You’re Invited!

The Perception and Cognition Special Research Interest Group will hold its biennial meeting on April 11, 2002 as part of the MENC National In-Service Conference in Nashville, Tennessee. The SRIG session will feature presentation of two new research studies as well as election of a new SRIG Chair-Elect. We shall also welcome Dr. Peter McAllister of Ball State University as he takes over as the new SRIG Chair.

Summaries of this year’s featured research studies are included elsewhere in this newsletter. Researchers Scott Lipscomb, Donald Hodges, Rachel Nardo and Mark Geisler will be on hand to share their work and take questions from session attendees.

So join us on Thursday, April 11. The session—the first SRIG session of the conference—begins at 9:15 and is open to all interested conference attendees. We’ll look forward to seeing you in Nashville.

Find all the conference details at:

The Biological Foundations of Music
Now Available On-Line!
The Biological Foundations of Music is the collected papers from the symposium of the same name held in New York City in March, 2000. Edited by Robert Zatorre and Isabelle Peretz, this volume includes outstanding articles and research summaries by numerous internationally noted scholars. Previously only available in a print edition, the full text is now accessible to all at no charge through the New York Academy of Sciences. Go to www.annalsnyas.org and follow the links to volume 930.
Tonality Judgments in Popular Music Contexts by Preteens and College Students: A Comparative Analysis

Scott D. Lipscomb • Northwestern University
Donald A. Hodges • University of Texas – San Antonio

Very little is known about preteens' abilities to make tonality judgments. The purpose of this study was to investigate the ability of fifth-grade students to make tonality judgments using popular music, the style with which they are most familiar. When results revealed that these young students were unable to detect the tonic reliably, a group of college students was added for comparison. Preteen subjects were 52 fifth-grade students in four intact music classes, who participated in a ten-week Creative Music Project. College subjects were 49 students enrolled in two sections of a rock music appreciation course. For the elementary students, the first and last weeks were used for data collection (pre- and posttests). During the middle eight weeks, students participated in a creative music class in which they composed music using MIDI keyboards and computer software. The college students were tested near the end of a five-week summer semester.

The experimental method consisted of two tonality judgments in response to popular music excerpts, including selections by Ricky Martin, Britney Spears, *Nsync, Christina Aguilera, and Matchbox Twenty. In the first testing procedure, students heard a brief example (approximately 30-40 seconds), during which they were encouraged to listen for the "home tone" (i.e., tonic or do). The second time they heard the excerpt, they could click on four speaker icons displayed on a computer screen, each producing a piano-like tone. One tone was the tonic and the other three were randomly chosen (one diatonic tone and two nondiatonic tones). The four tones could be sounded before, during, or after the excerpt. At the conclusion of the excerpt, subjects clicked one final time on the speaker icon they believed sounded the home tone. The second testing procedure involved moving a computer mouse forward and backward to change pitches within a one-octave chromatic range. During the second hearing of the excerpt, the "slider" tone sounded continuously, changing pitch with mouse movements. At the conclusion of the excerpt, subjects left the mouse in the proper position to sound the home tone and pressed the ENTER key.

Data analysis indicated considerable disparity between the two testing procedures, with the slider technique being much more difficult. Comparison of the pretest and posttest conditions of the preteen subjects with responses obtained from the college students revealed surprising results. Even the college students were unable to identify the tonic pitch accurately. These results have significant implications for music education.

Please direct inquiries about this study to lipscomb@northwestern.edu

New Reading of Interest

The science and psychology of music performance: Creative strategies for teaching and learning.
Richard Parncutt & Gary McPherson, Editors
New York: Oxford University Press.

What does scientific research have to offer the practicing musician or music teacher? The Science and Psychology of Musical Performance surveys the expanding fields of music psychology, music education, and acoustics, and explores the practical implications of recent research findings for music performance and education. Despite the book's broad focus on Western culture, the approach is international; and all educational levels, from elementary through to universities and conservatories, are addressed. Twenty-one chapters cover the personal and environmental influences that shape the learning and performance of music during a musician's lifespan (musical potential, environmental influences, motivation, performance anxiety, brain mechanisms, music medicine), the essential subskills of musical performance (ear-playing, sight-reading, improvisation, practice, memory, intonation, structural and emotional expression, body movement), and performance issues related to specific instruments and ensembles (voice, choir, piano, strings, winds, and conducting). Each chapter is co-authored by two internationally recognized scholars—one a scientist (psychologist, acoustician, physiologist, or physician) and the other a performer or music educator—ensuring that the contributions are both original and up to date. A rich source of
both research material and teaching ideas, the book represents an invaluable addition to the libraries of music educators, practicing musicians, university students, and researchers in music performance.
Evaluation of Cognitive and Perceptual Processes Elicited by Interactive Music Software Using Electroencephalographic (EEG) Recording Techniques

Rachel Nardo • Indiana University/Purdue University – Indianapolis
Mark W. Geisler • San Francisco State University

