ARIANNE HERRERA-BENNETT

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EDUCATION

- **Ludwig-Maximilians-Universität (LMU) – Munich, Germany (2016 – expected date of completion Sept 2019)**
  PhD in Psychology in the Learning Sciences (REASON program): Quantitative Methods

- **University of British Columbia (UBC) – Vancouver, British Columbia (2015-2016)**
  Graduate-level coursework in Psychology: Cognitive Neuroscience

- **Ludwig-Maximilians-Universität (LMU) - Munich, Germany (2013-2015)**
  Master's in Psychology in the Learning Sciences: Quantitative Methods

- **University of Toronto (UofT, St-George) - Toronto, Ontario (2007-2012)**
  Honours Bachelor of Science (B.Sc. Hons): Psychology Specialist, Philosophy Minor, Math Minor

- **Toronto French School – Toronto, Ontario**
  Completed grade 12 Ontario Diploma (2007)
  International Baccalaureate Diploma (2007)
  National Brevet Diploma

LANGUAGES
- Fluent in English and French. Basic German classes (2000-2004).

COMPUTER SKILLS
- Microsoft Office, SPSS, SAS, AcqKnowledge, E-prime, Matlab, R, SPM8/12, Adobe Photoshop/Premiere, Flash MX, Quark Xpress

INTERESTS: I have vested interest in the area of meta-science and statistics, in particular relating to the reproducibility crisis and statistical reform movement. Some areas in meta-psychology that I've taken time to investigate include publication bias and inflated effect size estimates in meta-analyses, large-scale re-analyses aimed at understanding the concept of replicability, and *Registered Reports*. My past substantive research interests (which I continue to pursue) dealt with the area of affective psychology – the dynamic interplay between cognitive and emotional processes – and the physiological and neurocognitive underpinnings of such research.

CURRRENT PROJECTS / RESEARCH

- **Exploring indices of repeated k-fold cross-validation as predictors of study replicability**
  Registered Report (RR) *submitted to Meta-Psychology*
  in collaboration with Prof. Dr. Moritz Heene (LMU)

  Investigation of how resampling techniques (i.e. 5-repeated 10-fold cross-validation) might serve as an index of model generalizability: Namely, do indices of cross-validation (i.e. average R-squared, RMSE, MAE), as measures of how well a statistical analysis will theoretically hold in independent/unseen data, predict, or correlate positively with, likelihood of replicability (re-analysis of Camerer et al., 2018 replication project)?

- **COURSERA project: Improving statistical misconceptions among online learners**
  in collaboration with Dr. Daniël Lakens (TU Eindhoven)

  Study (Phase 1) investigated how rates of statistical misconceptions (*p*-values, confidence intervals, Bayes factors) can be improved through the use of online learning tools, namely via D. Lakens's 8-week MOOC *"Improving your statistical inferences"*. Phase 2 investigates the effectiveness of instructional tools (i.e. explicit module on clarifying *p*-value misconceptions) on improvement rates.

- **Publication bias in meta-analysis (Monte Carlo R simulation)**
  in collaboration with Prof. Dr. Moritz Heene (LMU)

  Continuation of Master's thesis work investigating i) the effect of QRP's and publication bias in meta-analyses (accuracy of effect size estimation), and ii) the statistical power of bias detection tests, i.e. Test for the Excess of Significance Findings (Ioannidis & Trikalinos, 2007) & the *P*-Curve method (Simonsohn et al., 2014).

- **Emotion-induced memory modulation: Bimodal effects of facial and vocal expressivity**
  Registered Replication Report (RRR) *submitted to Cognition and Emotion*
  in collaboration with Prof. Dr. Dirk Wildgruber (Tuebingen)

  Replication and extension of *crossmodal* (audiovisual) *integration* effect on accuracy and RT of emotion identification (specifically in relation to emotions of Anger, Happy, Neutral). Study aims to replicate main effects on central stimuli (face) processing, & explore potential effects on recall of peripheral content (voice).

PAST PROJECTS / RESEARCH

- **Experience-sampling study** in collaboration with Dr. Kalina Christoff (UBC) (April – Aug 2016)

  Real-time tracking of the frequency of spontaneous thought via iphone / android devices. Project served as pilot study to pinpoint potential trends during the day & predictors of proneness for mind-wandering vs. focused thought. Follow-up research *"Mind-wandering rates fluctuate across the day: Evidence from an experience-sampling study" (Smith, Mills, Paxton, Christoff, 2018) https://doi.org/10.1186/s41235-018-0141-4*

- **Emotional contagion work** in collaboration with Prof. Dr. Anne Frenzel (LMU) (May 2014 – May 2015)

  Compilation of research surrounding the phenomenon of emotional contagion, i.e. overview of theoretical conceptualizations & definitions, purported underlying mechanisms, and instruments of measure.

