinformation

Soha Pourpirali, Dayna Guzman, Rochelle A. Robinson, Aneesa Shaikh, Nathaniel Strong,
& Ira E. Hyman, Jr., *Western Washington University*
pourpis2@wwu.edu

Eyewitnesses are frequently not watching for a crime when it occurs. In this study, we asked participants to watch a complex theft video in one of three attention conditions. Some participants watched for a crime, some focused on an unrelated task, and others watched with no attention focus. We looked at how attention focus affected awareness of the crime and the adoption of misinformation presented in a post-event narrative.

2 Have you seen this film detail before? Accuracy feedback boosts remembering.

Taylor Blanchette, & Glen Bodner, *University of Calgary*
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We examined how accuracy feedback influences recognition judgments for a rich encoding event. After viewing a film excerpt depicting a crime, participants assigned remember/know judgments to details that were normatively easy, medium, or hard to recognize. After each judgment, some participants received accuracy feedback. Feedback increased remember reports for the easy details. This effect disappeared when only the easy details were tested, suggesting test context modulates feedback effects on recognition.

3 Mobile EEG Objectifies Cognitive Fatigue Effects on Attentional Resource Allocation

Robert McDermit & Olav Krigolson, *University of Victoria*
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Objectifying cognitive fatigue is vital in preventing dangerous decision-making. Here, a mobile electroencephalogram system indexed studying-induced cognitive fatigue effects on the P300, an event related potential indexing attentional resource allocation. Study duration was inversely correlated with compensatory resource allocation (i.e., change in P300 amplitude); a fatigue model considering investment-reward balance explained additional variance. A model considering investment-reward balance and P300 changes predicted effects on subsequent decision-making more effectively than self-predictions.

4 Neural Representations of Risk and Ambiguity

Mitchel Kappen, Cameron D. Hassall, & Olav E. Krigolson, *University of Victoria*
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Every day we make decisions, which often feature some financial aspect. As all potential outcomes are rarely known, we constantly take different levels of risk and ambiguity into account. This study looks at these factors from a neuroeconomics view by using the wheel task with different monetary outcomes. The electroencephalography (EEG) data indicates that varying levels of risk and ambiguity are differently represented in the brain.

5 Music's Effect on Emotion

Connor J. Mitchell, Devinder Khera, Gurjot Chhina, & Jacob Nolan, *Kwantlen Polytechnic University*
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We investigated the effects of music mode and tempo on emotion (valence/arousal). We predicted that major mode increases valence, minor mode decreases valence, fast tempo increases arousal, and slow tempo decreases arousal. Participants rated images on valence and arousal, listened to music with a specific mode and tempo, then re-rated the images. We found that major mode increased arousal. However, our other predictions and prior research were unsupported.

6 Performance and Variability Measures in Driving Research

Jack Zhou, Taylor Cork, Bertrand Sager, & Thomas M. Spalek, *Simon Fraser University*
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Assessing driving behaviour requires objective quantitative measurement. It is often the case that studies interested in driving performance measure only a few variables such as standard deviation of lane position, frequency of steering reversals, or average headway. Here we describe and compare several of those variability measures before discussing them in terms of their real-world relevance.

7 The Easy-to-Hard Advantage with Melanoma Detection Training Using the Perceptual Expertise Approach

Kelly E. Grannon, Shikha Khurana, Faye Lee, Buyun Xu, & James Tanaka, *University of Victoria*
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Current rule-based training in melanoma detection is ineffective (Ashby & O'Brien, 2005). We explored whether the easy-to-hard approach improves melanoma detection training. Skin lesions consisted of easy, intermediate, and hard items based on Ease value. In training, participants categorized skin images as benign or melanoma. During easy-to-hard (hard-to-easy) training, participants categorized easy (hard) items, medium items, and hard (easy) items. All participants improved equally, indicating that both training policies were effective.

