

Fiona C. Manning
Curriculum vitae

Psychology Building (PC), Room 102
McMaster University
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EDUCATION

McMaster University (in progress: completion anticipated in July 2016)
PhD in Psychology, Neuroscience and Behaviour
Area of focus: Sensorimotor integration and predictive timing

McMaster University, 2011
Honours B.Sc. Psychology, Neuroscience and Behaviour (Music Cognition Specialization)
Thesis: "Moving to the beat" improves auditory rhythm perception

RESEARCH INTERESTS

Timing perception, movement timing, multisensory perception, sensorimotor integration, auditory perception, motor control, audio-visual integration

PUBLICATIONS

Refereed Journal Articles

Manning, F. C., Harris, J., & Schutz, M. (*under review*). Effector-specific training facilitates perceptual timing abilities in a sensorimotor synchronization task.

Manning, F. C., & Schutz, M. (*in press*). Trained to keep a beat: Movement-related enhancements to timing perception in percussionists and non-percussionists. *Psychological Research*.

Manning, F. C., & Schutz, M. (2015). Movement enhances perceived timing in the absence of auditory feedback. *Timing & Time Perception*, 3, 3-12.

Cirelli, L. K., Bosnyak, D., **Manning, F. C.,** Spinelli, C., Marie, C., Fujioka, T., Ghahremani, A., & Trainor, L. J. (2014). Beat-induced fluctuations in auditory cortical beta-band activity: Using EEG to measure age-related changes. *Frontiers in Psychology: Auditory Cognitive Neuroscience*, 5, 742.

Manning, F., & Schutz, M. (2013). "Moving to the beat" improves timing perception. *Psychonomic Bulletin & Review*, 20, 1133-1139.

Schutz, M., & **Manning, F.** (2012). Looking beyond the score: The musical role of percussionists' ancillary gestures, *Music Theory Online*, 18(1).

Invited Submissions

Schutz, M., & **Manning, F.** (2013). Effectively using affective gestures: What percussionists need to know about movement and perception. *Percussive Notes*, 51, 26-31.

Conference Proceedings

Manning, F. C., & Schutz, M. (2011). Moving to the beat improves timekeeping in a rhythm perception task. *Proceedings of the Acoustical Society of Canada*

GRANTS

2015 Research Grant LIVELab, McMaster University. Value: \$2460

AWARDS AND HONOURS

2014-2016 Joseph-Armand Bombardier Canadian Graduate Scholarship (\$105,000)

2013-2014 Ontario Graduate Scholarship (\$15,000)

2013 Graduate Student Travel Grant: Department of Psychology, Neuroscience and Behaviour, McMaster University (\$350)

2013 Poster Award at Progress in Motor Control Conference, McGill University (\$500)

2012-2013 Queen Elizabeth Graduate Scholarship in Science and Technology (\$15,000)

2012 Graduate Student Travel Grant: Department of Psychology, Neuroscience and Behaviour, McMaster University (\$350)

2011-2012 Graduate Student Departmental Scholarship (\$10,000)

INVITED TALKS

2016 *Auditory-motor interactions in predictive timing: the benefits of moving to the beat.*
Department of Psychology, Neuroscience and Behaviour, McMaster University, January 28.

2015 *Sensorimotor interactions in rhythm perception: the benefits of moving to the beat.*
Department of Kinesiology, University of Waterloo, March 8.

CONFERENCE PRESENTATIONS

Talks

Manning, F., Tardif, M., & Schutz, M. (2015, August). Effector rate limits and stimulus tempo: Exploring interactions with timing perception. Paper presented at the Society for Music Perception and Cognition (SMPC) conference. Nashville, TN.

Manning, F., & Schutz, M. (2015, February). *Metrical context and motor production: Interactions with timing perception*. Paper presented at Rhythm and Timing Symposium. London, ON.

Manning, F., & Schutz, M. (2014, August). *Tapping through longer periods of silence improves perceived timing*. Paper presented at the 13th International Conference on Music Perception and Cognition (ICMPC). Seoul, South Korea.

Manning, F., & Schutz, M. (2013, September). *Temporal context mediates the effect of movement on perceived timing*. Paper presented at the Rhythm Production and Perception Workshop. Birmingham, UK.

Manning, F., & Schutz, M. (2013, August). *The role of expertise in perception of timing: A reliance on motion*. Paper presented at the Society for Music Perception and Cognition (SMPC) conference. Toronto, ON.

Manning, F., & Schutz, M. (2013, May). *Timing perception and production in expert musicians and nonmusicians*. Paper presented at the Midwestern Music Cognition Symposium. Columbus, OH.

Manning, F., & Schutz, M. (2013, April). *Exploring the effects of percussion training on perceived timing*. Paper presented at the ESM/UR/Cornell/Buffalo Music Cognition Symposium: Local Research. Rochester, NY.

