

DOMINIQUE T. VUVAN

CURRENT POSITION

Assistant Professor of Cognitive Psychology

Department of Psychology, Skidmore College
August 2016-present

EDUCATION

2007-2012, Department of Psychology, University of Toronto

Ph.D. in Psychology, Collaborative Program in Neuroscience

Dissertation: "The Statistical Learning of Musical Expectancy"

Supervisor: Mark Schmuckler; Committee: Elizabeth Johnson and Claude Alain

2006-2007, Department of Psychology, University of Toronto

M.A. in Psychology, Collaborative Program in Neuroscience

Thesis: "Representations of the Tonal Hierarchy in Auditory Imagery"

Supervisor: Mark Schmuckler; Subsidiary Supervisor: Marlene Behrmann

2002-2006, Faculty of Arts and Science, University of Toronto

B.Sc. in Psychology and Physiology (Honours with High Distinction)

Honours Thesis: "The Effects of Phoneme on the Experience of Interval Size"

Supervisor: William Thompson

RESEARCH

2016-present, Department of Psychology, Skidmore College

MAClab Director

2012-2016, International Laboratory for Brain, Music, and Sound Research (BRAMS), Université de Montréal; Centre for Research on Brain, Language, and Music (CRBLM)

Postdoctoral Fellow

- Research projects include:
 - Meta-analysis of pitch discrimination in amusia
 - Neural substrates of pitch perception and production (EEG, MEG, fMRI, dMRI)
 - Perception of musical prodigy performance
 - Individual differences in singing perception
- Supervised research assistants, undergraduate thesis students, graduate students
- Statistics consultant for students and colleagues at BRAMS
- Supervisor: Isabelle Peretz

2006-2012, Music Cognition Lab, University of Toronto Scarborough

Graduate Student

- Behavioural studies of perceptual-cognitive processes in music
- Supervised undergraduate honours students and research assistants

- Supervisor: Mark Schmuckler

2007-2012, Rotman Research Institute, University of Toronto

Affiliated Graduate Student

- Cognitive-perceptual effects of audio game training
- Supervisor: Claude Alain

2009-2012, Social Ecology Lab, University of Toronto Scarborough

Affiliated Graduate Student

- Paralinguistic determinants of status attainment
- Supervisor: Marc Fournier

2004-2006, Music and Emotion Lab, University of Toronto Mississauga

Research Assistant/Independent Study Student

- Neuropsychological assessments, participant management, honours thesis research
- Supervisor: Bill Thompson

TEACHING

Department of Psychology, Skidmore College

2016-present, Course Instructor

- PS202: Research Methods 1
- PS218: Cognition
- PS336: Music Cognition

Student Research Supervision

- Rachel Goodkind (September 2016-August 2017)
 - PS375: Independent Research (Fall 2016)
 - Lab manager (Spring 2017)
- Ethan Simon (January 2017-present)
 - PS276: Exploratory Research Experience in Psychology (Spring 2017)
- Zoe Chodak (January 2017-present)
 - PS276: Exploratory Research Experience in Psychology (Spring 2017)
- Dilhan Sirtalan (January 2017-present)
 - NS275: Neuroscience Research (Spring 2017)
- Matthew O'Connor (January 2017-present)
 - CS275H: Computer Science Research (Spring 2017)
- Samantha Abrams (January-May 2017)
 - PS276: Exploratory Research Experience in Psychology (Spring 2017)

International Laboratory for Brain, Music, and Sound Research

Student Research Supervision

- Claudia Picard-Deland (May 2015-January 2016)
 - B.Sc. completed January 2016
- Pier-Yves Girard (September 2014-June 2016)
 - M.Sc. in progress: "Comparing the brain networks subserving pitch discrimination and pitch production"
- Pauline Tranchant (August 2013-June 2016)
 - Supervised August 2013-present
 - M.Sc. completed October 2013: "Identifying beat deaf individuals with a new battery"
 - Ph.D. in progress: "Investigating the neurocognitive underpinnings of beat deafness"
- Natalie Harvey (October 2012-August 2013)
 - B.Sc. completed November 2013

Department of Psychology, University of Toronto

2011-2012, Course Instructor

- Statistics I

2006-2012, Teaching Assistant

- Data Analysis in Psychology
- Advanced Data Analysis in Psychology
- Music Cognition
- Perception and Cognition
- Psychological Research Laboratory
- Scientific Communication in Psychology
- Software Carpentry: Scientific Computing for Researchers