8 Implicit Strategies for Diabetic Retinopathy Classification: Similarity & Perceptual Space

Mikaela S. Chia, Cameron D. Hassall, Clay B. Holroyd, Bruce Wright, & Olav E. Krigolson, *University of Victoria*
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Implicit approaches to medical diagnosis have proven very effective. However, the application of such strategies for diabetic retinopathy (DR) diagnosis, a condition with complex, unparameterized stimuli, remains unknown. Here, we examine the efficacy of similarity-based judgment classification for diabetic retinopathy and map DR stimuli within perceptual space. Participant accuracy suggested that implicit training can be effective in diagnostic training. Additionally, our mapping provides a basis for future task optimization.

9 Bilingualism and Lifespan Cognition

Kirandeep K. Dogra, Eric Y. Mah, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
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Bilingualism is increasingly common in Canada. Prior research on the cognitive benefits of bilingualism consistently reveals numerous cognitive advantages. We investigated bilingualism and cognition (hindsight bias, theory of mind, verbal intelligence, working memory and inhibitory control) in 433 individuals ages 2-89. Controlling for age, bilingualism was associated with lower scores on an English-language verbal intelligence task, but we found no overall evidence of a cognitive advantage for bilinguals.

10 Factors Influencing Intrusiveness in Autobiographical Memories

Heather Tower, Madison Johnson, Hanna Webster, & Ira Hyman, *Western Washington University*
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Have you ever laid awake thinking of embarrassing memories? We studied factors that may cause memories to feel intrusive. Feelings of intrusiveness may be caused by either traumatic memories or by specific features of a memory when re-experienced. We found that autobiographical memories felt more intrusive when repeated, associated with negative emotions, and retrieved without voluntary control. These findings help us understand factors that transform involuntary into intrusive memories.

11 How do eye movements affect the qualitative aspects of a memory?

Erin L. Maxwell & Glen E. Bodner, *University of Calgary*
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Making eye movements while holding an unpleasant memory in mind can decrease its vividness and emotionality. We examined the influence of eye movements on 10 qualitative dimensions of memories using the Memory Experiences Questionnaire. Our main finding was that eye movements shifted visual perspective away from a first-person perspective. This finding has implications for using EMDR therapy for treating distressing memories in patients with anxiety disorders.

12 The Impact of Overall Scene Colour and Orientation on Change Detection

Laurissa Wilson, Qiwan Shi, & Richard D. Wright, *Simon Fraser University*
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The flicker-task was used to investigate how manipulation of scene orientation (upright images vs. inverted images) and colour (monochromatic vs. full-colour) impacts change detection. When images were inverted, response time was significantly longer with monochromatic images than with full-colour images. These results indicate that inversion may increase reliance on physical properties, such as colour, to assist in visual search.

13 The Mind's Eye: Switching Memory Perspective when Recalling Biased Behavior

Tess Schorn, Ellen Carroll, Alex Czopp, & Ira Hyman, *Western Washington University*
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Memories recalled from a third-person perspective are more likely to elicit feelings of perceived change between the past and current self, as compared to memories recalled in the first person. Recalling a biased memory from the third-person may serve to psychologically distance the individual from the memory, allowing them to maintain a self-perception of egalitarianism. This study examines the switching in perspective due to the type of memory recalled.

Paper Session IV: Decision Making (10:45 – 11:45)
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The Risks of Measuring Risk-Taking: Can Behavioural Measures of Risk-Taking Predict Binge Drinking in Undergraduate Students?

Carolyn Helps, Cassandra Turner, & Brianna Turner, *University of Victoria*
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Behavioural risk-taking measures (e.g. gambling tasks) are frequently used to make inferences about the cognitive processes behind risky behaviours such as binge drinking. We will examine the construct validity of three measures; the Door Opening Task (reward dominance), the Risky Gains Task (risk-seeking), and the DOSPERT questionnaire (self-reported risk preferences). Regression analyses will be used to determine if these cognitive measures of risk-taking can predict prospective binge-drinking in young adults.

Triples! Optimization of retinopathy diagnosis through triplet embedding

Cameron Hassall, Mikaela Chia, Bruce Wright, & Olav Krigolson, *University of Victoria*
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Diabetic retinopathy is currently diagnosed via the examination of retinal photographs, a difficult and error-prone process. Here we sought to improve this process by having participants make similarity judgments about retinal images, generating data triplets of the form “A is more similar to B than C”. Embedding the triplets in perceptual space allowed for the development of a decision-making model, leading to task optimization and resulting in enhanced diagnostic performance.