Manning, F., & Schutz, M. (2013, March). *Does auditory feedback contribute to the effect of movement on timing perception?* Paper presented at the New England Sequencing and Timing (NEST) meeting. Amherst, MA.

Manning, F., & Schutz, M. (2012, July). *Tapping variability predicts rhythmic acuity*. Paper presented at Perspectives on Rhythm and Timing (PoRT) workshop. Glasgow, UK.

Manning, F., & Schutz, M. (2012, February). *Movement and timekeeping during silence and sound*. ESM/UR/Cornell Music Cognition Symposium: Local Research

Manning, F., & Schutz, M. (2011, October). *Moving to the beat improves timekeeping in a rhythm perception task*. Paper presented at Acoustics Week in Canada (AWC). Québec City, QC.

Manning, F., & Schutz, M. (2011, August). *Tapping to hear: How “moving to the beat” improves rhythmic sensitivity*. Paper presented at the Society for Music Perception and Cognition (SMPC) conference. Rochester, NY.

Manning, F., & Schutz, M. (2011, April). *Tapping to the beat improves timing perception*. ESM/UR/Cornell Music Cognition Symposium: Local Research

Posters

Manning, F., Siminoski, A., & Schutz, M. (2016, February). *Movement familiarity and multisensory cues heighten timing sensitivity*. Poster presented at Lake Ontario Visionary Establishment (LOVE) Meeting, Niagara Falls, ON.

Manning, F., Siminoski, A., & Schutz, M. (2015, November). *Pianists' keystrokes lead to enhancements in perceived timing*. Poster presented at McMaster Institute for Music and the Mind NeuroMusic Conference. Hamilton, ON.

Manning, F., & Schutz, M. (2015, October). *Symmetrical temporal attention surrounding targets as a consequence of tapping*. Poster presented at BRAMS: The Next 10 Years Symposium. Montreal, QC.

Manning, F., Cirelli, L., & Schutz, M. (2015, July). *Tapping to a slow beat encourages mutually adaptive movements*. Poster presented at the Rhythm Production and Perception Workshop. Amsterdam, NL.

Tardif, M., **Manning, F., & Schutz, M.** (2015, February). *Motor effector's tapping rate influences movement's effect on timing perception*. Poster presented at Lake Ontario Visionary Establishment (LOVE) Meeting, Niagara Falls, ON.

Tardif, M., **Manning, F., Harris, J., & Schutz, M.** (2014, September). *Timing judgments improve with tapping consistency across effectors in percussionists*. Poster presented at McMaster Institute for Music and the Mind NeuroMusic Conference. Hamilton, ON.

Manning, F., Harris, J., Schutz, M. (2014, April). *Comparing motor effectors that determine perceived timing: A sensorimotor integration task*. Poster presented at Neural Control of Movement (NCM) 24th Annual Meeting. Amsterdam, NL.

Harris, J., **Manning, F., Schutz, M.** (2014, February). *Trained to keep a beat? The role of musical experience in finger tapping*. Poster presented at Lake Ontario Visionary Establishment (LOVE) Meeting, Niagara Falls, ON.

Tardif, M., Manning, F., & Schutz, M. (2014, February). *Better together? Simultaneous and alternating stick tapping in a continuation paradigm*. Poster presented at Lake Ontario Visionary Establishment (LOVE) Meeting, Niagara Falls, ON.

Tardif, M., **Manning, F., & Schutz, M.** (2013, November). *Tapping into synchrony: Synchronization and continuation tapping with different effectors*. Poster presented at McMaster Institute for Music and the Mind NeuroMusic Conference. Hamilton, ON.

Spinelli, C., Cirelli, L., Ghahremani, A., **Manning, F.**, Marie, C., Bosnyak, D., Fujioka, T., & Trainor, L. *Using EEG to measure developmental differences in beat-induced fluctuations of beta band activity in the right auditory cortex*. Poster presented at McMaster Institute for Music and the Mind NeuroMusic Conference. Hamilton, ON.

Cirelli, L., Ghahremani, A., **Manning, F.**, Spinelli, C., Marie, C., Bosnyak, D., Fujioka, T., Trainor, L. J. (September, 2013). Using EEG with children and adults to measure oscillatory activity in auditory and motor regions in response to isochronous auditory sequence. Poster presented at the Rhythm Production and Perception Workshop. Birmingham, UK.

Spinelli, C., Cirelli, L., Ghahremani, A., **Manning, F.**, Marie, C., Bosnyak, D., Fujioka, T., & Trainor, L. (August, 2013). Using EEG to measure developmental changes in oscillatory beta band responses during musical beat processing. Poster presented at the Auditory Cognitive Neuroscience (ACN) conference, Hamilton, ON.