The goal of this study was to quantify learning in a music-related task with frontal electroencephalographic (EEG) brain activity and behavioral responses to assess whether or not and how music aids in learning. 32 adult subjects (16 males and 16 females) served as participants in a counterbalanced, within subject, manipulation of two conditions: Music and No Music. Each condition involved two learning trials, the first trial included learning a Beat (steady .75 beats/sec) and the second trial included learning a Rhythm (variable .25-1 beats/sec). In the Music condition, the learning trials were paired with music that matched both the Beat and the Rhythm. In the No Music condition, participants had to rely on the visual cues to learn the Beat and the Rhythm. The subject's task was to respond with a button press to the Beat or Rhythm while seated in front of an animated computer screen that gave visual cues to the Beat and Rhythm. One key question was: Does the addition of music, paired to this Beat or Rhythm, aid or hinder learning? A second question was: Can we measure, electrophysiologically, the change that occurs during learning? In order to address these questions we recorded correct responses to the Beat and Rhythm learning trials while recording EEG. Ten seconds of raw EEG brain activity, from each trial, were analyzed using Fast Fourier Transformations (FFTs). The standard deviations of the mean frequency from the Alpha band (8-13 Hertz) were used to elicit Alpha Power. Alpha Power was measured in the frontal regions of the left and right hemispheres: Left (F7) and Right (F8) orbital frontal recording sites of the international 10-20 system of electrode placement. Several studies have shown that frontal Alpha Power measurements are related to the amount of mental effort being exerted. Lower levels of Alpha Power over the frontal lobes indicate greater mental activity and conversely, higher levels of Alpha Power are associated with reduced mental activity. The results from the current investigation showed that frontal asymmetries (differences between left and right hemispheric activity) in the Alpha Power band were associated with enhanced performance for the Rhythm learning trial when learning was paired with music. This asymmetry was not present in the trials without music. The data from the behavioral responses (button presses) revealed that music enhanced learning for the Rhythm trials, but not for the Beat trials. The correlations between correct behavioral responses and Alpha Power showed that as the number of correct responses increased Alpha Power decreased (Pearson Correlation, r = -.60). This study supports and extends previous findings. In sum, these results suggest that music aids in the acquisition of rhythm, but may not be necessary in the acquisition of beat. In addition, this study shows that learning can be measured using EEG brain activity. Funding for this project was received by the National Academy of Recording Arts and Sciences. Please direct inquiries about this study to rnardo@iupui.edu

Upcoming Events & Announcements

The Symposium on Systems Research in the Arts, once again to be entitled "Music, Environmental Design, and the Choreography of Space" will be held in Baden-Baden, July 31 - August 3, 2002. For details, visit the symposium web page at www.jcrhodes.net/2002.

The Pierfranco and Luisa Mariani Foundation for Paediatric Neurology is promoting a conference on The Neurosciences and Music in cooperation with the International School of Neurological Sciences. The conference is scheduled to take place from in October 2002 in the extraordinary setting of the San Servolo Island in the Venice lagoon. The Mariani Foundation is a non-profit organization primarily dedicated to the field of pediatric neurology; details on this and other programs may be found on their bilingual website, www.fondazione-mariani.org.
ICMPC7 is the world conference on music psychology and related disciplines. The 2002 Sydney conference, held July 17-21, will be sponsored by the Asia-Pacific Society for the Cognitive Sciences of Music (APSCOM) and hosted jointly by the Australian Music and Psychology Society (AMPS), the University of New South Wales and the Macarthur Auditory Research Centre Sydney (MARCS). ICMPC7 will include the first formal meeting of APSCOM. The focus of ICMPC7 is interdisciplinary presentations, discussion and dissemination of new research relating to music perception and cognition. See the ICMPC7 web site for details: www.icmpc.org.

Call for Papers. The Fifth International Symposium on the Philosophy of Music Education Submissions will be held at Lake Forest College, Lake Forest, Illinois, U.S.A., June 4-7, 2003. Participants can expect to enjoy stimulating conversation in a relaxed environment and the rich cultural milieu in nearby Chicago and the Ravinia Festival. This symposium provides an important opportunity for philosophers, thought leaders, teachers, performers, composers, and others interested in reflecting on issues in music education to rethink music and music education from an international perspective. Papers should be in English, take about thirty minutes to present, and will be invited for publication in the Philosophy of Music Education Review. Submit three hard copies of the full text for blind review with author name and affiliation on a separate title page. Authors should certify that the papers are their original work and have not been published elsewhere or under review for other conferences or publications. Electronic submissions cannot be accepted. Papers should be postmarked by September 1, 2002 to be considered. Send copies to: Iris M. Yob, P.O. Box 6595, Bloomington, IN 47407, USA.

There are also opportunities to respond to papers. Responses are normally five to ten minutes in length with the purpose of opening up conversation regarding the papers presented. Responses may be published in the In Dialogue section of the Philosophy of Music Education Review. Direct inquiries about paper submissions or participation as a respondent to the program committee co-chairs Iris Yob (iyob@bloomington.in.us) or Frank Heuser (fheuser@ucla.edu). Also, visit the web site at www.indiana.edu/~ispme/.