Midfrontal Theta: Real World Applications in Medical Education

Jordan Middleton, C. Williams, *University of Victoria*, B. Wright, *University of British Columbia*,
 & O. E. Krigolson, *University of Victoria*
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Decision making is believed to draw on dual processes. System 1 is characterized by fast decisions with reduced accuracy, whereas System 2 is slower, but more accurate. System 2 utilization has been proposed to be correlated with mid-frontal theta as measured by electroencephalography. Using a complex medical diagnostic task, this study suggests a link between Dual Process Theory and mid-frontal theta.

Poster Session III (11:45 – 1:15)

1 Bridging the gap between learning and fun: Relationship between video game use and self-regulated learning

Shih-Chieh Chen & Jocelyn Lymburner, *Kwantlen Polytechnic University*
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Self-regulated learning (SRL) is when students proactively optimize their learning. Ingrained within this process is metacognition, the knowledge, control, and regulation of cognition. A high level of metacognition helps students pick the best studying strategy, monitor their study progress, and adjust their plans accordingly. Video games may have the potential to improve metacognition. The study examines the relationship between video games and metacognition.

2 Neural Learning Signals Reflect Task Performance in a Medical Context

Mathew Hammerstrom, Chad C. Williams, Thomas D. Ferguson, Francisco L. Colino, Bruce Wright, & Olav E. Krigolson, *University of Victoria*
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It is important to assess neural learning systems when humans both succeed and fail at learning. In the current study, participants learned to diagnose diseases through reinforcement learning principles and were classified as learners or non-learners depending on task completion. Results demonstrated that the learners' accuracy improved whereas the non-learners' accuracy did not. Correspondingly, there was a change in neural learning signals in learners but not non-learners.

3 The Effect of Feedback Frequency on the P300 for Motor Learning

Georgia Powell, M. Kappen, T. Berman, F. L. Colino, & O. E. Krigolson, *University of Victoria*
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As feedback is essential for learning, the ideal amount is imperative for efficient motor learning. In the current study, a simple task was completed by estimating the length of one second following an auditory stimulus. Participants performed three different conditions in which feedback varied. The EEG data suggests the P300 effect is greatest when feedback was offered every other time, proposing this feedback sequence is optimal for motor learning.

4 Time on feedback during learning

Katerina Dolguikh, Jordan I. Barnes, *Simon Fraser University*, Caitlyn McColeman, *Northwestern University*, Yue Chen, Natasha Boorman, & Mark R. Blair, *Simon Fraser University*
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While feedback is clearly crucial for learning, most computational models of category learning say nothing about the cognitive processes involved in processing this information. How people process feedback information makes a difference to how they learn. We present a category learning experiment that manipulated the duration of feedback on each trial: 1 second vs. 9 seconds, and the category structure difficulty. These manipulations influence aspects of both learning and attention.

5 Auditory Feedback Control of Speech in Children with and without ASD

Nichole E Scheerer, *Simon Fraser University*, Dr. Jeffery Jones, *Wilfrid Laurier University*, & Dr. Grace Iarocci, *Simon Fraser University*
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As children develop, speech becomes the dominant form of social communication. Social aspects of speech production, such as prosody (e.g., vocal pitch), must be carefully regulated to accurately express information about the emotionality, excitability, and intent of the speaker. This research explored how auditory information is used to regulate the prosodic aspects of speech in children with and without ASD, and how this might relate to social competency.

6 Predictors of University Students' Knowledge of Autism Spectrum Disorder

Ariel Cheung, *Simon Fraser University*, Emily Gardiner, *University of British Columbia & BC Children's Hospital Research Institute*, & Grace Iarocci, *Simon Fraser University*
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Difficulties with social integration are among the many challenges students with Autism Spectrum Disorder encounter in university. Knowledge of ASD is linked to greater acceptance of these individuals among typically developing students. This study investigated the factors that influence university students' ASD knowledge (N = 201). Participants' own level of autism traits and their past contact with someone with autism were found to be important indicators of their knowledge.

