

Finn Upham
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EMPLOYMENT

Postdoctoral Researcher, McGill University, Montreal, QC, Canada (2019-present)

Analysis of symbolic music corpuses from the 15th and 16th C for Single Interface for Music Score Searching and Analysis (SIMSSA). Supervised by Prof. Julie Cumming, Musicology

EDUCATION

New York University, New York, NY

PhD in Music Technology, 2018

Dissertation: Detecting the Adaptation of Listeners' Respiration to Heard Music. A study of the little known phenomenon by which listeners to music change when they breathe to fit with the stimulus. This included novel signal processing and statistics (Activity Analysis) to detect when alignment in respiratory phase over repeated listenings from individuals in case studies and across audiences to live performance. Four potential neurological mechanisms for this behaviour were identified in accordance with the latest respiration research:

Committee: M. Mary Farbood (Chair, NYU, Music Technology), David Poeppel (NYU, Psychology), and Dave Rapoport (Mt Sinai, Medicine)

Readers: Robert Rowe (NYU, Music Technology), Marc Scott (NYU, Applied Statistics)

McGill University, Montreal, QC, Canada

MA in Music Technology, 2011

BSc in Mathematics and Statistics, Honours, 2008

BMus in Music Theory, Honours, 2008

ADVISING

Freelance advising and analysis, 2018-2019

- Advising researchers at other institutions on continuous data analysis, ratings and psychophysiology, occasionally providing direct analysis support.

Consulting: **Experimental design and data analysis**, 2011-2018

- On referral from faculty supervisors, advised graduate students in music technology on research involving human participants.

Advisement: **Research Mentor** 2014-2015

- Coached a High School student through the development, execution, and analysis of a project involving continuous ratings of liking and familiarity with music.

TEACHING

Instructor: **Psychology of Music**, New York University, 2016, 2014

- Taught three sessions, including regular and accelerated summer terms.
- Graduate seminar for Music students in composition, performance, and music technology.

GRANTS AND FELLOWSHIPS

Postgraduate Doctoral Scholarship from the National Science and Engineering Research Council of Canada (NSERC), 2012

Steinhardt Doctoral Fellowship, 2011

- Funding granted to only one successful applicant to Music Technology at NYU per year.
- \$23 000 USD annual stipend for full time study for four years.

PEER REVIEWED PAPERS

Upham, F. & McAdams, S. (2018) Activity Analysis and Coordination in Continuous Responses to Musics. *Music Perception*. 35:3, 253-294.

Farbood, M. M., & Upham, F. (2013). Interpreting expressive performance through listener judgments of musical tension. *Frontiers in psychology*, 4.

Humphries, A. R., DeMasi, O., Magpantay, F. M., & Upham, F. (2012). Dynamics of a delay differential equation with multiple state dependent delays. *Discrete and Continuous Dynamical Systems A*.

Knight, T., Upham, F., & Fujinaga, I. (2011). The potential for automatic assessment of trumpet tone quality. In *Proceedings of the 12th International Society for Music Information Retrieval Conference* (pp. 573-578).

INTERNATIONAL CONFERENCE PRESENTATIONS

Upham, F. (2019). The Open Science Ecosystem, in the Open Science Symposium with Vuvan, D. T., Baker, D. J., Kragness, H., Loui, P., & Slevc, R. *2019 meeting of the Society of Music Perception and Cognition*, New York University, NYC (Symposium talk)

Upham, F., Egermann, H., & McAdams, S. A. (2018). The Audience's Breath: Collective Respiratory Coordination in Response to Music, *15th International Conference of Music Perception and Cognition*, Montreal, CA (Talk)

Upham, F. (2018). Demo: Activity Analysis on Psychophysiological Measurements of Responses to Music, *15th International Conference of Music Perception and Cognition*, Montreal, CA (Talk)

Upham, F. (2018). Felt It My Way: Idiosyncratic Psychophysiological Responses to Recorded Music, *15th International Conference of Music Perception and Cognition*, Montreal, CA (Poster)