Nominated for UTSc Teaching Assistant Award (2008-2009; 2010-2011)

Student Research Supervision

- Lillian Harber (September 2010-August 2011)
 - B.Sc. completed June 2014
- Jonathan Wilbiks (September 2007-August 2008)
 - B.Sc. with thesis completed June 2008

PUBLICATIONS AND PRESENTATIONS

Peer-Reviewed Publications

Comeau, G., **Vuvan, D.T.**, Picard-Deland, C., & Peretz, I. (2017). Can you tell a prodigy from a professional musician? *Music Perception*.

- Florin, E., **Vuvan, D.**, Peretz, I., & Baillet, S. (2017). Pre-target neural oscillations predict variability in the detection of small pitch changes. *PLoS ONE*, 12(5), e0177836. doi: 10.1371/journal.pone.0177836
- Peretz, I. & **Vuvan, D.T.** (2017) Prevalence of congenital amusia. *European Journal of Human Genetics*, 25, 625-630. doi:10.1038/ejhg.2017.15
- Vuvan, D.T.**, Paquette, S., Mignault Goulet, G., Royal, I., Felezeu, M., & Peretz, I. (2017). The Montreal protocol for identification of amusia. *Behavioral Research Methods*, 6, 526-537. doi:10.3758/s13428-017-0892-8
- Wilbiks, J.M.P., **Vuvan, D.T.**, Girard, P., Peretz, I., & Russo, F.A. (2016). Effect of singing training on musical perception and performance in a music lover with congenital amusia. *Neurocase*. doi: 10.1080/13554794.2016.1263339
- Tranchant, P., **Vuvan, D.T.**, Peretz, I. (2016). Keeping the beat: A large sample study of bouncing and clapping to music. *PLoS ONE*, 11(7), e0160178. doi: 10.1371/journal.pone.0160178
- Royal, I., **Vuvan, D.T.**, Zendel, B.R., Robitaille, N., Schönwiesner, M., & Peretz, I. (2016). Activation in the right inferior parietal lobule reflects the representation of musical structure beyond simple pitch discrimination. *PLoS ONE*, 11(5), e0155291. doi: 10.1371/journal.pone.0155291
- Prince, J.B., **Vuvan, D.T.**, Schmuckler, M.A., & Scott-Clark, T.T. (2015). Tonal priming is resistant to pitch height. *Attention, Perception, & Psychophysics*, 77(6), 2011-2020. doi: 10.3758/s13414-015-0904-7
- Vuvan, D.T.**, Nunes-Silva, M., & Peretz, I. (2015). Modularity of pitch processing in amusia: A meta-analysis. *Cortex*, 69, 186-200. doi: 10.1098/rstb.2014.0090
- Tranchant, P. & **Vuvan, D.T.** (2015). Current conceptual challenges in rhythm processing deficit research. *Frontiers in Neuroscience*. doi:10.3389/fnins.2015.00197
- Peretz, I., **Vuvan, D.T.**, Lagrois, M-E., & Armony, J. (2015). Neural overlap in processing music and speech. *Philosophical Transactions of the Royal Society B*, 370(1664). doi:10.1098/rstb.2014.0090
- Vuvan, D.T.**, Podolak, O.M., & Schmuckler, M.A. (2014). Memory for musical tones: The impact of tonality and the creation of false memories. *Frontiers in Psychology*. doi:10.3389/fpsyg.2014.00582
- Vuvan, D.T.** (2013). The statistical learning of musical expectancy. *Psychomusicology*, 23(4), 276-277.
- Vuvan, D.T.**, Prince, J.B., & Schmuckler, M.A. (2011). Probing the minor tonal hierarchy. *Music Perception*, 28(5), 461-472. doi: 10.1525/mp.2011.28.5.461
- Vuvan, D.T.**, & Schmuckler, M.A. (2011). Tonal hierarchy representations in auditory imagery. *Memory & Cognition*, 39(3), 477-490. doi: 10.3758/s13421-010-0032-5
- Vuvan, D.T.** & Schmuckler, M.A. (2010). The effect of tonal context in melodies on memory for single tones. *Proceedings of the 11th International Conference on Music Perception and Cognition*. Seattle, WA.