7 Perception of social interactions: How affect traits and visual attention influence theory of mind.

Kristen Zeller, *Kwantlen Polytechnic University*, Kevin Smith, *University of Ottawa*, Jaime Christiaanse, & Daniel M. Bernstein, *Kwantlen Polytechnic University*
Kristen.emily.zeller@gmail.com

Theory of Mind (ToM) deficits are suggested in both anxiety and depressive disorders. Utilizing the BDI-II, STAI, Reading the Mind in the Eyes, and the Movie for the Assessment of Social Cognition (MASC), we investigated how these conditions influence this integral social process. Additionally, we analyzed gaze fixations utilizing eye tracking software for bias towards negative, neutral or positive facial expressions during the MASC.

8 Relationship between mind wandering and schizotypy

Cynthia Lu, Avarna Fernandes, Jennifer Yip, MA, & Todd Handy, PhD,
University of British Columbia
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Research has suggested that people are less sensitive in detecting sensory stimuli during mindwandering (MW) states. Schizotypy involves internally focusing on imaginative states, which may be similar to MW. We aim to determine how schizotypy may be associated with MW. Participants were asked whether they saw a face in static images presented and whether they were MW. We expect associations between schizotypy and MW, and between schizotypy and sensory sensitivity.

9 Electrophysiology of emotional reactivity and response inhibition in children and adolescents with attention-deficit/hyperactive disorder

Susanna Piasecki, Robert Ley, Killian Kleffner, Urs Ribary, & Mario Liotti, *Simon Fraser University*
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The novel emotional stop-signal (EMOSS) task was used to investigate emotional reactivity to Go stimuli and inhibitory control to No-go stimuli within different performance feedback contexts (fair versus unfair penalties). Behavioural and neurophysiological measures were used to determine whether there is a relationship between the inhibition and emotional dysfunctions that are characteristic of ADHD. ERPs of interest were the N2, P100, and the fERN.

10 Exercise habits and the impact on cognitive function: A MUSE study

Emily Jackson, Wande Abimbola, & O. E. Krigolson, *University of Victoria*
emilybajackson@gmail.com

The current study measured the gain in cognitive function that is elicited by regular physical activity. Wearing the MUSE portable EEG system, participants performed a passive oddball task on a handheld electronic device to elicit the P300 ERP waveform. This was used as a comparative measure of cognitive function. Latency and amplitude of ERPs were compared between participants classified as either high or low frequency exercisers.

11 Effects of Pain and Monetary Loss on Frontal Midline Theta Activation: A Pilot Study

Cora-Lynn Bell, Sepideh Heydari, & Clay Holroyd, *University of Victoria*
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Research has implicated anterior cingulate cortex (ACC) as a key neural structure in cognitive control. Most cognitive control studies to date have focused on monetary loss as an effortful cost, but have failed to focus on alternative aversive stimuli such as pain. In the current pilot study, I compared the neural activation of the frontal midline theta oscillation, source-localized to ACC, during both a monetary loss and painful shock condition.

12 Using a Pair of Glasses to See Your Brainwaves

Greg Gagliardi, Chad C. Williams, Wande Abimbola, & Olav E. Krigolson, *University of Victoria*
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Wearable technology is rapidly advancing our ability to monitor brain activity in real-time in ecologically valid environments. Here, we demonstrate that we can accurately measure event-related brain potentials with MUSE EEG enabled sunglasses. We had participants complete an oddball task while recording EEG on an iPad streamed via Bluetooth. Our results clearly show a P300 ERP component demonstrating the viability of this technology for psychology and neuroscience research.

13 Near or mere exposure: Conceptual/perceptual fluency and the mere exposure effect

Natasha Pestonji-Dixon, George Molina & Dr. Peter Graf
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Findings such as the mere exposure effect (MEE) support fluency theory, which posits that previous exposure increases the fluency with which a stimulus can be processed. This increased processing fluency results in more positive affect, and higher liking ratings. To determine whether conceptual or perceptual fluency drives the MEE, our participants were subliminally pre-exposed to category members of target neutral/negative images they later rated for attractiveness/repulsiveness.