Upham, F. (2017). The extra(ordinary) sex lives of fanfiction readers, *Fan Studies Network Conference 2017*. University of Huddersfeild, Huddersfeild, UK (Talk)

Upham, F. (2016). Breathing in Music: Measuring and Marking Time, *Making Time in Music*. Oxford, UK (Poster)

Upham, F. (2016). Deviations in Quiet Breathing during Music Listening. *14th International Conference on Music Perception and Cognition*, San Fransisco, CA (Poster)

McAdams, S. A. & Upham, F. (2015). Effects of previous knowledge about a piece of music on continuous ratings of musical resemblance. *2015 Meeting of the Society of Music Perception and Cognition*, Vanderbilt University, Nashville TS, USA (Talk)

McFee, B. & Upham, F. (2015). Interpreting musical taste through playlists. *2015 Meeting of the Society of Music Perception and Cognition*, Vanderbilt University, Nashville TS, USA (Talk)

Upham, F. (2015). Music for doing. *2015 Meeting of the Society of Music Perception and Cognition*, Vanderbilt University, Nashville TS, USA (Poster)

Upham, F. (2014). Reframing emotions and music. *13th International Conference on Music Perception and Cognition*, Seoul, Korea. (Talk)

- Upham, F. (2014) Listener respiration: Active, Attentive, or Inattentive. *13th International Conference on Music Perception and Cognition*, Seoul, South Korea. (Poster)
- Upham, F. (2014) Measuring listeners' emotionally expressive responses to music, *SysMus14*, London, UK. (Talk)
- Upham, F. (2013). Body and breath entrainment in the solo response project. *2013 Meeting of the Society of Music Perception and Cognition*, Toronto, Canada. (Talk)
- Farbood, M. M. & Upham, F. (2013). Coordination in musical tension and liking ratings of scrambled music. *2013 Meeting of the Society of Music Perception and Cognition*, Toronto, Canada. (Talk)
- Upham, F. (2013). Symposium on replication—Publishing practices in music cognition: Replication studies and null results. *2013 Meeting of the Society of Music Perception and Cognition*, Canada. (Talk)
- Upham, F. (2013). How and when I feel: Coordination of continuous emotional responses from a single subject, *3rd International Conference on Music and Emotion (ICME)*, Jyväskylä, Finland. (Talk)
- Upham, F. (2012). Many ways of hearing: Clustering continuous responses to music, *12th International Conference on Music Perception and Cognition*, Thessaloniki, Greece. (Poster)
- Upham, F. (2012). Limits on the application of statistical correlations to continuous response data. *12th International Conference on Music Perception and Cognition*, Thessaloniki, Greece. (Poster)
- Upham, F. & McAdams, S. A. (2011). Piece vs Performance: Comparing Coordination of Audiences' Physiological Responses to Two Performances of Arcadelt's "Il bianco e dolce cigno". *2011 Meeting of the Society of Music Perception and Cognition*, Rochester, NY. (Talk)
- Upham, F. (2010). Towards an Audience Model of Listening Experience (with McAdams, S.). *11th International Conference on Music Perception and Cognition*, Seattle, WA. (Talk)

REGIONAL CONFERENCES AND WORKSHOPS

- Upham, F. (2019). Human Subtracted: Social Distortion of Music Technology. *Workshop on Designing Human-centric MIR Systems*. Deft University of Technology, Netherlands (Talk)
- Upham, F. (2016). Breathing while listening to music. *Music and Movement Workshop*, New York University, New York NY, USA (Talk)
- Upham, F. (2016). Respiratory alignment to music in repeated response case studies. *North-East Music Cognition Group meeting (NEMCOG)*, Harvard University, Cambridge MS, USA (Poster)
- Upham, F. (2013). Rocking out in a chair: Physiological signal processing to detect dancing activity in a seated listener. *Third meeting on Cognitive Music Information Retrieval (CogMIR)*, Toronto, Canada. (Poster)
- Upham, F. (2013). Danceability and Head-nodding as Measured by Detrended Fluctuation Analysis. *Meeting of the Northeast Music Informatics Special Interest Group*, The Echonest, Boston, MA. (Talk)
- Upham, F. (2012). Online learning of Emotion Rating Changes using Musical Features as Experts. *Second meeting on Cognitive Music Information Retrieval (CogMIR)*, Ryerson University, Toronto, Canada. (Poster)

