

The Science of Performance

PSYCH/MUSICCOG 3SP3

Fall 2017

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Prerequisites:	PSYCH/MUSICCOG 2MP3; PNB 2XA3 or PSYCH 2E03

Course Description

This course explores empirical, methodological, and cultural aspects of the study of performance, with a principal focus on the performing arts (music, dance, and theatre). This includes the social contexts of performance as well as the mechanisms of motor production, motor learning, timing, interpersonal synchronization, improvisation, emotional expression, and audience response. Research methods available to study the science of performance in the McMaster LIVELab will be introduced.

Course Objectives

By the end of the semester, you should (1) understand the nature of performance in the performing arts and beyond; (2) have a general understanding of the methods used to study performance and audience response; (3) understand the mechanisms of interpersonal coordination in performance; and (4) be familiar with basic mechanisms of motor learning.

Readings

See the last page of this syllabus for the assigned articles.

Avenue to Learn

This course uses Avenue to Learn to post the course outline, lecture slideshows, articles, and other materials.

Please do read the Announcements that I post on Avenue. They contain useful information.

Course Evaluation

Quizzes

Starting in Week 2, there will be a quiz during the first 10 minutes of each class session, covering the two assigned papers for that week (there is no quiz on the Week 1 papers, although they will be covered on the exams). The quizzes will consist of true/false questions, fill-in questions, or one-line writing questions. There will be 6 questions/quiz, 3 covering each paper.

Each quiz will count 1% toward the final grade, for a total of 10%. The final grading will be adjusted such that the lowest quiz score of the 10 quizzes will be dropped. This should also cover a missed class due to illness or travel.

Participation in Class Discussions

This course is being taught not as a standard lecture course but instead as something similar to a graduate seminar in which discussion is the principal means of learning the material. Hence, you will be required both to attend the classes and to actively participate in the class discussions.

You are required to make at least one substantive comment per class session (hopefully more) in order to earn the 0.5% participation score per class session, for a total of 5% of the final grade. As with the quizzes, only 9 out of the 10 classes will count towards the semester's participation score.

Exams

There will be two **exams**. *Exam 2 will constitute one part of the final exam.* In addition, there will be a separate **comprehensive final exam** that will constitute the second part of the final exam and that will cover material from the entire course. The exams will consist of true-false questions, fill-in questions, and short-answer questions. The comprehensive final will consist of fill-in questions only.

Exams will cover the assigned readings. In addition to concepts, you will be tested on *graphical* material, such as figures resembling those from the assigned readings.

Presentation

You will be asked to do a presentation about one (assigned) article in the course. It will count for 10% of your final grade. It should be done using a Powerpoint file that contains all of the figures and tables from the paper, as well as introductory and discussion-related material. The maximum time for the presentation will be 45 minutes, including all discussion time. As the presenter, you will also be responsible for leading a class discussion of the paper that engages the students in the discussion.

You will be required to meet with the instructor the week before your presentation in order to discuss the paper, get clarification on confusing points, and discuss the general outline of your talk, Powerpoint presentation, and review article (see below).

The presentation will be marked on a *pass/fail* basis. You will be asked to submit your Powerpoint presentation to the instructor so that it can be posted on Avenue to the class as a whole.

Review article

You will be asked to write a 4-5-page (double-spaced) review article on the topic of your assigned article. The paper will count for 15% of the final grade. It will be due on *the Monday 2 weeks after your presentation date*. The paper should include a discussion of **5 references** (articles or book chapters) beyond the assigned paper. Please include the assigned paper as well. The paper should be about *the general topic* and not just be a critique of the assigned paper. The paper should take the form of a small review article (what's referred to in the literature as a "mini-review"). Please submit this BOTH as a hard copy to the TA and as a .doc file to the instructor.

NOTE: Citations and references should be written according to American Psychological Association (APA) style. Be meticulous when creating your reference list. If you are not familiar with how to create citations or references, please consult the course TA.

Contribution of the Assessments to the Final Grade

Quizzes	10% of the grade
Participation	5% of the grade
2 exams (each one 20% of the grade)	40% of the grade
Comprehensive final	20% of the grade
Presentation	10% of the grade
Review article	15% of the grade

An Important Note about Missing the Midterm (Exam 1)

If you are too sick to write the midterm, you are required to inform the instructor of this by email or phone, preferably *before* the midterm but no more than 48 hours after the midterm. In addition, you must schedule a time with the TA to take a make-up midterm no more than one week after the midterm date. **Please understand that submitting an MSAF note does NOT exempt you from writing the midterm.** Failure to take the midterm by one week after the midterm date will result in a **total loss of credit for the exam**, unless you have certification from a doctor that you have a chronic condition and are unable to write the exam at that time.