14 Planning can lead to False Memory

Aaron Kong, Zach I. Hamzagic, *Kwantlen Polytechnic University*, Michael J. Silverstein, Anna-Lisa Cohen, *Yeshiva University*, Daniel M. Bernstein, *Kwantlen Polytechnic University*, Daniel G. Derksen, *Simon Fraser University* & D. Stephen Lindsay, *University of Victoria*
 Aaron.Kong@email.kpu.ca

Planning to perform an action may increase susceptibility to later false memory. During a game, participants planned to, but did not, say certain words. A day later, participants rated memory clarity for saying certain words. We found higher clarity for planned, but unsaid, words versus unplanned and unsaid words. Thus, planning can lead to false memory.

Paper Session V: Perception & Attention (1:15 – 2:15)
Putting the Learning Back into Neural Learning Systems

Chad C. Williams, Thomas D. Ferguson, Mathew Hammerstrom, Francisco L. Colino, Bruce Wright, & Olav Krigolson, *University of Victoria*
 ccwillia@uvic.ca

Neuroimaging research has brought to light a neural system that underlies how humans learn. Most often these studies incorporate methodology in which participants perceive non-learnable tasks to be learnable. Here, we present a series of neuroimaging experiments with learnable tasks that demonstrate how this system changes across learning, how this persists across simulated and real-world contexts, and how quickly this occurs.

Examining perception of personally familiar faces using fast periodic visual stimulation

Alison Campbell & James W. Tanaka, *University of Victoria*
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It is well established that familiar faces are processed more efficiently than unfamiliar faces. We measured effects of familiarization on neural response by recording electroencephalography signals while participants passively viewed a sequence of unfamiliar faces with familiar faces inserted at a fixed frequency (0.86Hz). Responses at the exact frequency of familiar faces were stronger than those for unfamiliar faces and in regions beyond the core occipitotemporal face processing areas.

More attention, greater control: Acute and chronic stress correlate with differences in alpha and theta oscillations

Thomas D. Ferguson, Chad C. Williams, Francisco L. Colino, Bruce Wright, & Olav E. Krigolson, *University of Victoria*
 tomferg@uvic.ca

Both chronic and acute stress affect a variety of cognitive processes. As the understanding of these effects continues to be refined, a promising avenue of investigation is using electroencephalography (EEG). In a decision making task, we found that cognitive control and attentional processes (as measured by EEG) correlate with changes in chronic and acute stress levels. These results provide further insight into how stress affects cognition.

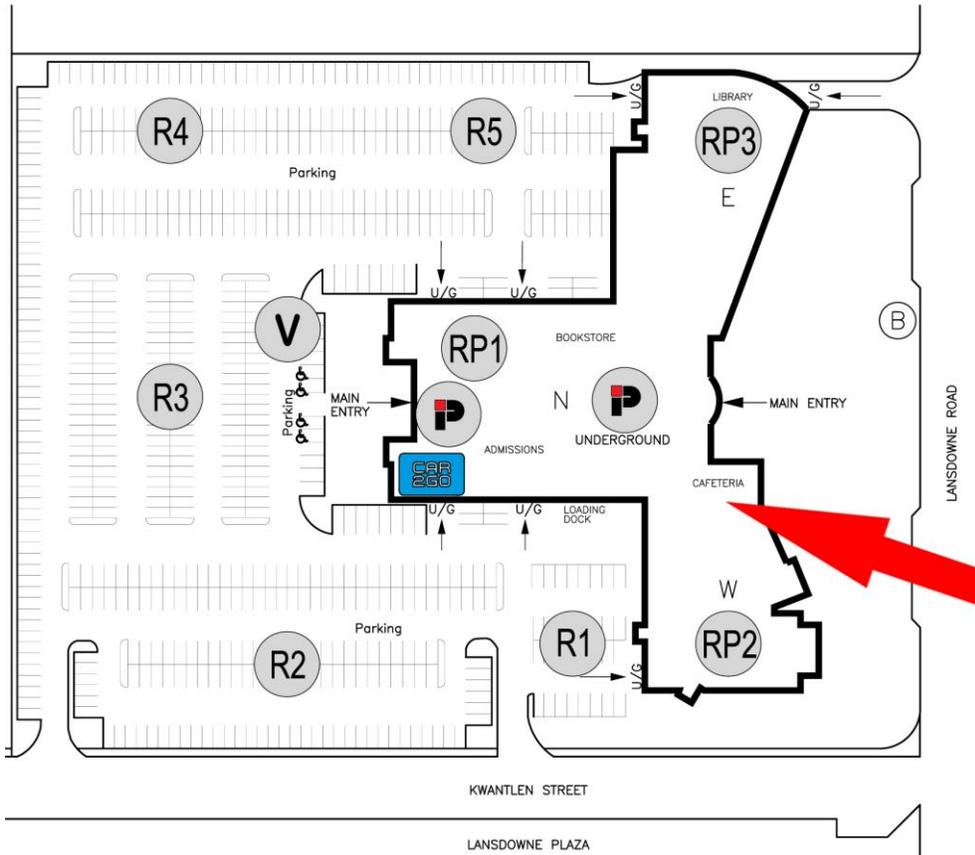
Is coffee the remedy for boredom?