PUBLISHED SOFTWARE, DATASETS, AND RESOURCES

- Conference Program compilation scripts in Python and LaTeX (2019). https://github.com/finn42/Conference_programfiles_SMPC2019
- Activity Analysis Matlab toolbox. (2018). https://github.com/finn42/ActivityAnalysisToolbox_2.1

Online archive scraper in Python. (2017). https://github.com/ffinnagain/FFNet_Query_Scrapper
Repeated Responses to Music Case Studies (2017). <https://doi.org/10.6084/m9.figshare.5632210.v1>
Respiration belt analysis Matlab toolbox. (2016). <https://github.com/finn42/RespirationTracking>
Solo Response Project dataset (2013). <https://doi.org/10.6084/m9.figshare.812603.v5>
PureData Music Listening Experiment Interface. (2014). <http://wp.me/ptLMM-Eg>
Continuous Response Analysis Wiki. (2011) <http://crawiki.org>

PROFESSIONAL SERVICE

Producer and Host, The So Strangely Podcast on Recent Research in Music Science (2018-2019)
Podcast for interdisciplinary academic audience discussing recent publications related to Music Science with their lead researchers, with a focus on methodology
Publications and Publicity Chair, 2019 Meeting of the Society of Music Perception and Cognition, hosted by New York University (SMPC)
Student Board member of the Society of Music Perception and Cognition (2011-2012)

- Restructured and updated Society's constitution
- Developed and ran first student-mentor matching program for 2011 Rochester meeting.

Reviewer: Music & Science, JASA Express, Journal of New Music Research, International Symposium on Music Information Retrieval Conference (ISMIR), Music and the Moving Image, Sound and Music Computing Conference.

INSTITUTIONAL SERVICE

Lecture series coordinator for the Music and Audio Research Lab (MARL), NYU 2013-2016

- Scheduled lectures by visiting scholars, creating and decimating publicity materials

Faculty of music representative to the Post Graduate Society's Student (PGSS) 2011-2012

- Concurrently served on the PGSS's governance committee, University's Academic Policy and Planning committee, and advisory committee on student-administration communication.

Vice President (University Affairs) of SSMU, Students' Society of McGill University (2006-2007)

- Advocated for students on academic policy, including grading schemes, course evaluations, program reviews, academic integrity, and students' rights.
- Coordinated undergraduate representation at level of university and lead caucus of 13 student senators in the university senate

TECHNICAL SKILLS

Computer Programming languages: MatLab, Python, PureData, C, Google Spreadsheets

Psychological study methodologies:

- Behavioural: Time-continuous ratings, discrete ratings, multiple choice, short text responses.
- Psychophysiological: Skin conductance, Surface electromyography (sEMG) of facial muscles, Photoplethsmography for blood volume pulse, Respiratory inductance plethysmography
- Interactive: Semi-structured interview

Audio technology: Audio recording and editing for podcasting and audiobooks

Some experience with: Video motion capture, Web programming, Natural language processing, Machine learning, Graphic design, Game design, Data visualization

MUSICAL SKILLS

Instruments: Voice (choral: Alto II), Bassoon, Piano, Percussion (hand drums, auxiliary)

Analytic skills: Harmonic analysis, Classical form, Schenkerian analysis, 12 tone set theory, Counterpoint, Spectrogram study

Dance, performance: Scottish Highland dancing, Urban dance styles, Burlesque.

LANGUAGES

English, French

SELECT WEBSITES

Main personal website

So Strangely Podcast

Fandom Stats Repository (for a non-academic audience)