TEACHING

- **"Good Research & Open Science"** – Guest lecturer sessions
  (June 14, 2017; Apr 26, 2018; Nov 19, 2018)

  Guest lecturer (graduate seminar): Special issues class on good vs. questionable research practices, and current methodological concerns within psychology, as well as key concepts relating to falsifiability, argumentation schemes, the reproducibility crisis, and advancements in the realm of Open Science.

- **"Bayesian Workshop"** – Journal club (Sept 2017 – Aug 2018) **osf.io/hcm7p/wiki/home/**

  Informal 2-hr monthly meetings (open to any interested Master's & doctoral students, and faculty members). Workshop is aimed at gaining a grasp on the concepts of Bayesian analysis (no prior knowledge required). Workshop also hosted Bayesian experts Mark Andrews and Thom Baguley (24-26.09.2018) for a Guest Talk and 2-Day Bayesian Workshop at LMU offered to 30 individuals (Master's / doctoral / faculty).

- **"Project Seminar E"** – Cognition, Emotion, Learning & Development module (Apr 2017 – Mar 2018)

  Graduate seminar (2 semesters): Small collaborative project group (8 Master's students students) investigating the phenomenon of *crossmodal integration* & trade-off effects on emotion identification and recall. Culmination of pilot testing in seminar resulted in the submission of RRR to *Cognition and Emotion*.

- **"Educational and Psychological Assessment and Testing Part 2"** (Apr 2017 – July 2017)

  Graduate course (1 semester, 40 Master's students): Theoretical and practical understanding of scale construction, assessment, and validation. Concepts covered include classical test theory (CTT), item analysis, reliability & validity, exploratory factor analysis (EFA), as well as hands-on project-based online data collection and analysis.

- Statistics Tutor, Paid (UBC), British Columbia (Jan – April 2015)

  Undergraduate tutor for PSYC 218 course "Analysis of Behavioural Data": Material focused on core statistical concepts (e.g., sampling distributions, correlation, null hypothesis testing in independent and dependent samples, confidence intervals, and one-way ANOVA), as well as introduction to SPSS analysis.

LABORATORY EXPERIENCE

Neurocognitive Lab of Thought (Dr. Kalina Christoff, UBC)

Doctoral work (Sept 2015 – Aug 2016)
Project supervisor: Dr. Kalina Christoff

- Investigation of the *mind-wandering* and *spontaneous thought patterns*
- Experience-sampling / fMRI and behavioural data collection
- Theoretical work / research in relation to the *'default variability hypothesis'* as an adaptive mechanism promoting episodic memory efficiency and semantic knowledge optimization (co-author).

Achievement Emotion and Motivation Lab (Prof. Dr. Reinhard Pekrun, LMU)

Research Internship (Feb 2014 – July 2015)
Project supervisor: Dr. Philipp Spachtholz

- Investigation of the *Baker/baker effect* & semantic activation hypothesis
- EEG data collection: participant recruitment & running

ACLAB: Affect and Cognition Lab (Dr. Adam K. Anderson, UofT)

Paid Research Manager (Jan 2013 - Aug 2013) at the Centre for Biological Timing and Cognition (CBTC)
Project Supervisor: Dr. Hans Melo

- Project manager for ACLAB's *Positivity Project*
- Responsible for managing and overviewing project: training and delegating RAs; leading meetings; participant recruitment and booking; ethics protocol amendments & revisions
- Accountable for tracking and managing project finances
- Data collection: behavioural (computer-based), GSR, fMRI, saliva samples
- fMRI training (TCPS2 CORE certificate – Dec 28. 2012)

Volunteer Research Assistant (Sept 2011 - Dec 2012) at the CBTC
Project Supervisor: Dr. Assaf Kron

- Investigation of *the mere resource hypothesis* (Kron & colleagues)
- Responsible for participant recruitment & testing; recruiting & training volunteer RAs
- Experienced with E-prime task programming, psychophysiological instruments (HR, GSR, corrugator supercilii EMG), software (AcqKnowledge), and data collection & analysis (SAS)

Volunteer Research Assistant (Feb 2010)
Project Supervisor: Dr. Rebecca Todd

- Participant behavioural testing on computer *dwell-time task*
- Neuroimaging testing: EEG & ERP data collection

Volunteer Research Assistant (Nov – Dec 2009)
Project Supervisor: Dr. Rebecca Todd

- Participant behavioural testing on computer-based *visual-search task*
- Experienced with eye-tracking instrumentation, software, & data collection

Volunteer Research Assistant (July – Aug 2009) at the CBTC
Project Supervisor: Dr. Rebecca Todd

- Behavioural testing on computer-based *noise-estimation task* (Todd et al., 2012)
- Neuroimaging testing: EEG & ERP data collection

UPCOMING CONFERENCES

Herrera-Bennett, A. C.*, Lakens, D., Heene, M., & Ufer, S. (March 5th – 7th, 2018). *Improving statistical inferences: MOOC enhances conceptual understanding among online learners.* **Paper presentation** at AERA 2019 (international conference), Toronto, Canada.