Quentin Raffaelli, *University of Arizona*, Allison Drody, *University of British Columbia*, Eric Dos Santos, *University of British Columbia*, Caitlin Mills, *University of British Columbia*, Jessica Andrews-Hanna, *University of Arizona*, & Kalina Christoff, *University of British Columbia*
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Our previous research suggests that individuals' subjective experience of boredom on a task is related to their self-reported difficulty to sustain attention on said task. Interestingly, counter to predictions based on the vigilance decrement, subjects' feelings of boredom decreased when repeating a dull task if provided the opportunity to ignore it. In this follow-up, we explored this apparent contradiction by manipulating participants' ability to sustain attention with caffeine.

CONFERENCE VENUE MAP

Kwantlen Polytechnic University
8771 Lansdowne Road
Richmond, BC, V6X 3X7

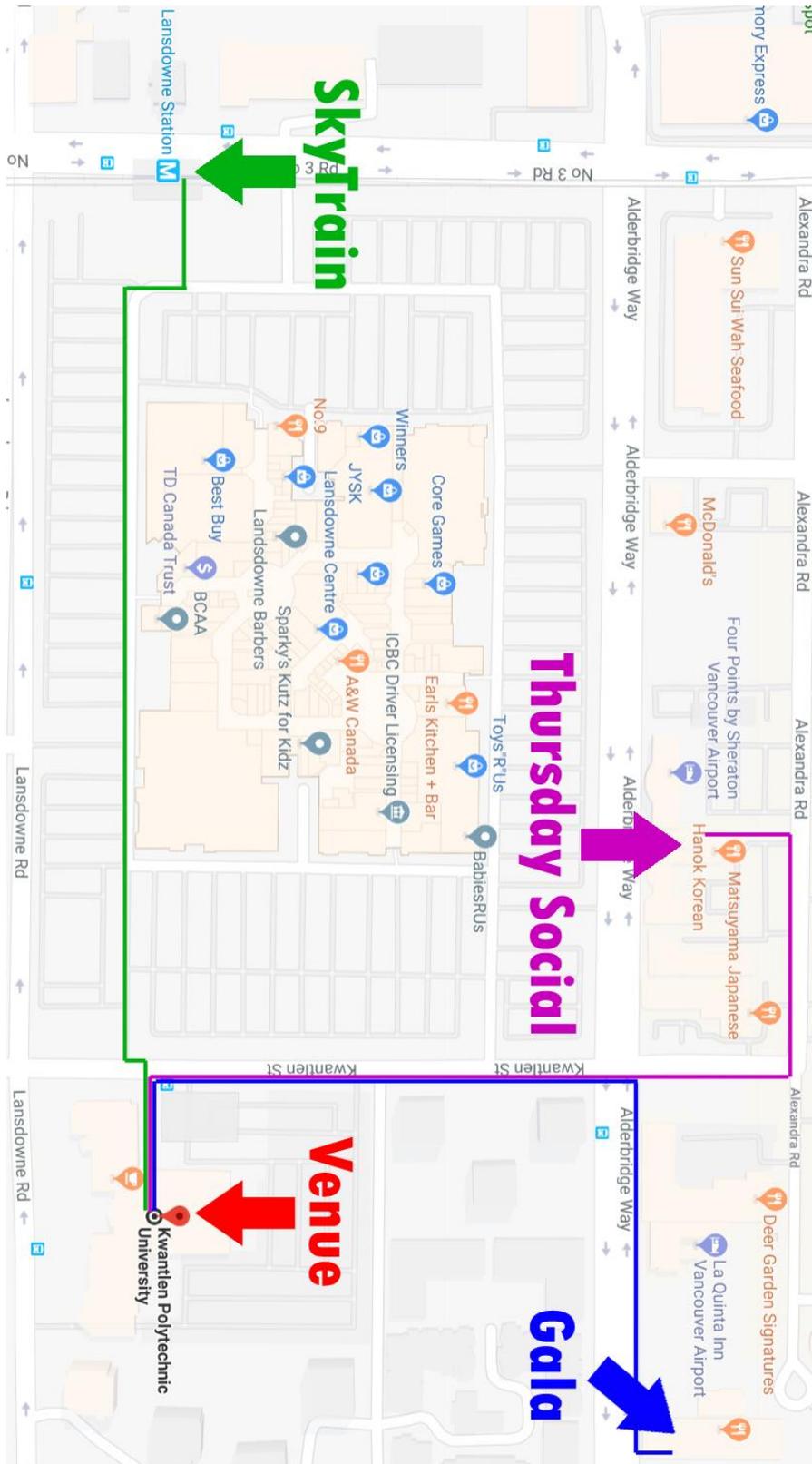


LEGEND

- R1-5 PARKING ZONES
- V VISITOR PARKING
- P PAY STATIONS
- CAR 266 CAR SHARE PARKING
- B BUS STOP

Conference:
2nd Floor
The Melville Centre for Dialogue
Room 2550

MAP & DIRECTIONS



LOCAL FOOD OPTIONS

Lansdowne Food Court – 5300 No. 3 Road (in Lansdowne Mall; near Toys R Us)

- Travel time: 7 mins walk, 3 mins drive

Fair Bee Coffee & Tea – 5300 No. 3 Road (in Lansdowne Mall; near Toys R Us)

- Travel time: 6 mins walk, 3 mins drive
- Speciality: Bubble Tea