McMaster University Grading Scale

A+ 90-100; A 85-89; A- 80-84; B+77-79; B 73-76; B- 70-72; C+ 67-69; C 63-66; C- 60-62; D+ 57-59; D 53-56; D- 50-52; F 0-49

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. The academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

A Note from the University

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Weekly Lecture Topic and Reading Schedule

Date	Topic	Articles
September 11	(1) The nature of performance	Brown (unpublished)
September 18	(2) The evolution of performance	Liénard (2006) Watson-Jones (2016) LIVELab tour
September 25	(3) Role playing in performance	Brown (2017) Konijn (2000)
October 2	(4) Audience processes	Thompson (2006) Stevens (2009)
October 9	(5) Reading Week	
October 16	(6) Physiological synchrony	Konvanilka (2011) Lindenberger (2009)
October 23	(7) MIDTERM 1 covering Weeks 1-4 & 6	
October 30	(8) Interaction and coordination I: Music	Goebel (2009) Timmers (2014)
November 6	(9) Interaction and coordination II: Movement	Luck (2009) Chauvigné (unpublished)
November 13	(10) Expression in performance	Eeola (2013) Van Dyke (2013)

November 20	(11) Improvisation	Goldman (2013) Norgaard (2014)
November 27	(12) Talent and performance skill	Ackermann (2014) review Macnamara (2014)
December 4	(13) Motor learning	Tempel (2015) Fagundes (2013)
December ?	MIDTERM 2 covering Weeks 8-13 COMPREHENSIVE FINAL covering whole course	

References for Articles (all are posted on Avenue)

Week 1: The nature of performance

Brown, S., & Dissanayake, E. (unpublished). The synthesis of the arts: From ceremonial ritual to “total work of art”.

Week 2: The evolution of performance

Liénard, P., & Boyer, P. (2006). Whence collective rituals? A cultural selection model of ritualized behavior. *American Anthropologist*, *108*, 814–827.

Watson-Jones, R. E., & Legare, C. H. (2016). The social functions of group rituals. *Current Directions in Psychological Science*, *25*, 42-46.

Week 3: Role playing in performance

Brown, S. (2017). Proto-acting as a new concept: Personal mimicry and the origins of role playing. *Humanities*, *6*, 43.

Konijn, E. A. (2000). *Acting emotions*. Amsterdam: Amsterdam University Press. READING: pp. 21-24 and 36-51.

Week 4: Audience processes

Thompson, S. (2006). Audience responses to a live orchestral concert. *Musicae Scientiae*, *10*, 215-244.

Stevens, C. J., Schubert, E., Morris, R. H., Frear, M., Chen, J., Healey, S., Schoknecht, C., & Hansen, S. (2009). Cognition and the temporal arts: Investigating audience response to dance using PDAs that record continuous data during live performance. *International Journal of Human-Computer Studies*, *67*, 800-813.

Week 6: Physiological synchrony

Konvalinka, I., Xygalatas, D., Bulbulia, J., Schjødt, U., Jegindø, E. M., Wallot, S., Van Orden, G., & Roepstorff, A. (2011). Synchronized arousal between performers and related spectators in a fire-walking ritual. *Proceedings of the National Academy of Sciences*, *108*(20), 8514-8519.

Lindenberger, U., Li, S.-C., Gruber, W., & Muller, V., (2009). Brains swinging in concert: Cortical phase synchronization while playing guitar. *BMC Neuroscience*, *10*, 22.

Week 8: Interaction and coordination I: Music

Goebel, W., & Palmer, C. (2009). Synchronization of timing and motion among performing musicians. *Music Perception, 26*(5), 427-438.

Timmers, R., Endo, S., Bradbury, A., & Wing, A. M. (2014). Synchronization and leadership in string quartet performance: A case study of auditory and visual cues. *Frontiers in Psychology, 5*, 645.

Week 9: Interaction and coordination II: Movement

Luck, G., & Toiviainen, P. (2009). Ensemble musicians' synchronization with conductors' gestures: An automated feature-extraction analysis. *Music Perception, 24*, 189-200.

Chauvigné, L., Walton, A., Richardson, M., & Brown, S. (unpublished). Group synchrony and multisensory integration in folk dancing.

Week 10: Expression in performance

Eerola, T., Friberg, A., & Bresin, R. (2013). Emotional expression in music: Contribution, linearity, and additivity of primary musical cues. *Frontiers in Psychology, 4*, 487.

Van Dyck, E., Maes, P.-J., Hargreaves, J., Lesaffre, M., & Leman, M. (2013). Expressing induced emotions through free dance movement. *Journal of Nonverbal Behavior, 37*, 175-190.

Week 11: Improvisation

Goldman, A. (2013). Towards a cognitive-scientific research program for improvisation: Theory and an experiment. *Psychomusicology, 23*(4), 210-221.

Norgaard, M. (2014). How jazz musicians improvise: The central role of auditory and motor patterns. *Music Perception, 31*(3), 271-287.

Week 12: Talent and performance skill

Ackermann, P. L. (2014). Nonsense, common sense, and science of expert performance: Talent and individual differences. *Intelligence, 45*, 6-17.

Macnamara, B. N., Hambrick, D. Z., & Oswald, F. L. (2014). Deliberate practice and performance in music, games, sports, education, and professions: A meta-analysis. *Psychological Science, 25*, 1608-1618.

Week 13: Motor learning

Tempel, T., Loran, I., & Frings, C. (2015). Dancing your moves away: How memory retrieval shapes complex motor action. *Journal of Experimental Psychology: Applied, 21*, 300-312.

Fagundes, J., Chen, D. D., & Laguna, P. (2013). Self-control and frequency of model presentation: Effects on learning a ballet passé relevé. *Human Movement Science, 32*, 847-856.