Society for the Improvement of Psychological Science (SIPS 2019, international conference)
July 7th – July 9th, 2019 (Rotterdam, Netherlands)

PAST CONFERENCE ATTENDANCE

Society for the Improvement of Psychological Science (SIPS 2018, international conference)
June 24th – June 26th, 2018 (Grand Valley State University, Grand Rapids, MI, USA)

Bayesian Data Analysis in the Social Sciences Curriculum (ESRC international conference)
Sept. 29th, 2017 (Nottingham Trent University, Nottingham, UK)

Society for the Improvement of Psychological Science (SIPS 2017, international conference)
July 30th – Aug 1st, 2017 (Center for Open Science, Charlottesville, VA, USA)

PAST CONFERENCE PRESENTATIONS

Herrera-Bennett, A. C.*, Ong, C. W., & Heene, M. (Feb 18th – 20th, 2019). *Exploring indices of repeated k-fold cross-validation as predictors of study replicability.* **Poster presentation** at the REASON Winter School 2019 (international conference), TUM School of Education, Munich, Germany.

Herrera-Bennett, A. C.*, Heene, M., & Lakens, D. (March 11th – 14th, 2018). *P-distribution: Optimizing the inferential value of p-values via resampling techniques*. **Poster presentation** at the 60th Conference of Experimental Psychologists (TeaP 2018, international conference), Philipps-Universität, Marburg, Germany.

Herrera-Bennett, A. C.*, Lakens, D., Heene, M., & Ufer, S. (March 8th – 9th, 2018). *Active open online learning: A practical approach to improving statistical literacy among learners*. **Poster presentation** at the Learning through Inquiry in Higher Education: Current Research and Future Challenges (INHERE 2018, international conference), LMU, Munich, Germany.

Herrera-Bennett, A. C.*, Lakens, D., Heene, M., & Ufer, S. (March 5th – 7th, 2018). *Improving statistical inferences: Rates of p-value, confidence interval (CI), & Bayes factor (BF) misconceptions among learners.* **Poster presentation (*best poster award)** at the REASON Spring School 2018 (international conference), LMU, Munich, Germany.

Hasenbein, L. C.*, Herrera-Bennett, A. C. (March 11th – 14th, 2018). *Emotion-induced memory modulation: Bimodal integration and effects of inhibitory control*. **Poster presentation** at the 60th Conference of Experimental Psychologists (TeaP 2018, international conference), Philipps-Universität, Marburg, Germany.

Husagić, L.*, Herrera-Bennett, A. C. (March 11th – 14th, 2018). *Emotion-evoked central-peripheral trade-off effects: Sensory gating and recall*. **Poster presentation** at the 60th Conference of Experimental Psychologists (TeaP 2018, international conference), Philipps-Universität, Marburg, Germany.

Herrera-Bennett, A. C.*, Heene, M. (March 26th – 29th, 2017). *Publication Bias in Meta-Analysis*. **Individual talk** at the 59th Conference of Experimental Psychologists (TeaP 2017, international conference), TU Dresden, Dresden, Germany.

Stan, D.*, Herrera-Bennett, A. C., Christoff, K. (Nov. 12th – 16th, 2016). *Why does the mind move? Explaining the dynamics of mind-wandering through experience-sampling.* **Poster presentation** at the Society for Neuroscience's 26th annual meeting (SfN 2016, international conference), San Diego Convention Center, San Diego, USA.

Herrera-Bennett, A. C.*, Schwab C., Vollmer, V., Yagci, H., & Taxer, J. (March 8th – 11th, 2015). *Role of teacher emotion on student learning: Instructional value of affective feedback*. **Poster presentation** at the 57th Conference of Experimental Psychologists (TeaP 2015, international conference), Universität Hildesheim, Hildesheim, Germany.

PUBLICATIONS

Mills, C., Herrera-Bennett, A., Faber, M., & Christoff, K. (2018). Why the mind wanders: How spontaneous thought's default variability may support episodic efficiency and semantic optimization. *The Oxford Handbook of Spontaneous Thought: Mind-Wandering, Creativity, and Dreaming*, 11. doi: 10.1093/oxfordhb/9780190464745.013.42

Vervaeke, J., Ferrero, L., Herrera-Bennett, A. (2018). Flow as Spontaneous Thought: Insight and Implicit Learning. *The Oxford Handbook of Spontaneous Thought: Mind-Wandering, Creativity, and Dreaming.* doi: 10.1093/oxfordhb/9780190464745.013.8