Harris, J., **Manning, F.**, & Schutz, M. (August, 2013). Musicians' movements for timekeeping: A link between tapping and musical experience. Poster presented at the Society for Music Perception and Cognition (SMPC) conference. Toronto, ON.

Manning, F., & Schutz, M. (2013, July). Movement timing determines perceived auditory timing in a sensorimotor integration task. Poster presented at the Progress in Motor Control International Symposium. Montreal, QC.

Manning, F., & Schutz, M. (2013, February). Effects of auditory feedback on tapping and timing perception. Poster presented at the Lake Ontario Visionary Establishment (LOVE) Meeting. Niagara Falls, ON.

Manning, F., & Schutz, M. (2012, October). The role of auditory feedback in movement timing. Poster presented at the McMaster Institute for Music and the Mind NeuroMusic Conference. Hamilton, ON.

Manning, F., & Schutz, M. (2012, July). Using body movement to enhance timekeeping. Poster presented at 12th International Conference on Music Perception and Cognition (ICMPC)/8th Triennial Conference of the European Society for the Cognitive Science of Music (ESCOM). Thessaloniki, Greece.

Manning, F., & Schutz, M. (2012, February). Tapping is indicative of timekeeping abilities. Poster presented at the Lake Ontario Visionary Establishment (LOVE) Meeting. Niagara Falls, ON.

TEACHING AND MENTORING EXPERIENCE

Online Instructional Designer: Ontario Online Initiative

April – November 2015

- Collaboratively developed an online multi-module course teaching key concepts in statistics
- Wrote and recorded lectures facilitated by visuals using real data to teach fundamentals in statistics

Teaching Assistantships

Basic and Clinical Neuroscience, McMaster University (Winter, 2016)

Inferential Statistics, McMaster University (Fall, 2015)

Descriptive Statistics, McMaster University (Winter, 2015)

Inferential Statistics, McMaster University (Fall, 2014)

Human Sexuality, McMaster University (Winter, 2014)

Senior Thesis Class, McMaster University (Fall, 2013)

Music Cognition, McMaster University (Winter, 2013, 2016)

Human Perception and Cognition, McMaster University (Fall, 2012)

Cognitive Development and Music Education, McMaster University (Winter, 2012)

Sensory Processes, McMaster University (Fall, 2011)

Mentoring

2015-present Supervising 4 undergraduate independent project students

2014-2015 Supervised 4 undergraduate independent project students and 1 honours psychology thesis student

2013-2014 Supervised 6 undergraduate independent project students and 1 honours psychology thesis student

2012-2013 Supervised 5 undergraduate independent project students

DEPARTMENTAL/UNIVERSITY SERVICE

Psychology, Neuroscience and Behaviour Undergraduate Curriculum Committee, McMaster University (2015-2016)

Psychology, Neuroscience and Behaviour Colloquium Series Committee, McMaster University (2012-present)

Psychology, Neuroscience and Behaviour Honours Thesis Poster Judge, McMaster University (2012-present)

Conversations in Academia Executive Committee (2014-2015)

Open Access Debate Panel, Conversations in Academia, McMaster University (November, 2014)

LIVE Lab Grand Opening Committee (September, 2014)

McMaster Institute for Music and the Mind (MIMM) Lecture/Workshop volunteer (2009-2014)

McMaster University Undergraduate Fall Preview Day volunteer; Music Cognition Student Representative (2010-2014)

May @ Mac volunteer; Music Cognition Student Representative (May 2011 & 2012)

SERVICE TO PROFESSION

Co-founder, REST Network (November 2012-present), online catalogue that aggregates recent research abstract on human rhythm-related research through a website feed and monthly email newsletter

Ad-hoc reviewer for *Journal of Experimental Psychology: Human Perception and Performance*

Society for Music Perception and Cognition (SMPC) Conference Programming Committee (2013)

COMMUNITY OUTREACH

Guest speaker on music cognition at Corpus Christie Secondary School in Burlington, ON (February, 2013; November 2015)

Disseminating information about music cognition and scientific research at the Percussive Arts Society International Convention (PASIC) in Indianapolis, IN (November, 2013)

MEMBERSHIPS

Society for Music Perception and Cognition Student Member (2011-present)

International Society of Motor Control Student Member (2013-present)

McMaster Institute for Music and the Mind Student Member (2010-present)

Association for Psychological Science Student Member

McMaster Music Cognition Society Founding President (2010-2011); Graduate Representative (2011-present)

TECHNICAL SKILLS

Software and Programming Proficiencies

Statistics: R, SPSS

Programming: MATLAB, Python

Digital Audio Editing: Amadeus, Audacity

Physiological Measurement: Electroencephalography: Biosemi and g.tec;

Motion capture technology: Vicon and Qualisys

Applications: LaTeX, Microsoft Office, Adobe CS and other common productivity packages for Windows and Apple OS X

LANGUAGES

English, French

CITIZENSHIPS

Canadian, Irish