Russo, F.A., **Vuvan, D.**, & Thompson, W.F. (2006). Setting words to music: An empirical investigation concerning effects of phoneme on the experience of interval size. *Proceedings of the 9th International Conference on Music Perception and Cognition*. Bologna, Italy.

Submitted Articles

Vuvan, D.T., Zendel, B.R., & Peretz, I. (submitted). Random feedback makes listeners tone-deaf. *Scientific Reports*.

Book Chapters

Vuvan, D.T. & Peretz, I. (in press). Amusia. In J.S. Damico & M.J. Ball (Eds.), *The SAGE Encyclopedia of Human Communication Sciences and Disorders*, Thousand Oaks, CA: SAGE Publications.

Peretz, I., **Vuvan, D.T.**, Lagrois, M-E., & Armony, J. (in press). Neural overlap in processing music and speech. In H. Honing, C. ten Cate, I. Peretz, and S.E. Trehub (Eds.), *The Origins of Musicality*. Cambridge, MA: MIT Press.

Conference Presentations – Oral

Hughes, B. & **Vuvan, D.T.** (2017, August). *Different musical styles engender different harmonic expectancies*. Talk accepted for presentation at the meeting of the Society for Music Perception and Cognition, San Diego, CA.

Vuvan, D.T., Girard, P-Y., Hutchins, S., Houde, J-C., Descoteaux, M., & Peretz, I. (2015, August). *Dissociation between perception and action in amusia: Evidence from combined functional and diffusion imaging*. Talk presented at the meeting of the Society for Music Perception and Cognition, Nashville, TN.

Vuvan, D.T., Einarson, K.M., & Corrigall, K.A. (2013, August). *Good data practices and replicability in music perception and cognition*. Symposium presented at the meeting of the Society for Music Perception and Cognition, Toronto, ON.

Podolak, O.M., **Vuvan, D.T.**, & Schmuckler, M.A. (2013, August). *The influence of various tonal contexts on memory for single notes*. Talk presented at the meeting of the Society for Music Perception and Cognition, Toronto, ON.

Vuvan, D.T. & Schmuckler, M A. (2011, August). *Linking perception to cognition in the statistical learning of tonal hierarchies*. Talk presented at the meeting of the Society for Music Perception and Cognition, Rochester, NY.

Vuvan, D. & Alain, C. (2009, March). *Cognitive-perceptual effects of audio game training*. Talk presented at the 16th annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Conference Presentations – Posters

Goodkind, R.R., Sharda, M., & **Vuvan, D.T.** (2017, August). *Different musical styles engender different harmonic expectancies*. Poster accepted for presentation at the meeting of the Society for Music Perception and Cognition, San Diego, CA.