Icy Bar – #115 4940 No 3 Road

- Travel Time: 11 mins walk; 4 mins drive
- Speciality: Taiwanese cold dessert

Snowy Village Dessert Café – 8571 Alexandra Rd

- Travel time: 6 mins walk; 3 mins drive

Banzai Sushi House - 8251 Westminster Hwy

- Travel time: 12 mins walk; 2 mins drive

Gmen Ramen Shop - Unit 1160 - 8391 Alexandra Rd

- Travel time: 5 mins; 2 mins
- Japanese Ramen and Izakaya plates

SETO Japanese Restaurant - #155 8460 Alexandra Rd

- Travel time: 7 mins walk; 1 min drive
- Sushi

Earls Kitchen and Bar – Lansdown Mall (N side)

- Travel time: 7 mins walk, 2 min drive
- Canadian, Cocktail Bar

No. 9 Restaurant – Lansdown Mall (E side)

- Travel time: 7 mins walk, 1 min drive
- Hong Kong Style, Chinese, Asian

Richmond Center – 6551 No 3 Road

- Travel time: 19 mins Skytrain (Brighthouse Station); 5 mins drive

Ebisu – 8111 Ackroyd Road

- Travel time: 12 mins walk; 2 mins drive
- Sushi

Hanok Korean Restaurant – 8400 Alexandra Road

- Travel time: 8 mins walk; 2 mins drive
- Korean food

Felicos Restaurant – 8140 Leslie Road

- Travel time: 13 mins walk; 2 mins drive
- Mediterranean cuisine

Shanghai River - 7831 Westminster Highway

- Travel time: 3 mins drive; 12 mins bus
- Chinese cuisine, noodles

Bánh Mì Très Bon - #1840-4720 McClelland Road

- Travel time: 9 mins walk; 2 mins drive
- Vietnamese café with coffee and sandwiches

AAA Restaurant - 8053 Alexandra Road

- 3 mins drive; 9 min walk
- Chinese soups (breakfast and brunch)

FIN