

---

## Music, Meaning, & Language

---

### Music and Evolution: the Nature of the Evidence

*Ian Cross, Iain Morley; University of Cambridge, U.K.*

**Time:** Thurs 18 8.30 am, **Stream:** C **Proc. Page:** 416-419  
**Venue:** Room 327, Webster Level 3

In recent years the relation of music to human evolution has begun to be explored from many different perspectives. In large part, these explorations are motivated by the sense that an evolutionary perspective may be the best way to integrate an understanding of music as a biological phenomenon with an understanding of music as a component of culture. This paper is intended to identify the nature and the sources of the evidence in which explorations of the relations between music and evolution must be rooted in order adequately to address the concerns of musicology, anthropology, archaeology and cognitive science. The principal sources of evidence fall into six categories: functional, phylogenetic, developmental, physiological, ethnographic and archaeological. The first, functional, deals with the social and individual roles of 'music' across cultures, and provides the fundamental delimitation of what can legitimately be construed as 'musical'. The second, phylogenetic, is required to assess the degree of homology between human musical behaviours and 'musical' competences in other species. The third, developmental, provides indications as to the genetic component of sets of behaviours, while the fourth, physiological, sets the boundaries for the possession and exercise of 'musical' capacities and behaviours. The fifth, ethnographic, examines the roles and possible forms and artefacts of music in current lifeways and environments that are similar to ancient lifeways and environments, while the sixth, archaeological, is concerned with the 'hard' evidence of ancient artefacts and their find contexts. The evolutionary perspective on music needs to be examined and its evidentiary bases need to be made explicit in order to elucidate the relation of culture to biology and situate music within that relation as well as, critically, to delimit the implications of an evolutionary view.

### The Core Principle of Music

*Bjorn Merker; Royal University College of Music, Sweden*

**Time:** Thurs 18 9.00 am, **Stream:** C **Proc. Page:** 420-423  
**Venue:** Room 327, Webster Level 3

Most extant music does not employ the continua of frequency (pitch) and time directly in pattern creation. Rather, the continua are discretized into "pitch sets" and, in all rhythmic music, into metrically based durations with proportional values. Musical patterns composed of the discrete elements thus formed are perceived not as simple collections of unconnected elements, but as perceptual objects with identities of their own, capable of being combined into more complex patterns. Music thus exhibits all essential characteristics of a particulate system, as defined by W. Abler in relation to chemistry, genetics and human language. These systems generate infinite diversity by finite means, as first proposed with regard to human language by Wilhelm von Humboldt. The recognition of music as a member of this class of Humboldt systems has a number of implications for our understanding of the nature of human music, explored in this paper.

### The Imprint of Linguistic Prosody on Western Classical Music

*Aniruddh D. Patel, Joseph Daniele; The Neurosciences Institute, USA*

**Time:** Thurs 18 9.30 am, **Stream:** C **Proc. Page:** 424-424  
**Venue:** Room 327, Webster Level 3

Does non-verbal instrumental music bear the imprint of the intonation and rhythm of a composer's native language? Musicologists have long been interested in speech prosody as one influence on 'national character' in Western classical music. However, empirical data supporting this idea have been lacking. This has been partly due to the difficulty of developing and applying comparable quantitative measures to melody and rhythm in speech and music. This study sought to apply comparable measures to rhythmic patterns in English and French language and music, in order to determine if music reflects known prosodic differences between the two languages. English and French musical themes were subjected to a

statistical analysis of rhythmic structure using measures developed in the study of linguistic prosody. The values of these measures for musical themes were compared with values extracted from recent studies of speech rhythm. English and French musical themes were found to be significantly different in a statistical measure of rhythm which differentiates the rhythm of spoken English and French. Thus there is an empirical basis for the claim that spoken prosody leaves an imprint on the classical music of a culture.

### The Evolution of Music, Vocal Mimesis and the Problem of Deceptive Communication

*Elizabeth Tolbert; Johns Hopkins University, USA*

**Time:** Thurs 18 10.00 am, **Stream:** C **Proc. Page:** 425-425  
**Venue:** Room 327, Webster Level 3

#### 1. Background

Recent evolutionary proposals concerning the emergence of human representational capabilities underscore the development of social intelligence as a precondition for the development of language (e.g., Knight, Studdert-Kennedy, Hurford 2000). However, the development of social intelligence would seem to have precluded the invention of a communication system based on arbitrary signs, in that there would have been little motivation to tell the truth without adequate countermeasures (Zahavi and Zahavi 1997). To overcome the social barriers towards the development of reliable communication, and hence language, Knight (1998) and Power (1998) suggest that language coevolved with the "costly displays" of ritual, such as music, that guaranteed reliable communication through their illocutionary force.

#### 2. Aims

Starting from the suggestion that music guarantees arbitrary communication by its "costliness," this paper both questions the assumption of "costliness," and seeks a more precise and socially informed account of how music-like features of vocalicity might ground propositional language.

#### 3. Main Contribution

It is proposed that music is grounded in vocal mimesis, and thus references iconic and indexical processes of self-making that have roots in unfakable bodily experience. The socially sharable and emotional truth of such experience underlies the creation of socio-cultural truths, and reveals the bodily conditions of so-called "arbitrary" symbolic representation.

#### 4. Implications

On the meta-theoretical level, music is a symbol about the arbitrariness of language, the interdependence of emotional and propositional truth, and the foundation of representation in socially motivated mimetic gesture. It thus invites a reevaluation of polarized notions of the arbitrariness of language and the non-arbitrariness of music.

Furthermore, it suggests that the symbolic threshold is not defined by arbitrariness or conventionality per se, but rather by an appeal to the emotional and bodily conditions of representation that underlie sociality itself.