- Vuvan, D.T.**, Goodkind, R.R., & Sharda, M. (2017, June). *Individual differences in song perception: The role of lyrics vs. melody*. Poster accepted for presentation at The Neurosciences and Music VI, Boston, MA.
- Hughes, B. & **Vuvan, D.T.** (2017, June). *Different musical styles engender different harmonic expectancies*. Poster accepted for presentation at The Neurosciences and Music VI, Boston, MA.
- Samiee, S., Florin, E., Vuvan, D., Albouy, P., Peretz, I., & Baillet, S. (2016, October). *Inter-regional phase-amplitude coupling between inferior frontal gyrus and auditory cortex predicts near threshold pitch discrimination performance*. Poster accepted for presentation at the 20th International Conference on Biomagnetism, Seoul, Korea.
- Picard-Deland, C., **Vuvan, D.T.**, Comeau, G., & Peretz, I. (2015, October). *The musical prodigy: Putting the definition to the test*. Poster accepted for presentation at the 10th Anniversary Symposium of the International Laboratory for Brain, Music, and Sound Research, Montreal, QC.
- Girard, P-Y., **Vuvan, D.T.**, Hutchins, S., & Peretz, I. (2015, August). *Spatially separable activation of the right inferior frontal gyrus in the discrimination and production of pitch*. Poster presented at the meeting of the Society of Music Perception and Cognition, Nashville, TN.
- Vuvan, D.T.**, DiDomenico, S.I., & Fournier, M.A. (2015, May). *Social status and vocal expression: A social relations analysis*. Poster presented at the meeting of the Society for Interpersonal Theory and Research, Toronto, ON.
- Tranchant, P., **Vuvan, D.T.**, & Peretz, I. (2015, May). *Bouncing and clapping to music and metronome: A comparison between drummers, dancers, and non-musicians*. Poster presented at the Annual CBRLM Scientific Day, Montreal, QC.
- Vuvan, D.T.**, Zendel, B.R., & Peretz, I. (2014, June). *The simulation of amusia via confidence fools behaviour, not the brain*. Poster presented at the Annual Meeting of the Organization for Human Brain Mapping, Hamburg, Germany.
- Florin, E., **Vuvan, D.T.**, Peretz, I., & Baillet, S. (2014, June). *Oscillatory predictors for the detection of near-threshold auditory stimuli*. Poster presented at the Annual Meeting of the Organization for Human Brain Mapping, Hamburg, Germany.
- Vuvan, D.T.**, Nunes-Silva, M., & Peretz, I. (2014, May). *Modularity of pitch processing in amusia: A meta-analysis*. Poster presented at The Neurosciences and Music V, Dijon, France.
- Prince, J.B., **Vuvan, D.T.**, & Schmuckler, M.A. (2014, May). *Does pitch height affect tonal priming?* Poster presented at The Neurosciences and Music V, Dijon, France.
- Tranchant, P., **Vuvan, D.T.**, & Peretz, I. (2014, May). *Screening for beat synchronization deficits using bouncing and clapping movements*. Poster presented at The Neurosciences and Music V, Dijon, France.
- Zendel, B.R., **Vuvan, D.T.**, & Peretz, I. (2014, May). *Beyond pitch discrimination: Neural activity related to processing incongruous notes in a melody*. Poster presented at The Neurosciences and Music V, Dijon, France.
- Tranchant, P., **Vuvan, D.T.**, & Peretz, I. (2014, May). *Measuring human synchronization to a beat: Accelerometer versus camera-based motion capture*. Poster presented at the Annual Symposium of the Centre for Research on Brain, Language, and Music, Montreal, Canada.

- Vuvan, D.T.,** Zendel, B.R., & Peretz, I. (2013, August). *Using false feedback to test the confidence account of amusia*. Poster presented at the Meeting of the Society for Music Perception and Cognition, Toronto, ON.
- Vuvan, D.T.,** Di Domenico, S.I., & Fournier, M.A. (2011, May). *Verbal investment as a predictor of status attainment in small groups*. Poster presented at the 23rd Annual Convention of the Association for Psychological Science, Washington, DC.
- Vuvan, D.** & Schmuckler, M.A. (2010, August). *The effect of tonal context in melodies on memory for single tones*. Poster presented at the International Conference of Music Perception and Cognition, Seattle, WA.
- Vuvan, D.,** Prince, J.B., & Schmuckler, M.A. (2009, August). *Probing the minor tonal hierarchy*. Poster presented at the Meeting of the Society for Music Perception and Cognition, Indianapolis, IN.
- Vuvan, D.** & Schmuckler, M.A. (2007a, November). *Investigating psychological representations of the tonal hierarchy in imagined contexts*. Poster presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach, CA.
- Vuvan, D.** & Schmuckler, M.A. (2007b, August). *Tonal influences on auditory stream segregation*. Poster presented at the Meeting of the Society for Music Perception and Cognition, Montreal, QC.
- Vuvan, D.** & Russo, F.A. (2007c, August). *Effects of phoneme on the experience of sung interval size*. Poster presented at the Meeting of the Society for Music Perception and Cognition, Montreal, QC.

Invited Talks

- “False Feedback Makes Listeners Tone-Deaf” (McGill Cognitive Area Talk Series, 2016)
- “Striking the Right Note: Expectancy, Music, and the Brain” (Skidmore College Psychology Research Lecture, 2015)
- “Striking the Right Note: Expectancy, Music, and the Brain” (Goucher College Psychology Research Lecture, 2015)
- “The Power of the Voice: Vocal Signaling of Social Status” (Neuropragmatics and Emotion Lab Meeting, 2015)
- “Striking the Right Note: Expectancy, Music, and the Brain” (Bishop’s University Psychology Research Lecture, 2015)
- “Pitch Modularity in Amusia: A Meta-Analysis” (CIRMMT – Music Cognition Student Symposium, 2014)
- “Pitch Modularity in Amusia: A Meta-Analysis” (CRBLM – Workshop on Tone Languages, 2014)
- “The Robustness of Tonal Representations: Insights from Amusia Research” (CIRMMT - Workshop on Perception of Tonal Structure in Music, 2013)
- “The Statistical Learning of Musical Expectancy” (Neuropsychologie de la Musique, Udm, 2012)

