

## Foreword

The theme of this special issue of JIMS is “Nature versus Culture”, coinciding with the theme of the Conference for Interdisciplinary Musicology 10 held in July last year in Sheffield, UK. All contributions to this special issue were presented at the conference and are in some way or another related to this bigger topic as explained below.

Despite considerably personal pressures (Matthew Woolhouse moved back and forth to India and will soon start a position in Canada), the special issue is now ready for publication and we are very grateful to the authors, the reviewers, Ali C. Gedik and Richard Parncutt for their help and patience with accomplishing the volume.

The theme “Nature versus Culture” is addressed in the contributions from different perspectives. A consistent characteristic is that most authors do not strongly distinguish nature and culture, but rather emphasise the continuum between nature and culture.

Taylor and Hollis are most explicit in this respect. In their presentation of characteristics of bird song, in particular songs by the Australian pied butcherbird, they view bird song as culture, in the sense that it is learned and developed through imitation and variation. Additionally, they argue for the relevance of musicology and a trained musical ear for the interpretation of bird songs and give ample examples of the classification of bird song characteristics in musicological terms. Although the drawn parallel may be controversial, it seems clear that a parallel is fruitful for a nuanced categorisation of bird song characteristics and an increasing awareness of the diversity of techniques that are being used among birds. Also it may trigger debate and further reflection on possible parallels between bird and human song and origins of music as the authors are expecting.

The second approach taken towards the theme is represented by two papers who have combined psychoacoustic modelling with an ethnomusicological perspective. Ambrazevičius and Pärtlas investigate psychoacoustic pressures that may have contributed to the establishment of a symmetrical scale structure in songs of the Estonian Setu minority. Measurements of the roughness of vertical sonorities are related to intonation in a two-part Setu song.

Lartillot and Ayari present an extension of a segmentation model that uses knowledge of a Tunisian modal structure in addition to the existing psychoacoustic segmentation rules. The output of the model is compared to the segmentation of an improvisation on the mode made by naïve and experienced listeners. As may be expected, the addition is particularly relevant to predict the experienced listeners’ perception, which highlights the sensitivity of the model to culture-specific musical characteristics.

Additionally, we have included two contributions by upcoming researchers from the lab of Marc Leman on embodied cognition. Embodied cognition provides another interesting perspective on the relationship between nature and culture, emphasising the alignment between cultural expressions and natural implementations. In the article by Deweppe and colleagues, this alignment is formulated as a need for music technological developments to connect in an intuitive and direct manner to “natural”

(or common) bodily expressions. Their solution to this problem is a user-defined mapping between gestures and multimedia output. The authors discuss the framework for developing interactive media systems and present several recent implementations.

Embodied cognition is also a focal point in the article of Kochman and colleagues. They investigate breathing patterns in a case study of operatic singing and emphasise the importance of investigating characteristics of singing that are closely related to the bodily production of the sound. These characteristics may inform about automatic bodily processes in addition to intentionally controlled processes related to expressive performance. They explore changes in respiration patterns in a performance when an audience is and is not present. The results concerning the effect of the presence of an audience are inconclusive, but the study presents an interesting avenue for further research.

Taken together, this special issue of JIMS highlights several of the innovative developments within interdisciplinary music research: empirical and computational approaches are growing in the investigation of non-western classical music, models are formulated that incorporate culture specific knowledge, biomusicology is an area that receives increasing interest, including arguments about the origins of music, and increased techniques to analyse animal song production, and finally the role of the body in music cognition is becoming increasingly apparent, which has important implications for music technology, but also music education and performance. The nature versus culture theme has been addressed by finding culture within biological behaviour and, the other way around, by finding nature in cultural behaviour.

*Renee Timmers and Matthew Woolhouse*  
guest editors

## Biographies

**Renee Timmers** is lecturer in psychology of music at the University of Sheffield, Sheffield, UK. Before joining the music department in 2009, she has held a number of postdoctoral positions within music, psychology and computer science departments in the USA, Vienna, Italy and the Netherlands, reflecting the interdisciplinary focus of her research and education. She obtained an MA in Musicology from the University of Amsterdam and PhD in Psychology from the Radboud University Nijmegen. She has published on expressive timing in music performance, emotional expression in performance of music, influences of emotions on music perception, and metaphors for pitch. Her research has been applied in the development of a visual feedback system for music performance.

**Matthew Woolhouse** was recently appointed as Assistant Professor in Music Cognition and Theory at McMaster University. Prior to coming to Canada, he was Research Fellow in Music Cognition at Wolfson College, Cambridge. He received a GGSM from the Guildhall School of Music, London, where he studied musical composition with Robert Saxton and piano with Frank May. In 2003 he received a distinction from the Faculty of Music in Cambridge for his Masters degree, and in 2007 he completed his Ph.D. thesis at Cambridge, entitled *Interval Cycles and the Cognition of Pitch Attraction in Western Tonal-Harmonic Music*.

Current projects include researching (1) the cognitive processes underpinning the historical development of Western music, (2) music, dance and social bonding, (3) music downloading, and (4) musical syntax and metre. His published works focus partly on *interval cycle proximity*, a perceptual grouping mechanism associated with the phenomenon of tonal attraction.

He is the principal psychologist for Nokia's *Psychology of Music Report*, a research initiative designed to evaluate current global music downloading practices. In addition to work as an accompanist, Matthew is an active composer whose music is regularly performed within Cambridge, as well as further afield.