“Cognitive-Perceptual Effects of Audio Game Training” (Annual meeting of the Cognitive Neuroscience Society, 2009)

GRANTS AND AWARDS

- Grammy Foundation Research Grant, 2016-2017 (\$20000)
- Collaborating Author (Principal Investigator: I. Peretz), CIHR Operating Grant: Brain and Genetic Basis of Musical Pitch Disorders, April 2014-April 2019 (\$500000)
- FRQNT Postdoctoral Scholarship, 2014-2016 (\$70000)
- Ontario Graduate Scholarship, 2011-2012 (\$15000)
- U of T Doctoral Completion Award, 2011-2012 (\$10000)
- NSERC Canada Graduate Scholarship, 2009-2011 (\$70000)
- Graduate Students Present Award (Cognitive Neuroscience Society), 2009 (\$500)
- J. Davidson Ketchum Graduate Scholarship, 2008-2009 (\$3000)
- Canadian Psychological Association Certificate of Academic Excellence, 2007
- U of T Graduate Fellowship, 2006-2011 (\$10500 per year)
- NSERC Undergraduate Summer Research Award, 2006 (\$5000)
- NSERC/U of T Natural Science & Engineering Excellence Award, 2005 (\$5000)
- New College Student Council In-Course Scholarship, 2005 (\$1000)
- New College Student Council In-Course Scholarship, 2004 (\$800)
- University of Toronto Dean's List, 2003-2006
- Golden Key International Honour Society Membership, 2003-present
- University of Toronto National Biology Scholarship, 2002 (\$5000)

SPECIALIZED TRAINING

- MEG training workshop (2015; McConnell Brain Imaging Centre, MNI)
- Software Carpentry: R for Pythonistas Master Class (2014; PyCon Montreal)
- Summer Program in Basic and Advanced fMRI Techniques (2013; FRSQ-RBIQ)
- Software Carpentry: Scientific Computing for Researchers (2009, University of Toronto)
- Department of Psychology Teaching Practicum (2009, University of Toronto)

COMMITTEE AND COMMUNITY SERVICE

- SMPC Student Board Member (2015-2017)
- BRAMS postdoc student representative (2015-2016)
- Organizer and presenter, BRAMS weekly student meetings (2013-present)
- Invited reviewer, *Assessment*, *Frontiers*, *Music Perception*, *Nature Scientific Reports*, and *Cortex*
- Symposium organizer, 2013 meeting of the Society for Music Perception and Cognition
- Organizer and presenter, Social Ecology Lab R Workshops (2011-2012)
- Organizer and presenter, Psychology Graduate Students Brown Bag at UTSc (2010-2012)
- Organizer and presenter, Workshops for Inter-Discipline Exchange and Novelty (2008-2012)
- Psychology representative, U of T Graduate Students' Union (2010-2011)
 - Member of the social justice and sustainability sub-committees
- Executive member of the Psychology Graduate Students' Association (2007-2011)
 - Member-at-large (2010-2011)
 - President (2009-2010)
 - Social Coordinator (2008-2009)
 - Treasurer and UTSc Representative (2007-2008)
- Administrator, Software Carpentry bootcamp for psychology graduate students (U of T, 2010)
- Organizer and presenter, Non-Academic Careers in Psychology workshop (U of T, 2010)

- Science outreach volunteer, Let's Talk Science (UTSc, 2008-2010)
- Judge, Toronto Science and Technology Fair (2009)
- Student mentor and tutor, New College Mentorship Program (U of T, 2003-2007)

PUBLIC MEDIA INTERVIEWS

"Is music a language and can it teach us how to speak? We asked a neuroscientist." (Print interview for Vice Magazine, published February 28, 2015) http://noisy.vice.com/en_ca/blog/is-music-a-language-and-can-it-teach-us-how-to-speak

"Tone Deafness." (Radio interview for Radio Health Journal, aired March 29, 2015) <https://radiohealthjournal.wordpress.com/2015/03/29/15-13-story-1-tone-deafness/>