
SYMPOSIUM 9: Musicality, Communication, Gesture

Symposium: Musicality, Communication, Gesture

Stephen Malloch; University of Western Sydney, Australia

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What is music? There are as many answers to this question as there are people ready to answer it. However, more recently the question as to the nature of music is being addressed by those who regard music not as a 'special' ability, but rather as a particular instance of the more general human desire to communicate and to express emotion.

It seems timely to bring together researchers with a common curiosity about music and the expression of human intentions and emotions through time.

This symposium brings together complementary methods and ways of thinking about music, musicality, human gesture and communication. The symposium investigates the nature of musicality, its basis in the ways humans interact, the role of rhythm and timing, how emotion is conveyed in performance, the use of music as therapy, and the patterns of movement and meanings that exist in the physical expression of music's dynamics - dance.

Musicality: the Art of Human Gesture

Stephen Malloch; University of Western Sydney, Australia

Time: Sat 20 8.30 am, Stream: A Proc. Page: 143-146
Venue: New South Global, Webster Level 1

A person sits listening to music in a concert hall, dances in a nightclub, watches a ballet, plays the drums, chants a rhyme with a child, chats quietly with an infant, participates in a classroom discussion. It is argued here that all of these activities utilise the intrinsic human capacity for musicality.

The ability to express oneself musically is often seen as a 'gift' that needs to be nurtured. In this paper, however, musical ability is seen within the broader context of the use of pulse, quality and narrative in human communicative gestures of the voice and body. Musicality can thus be said to be concerned not only with sound and hearing, but with all humanly produced gestures of voice and body. Musicality is an embodied expression of the combination of motor pulse and emotional quality. Examples from the literature on parent-infant interactions, where linguistic meaning cannot hold communication, are presented as evidence for early intrinsic musicality. Examples of its use are also drawn from the literature on teacher-class communication and music therapy.

Lastly, new evidence is presented of the musical participation of a 3-month-old infant in a song sung by his mother. This participation, shown through measurements of the gestures of the infant's voice and arms, demonstrates a musical collaboration between mother and infant, clearly indicating that our ability to sympathise with the pulse and quality of a gesture is present in the first few months of life.

The Natural Science of Musical Time, and of Gestures of Musicality in Communication

Colwyn Trevarthen, Benjamin Schögler; University of Edinburgh, U.K.

Time: Sat 20 9.00 am, Stream: A Proc. Page: 147-148
Venue: New South Global, Webster Level 1

Research on perceptuo-motor coordination identifies general control principles for all non-reflex motor activity (i. e. all 'movements', whether consciously intended or not), including expressive gestures of communication. These are given ideal formulation in Lee's 'tau' theory, the theory of control of 'gap-closure'. The communication essential to human mental life is possible because motor 'images' that generate movements are perceived with sympathy. Intersubjective sympathy for expressive movements makes cultural cooperation possible, and research shows it is competent at birth and active in 'protoconversations' with imitation. The human brain has unique anatomical features at many levels that relate to expressive movements and their perception.

The study of live human communication has, in recent years, led

to a focus on our musical beginnings, defined as an innate 'communicative musicality' evident from infancy (Malloch, 1999). Academic research in the field of music is dominated by a western classical approach concerned with explaining the learning of a rare level of skill in performance, or with the creative genius of great composers in a literate tradition. The psychology of music has concentrated on the perception and cognition of musical structures and on the categories of emotion that may be stimulated by music.

In light of infant research it is necessary to examine music with a fresh perspective, not as the product of highly trained work of a gifted few, but as something that comes from innate talents common to us all. Such an approach requires a focus on the intentional and behavioral aspects of free musical activity, particularly in spontaneous social and communicative contexts.

Schögler chose to examine the temporal regulations created in jazz duets performed in conditions of separation where the musicians could only hear their joint performance, and not see one another. He calls these performances mediated by instrumental sound alone 'blind improvised duets' (Schögler, 1999).

Principles of Interactive Behavioral Timing

Bjorn Merker; Royal University College of Music, Sweden

Time: Sat 20 9.30 am, Stream: A Proc. Page: 149-152
Venue: New South Global, Webster Level 1

Interpreting the nature of mother-infant communication, and its musical content in particular, involves a number of issues in the timing of interpersonal exchanges. A communicative exchange may have as its goal a variety of outcomes or conditions which span a spectrum of temporal scales with different demands on the mechanisms of interactive timing. At one extreme lie constant ("tonic") conditions like fellowship and friendship cultivated by long-term exchanges over days, months and years. At the other lie fluctuating ("phasic") mutual engagements like play, conversation and music, with higher demands on mechanisms mediating interactive timing. Among these one may distinguish between reaction-time limited processes, and processes without such limitations, that is, predictive processes. These in turn are of two basic kinds, employing familiarity-based and pulse-based expectancy, respectively. A given interactive mode may avail itself of one or more timing mechanisms. Ordinary conversation presumably relies on a mix of reaction-time based and familiarity-based predictive timing, while the precise interactive timing of rhythmic music largely relies on entrainment to an isochronous repetitive pulse. Modes and mechanisms will be discussed in terms of their characteristic purposes, temporal scales, and pacing mechanisms, with the aim to clarify timing issues in relation to the musical and nonmusical content of mother-infant interaction.

Expression, Communication, Musicality

Alf Gabrielsson; Uppsala University, Sweden

Time: Sat 20 10.00 am, Stream: A Proc. Page: 153-156
Venue: New South Global, Webster Level 1

Different views on expression in music are briefly discussed, followed by reviews of selected pertinent research on emotional expression. Special consideration is given to children's perception and expression of emotion in music, further to perceived emotion in reduced stimuli, visual perception of emotion in musical performance, and to the relation between perception of structural and perception of emotional properties in music, as these topics have been investigated in recent studies. These subjects are then further discussed in relation to emotional communication, emotional response, and different conceptions of musicality.

Movement as Metaphor: the Construction of Meaning in the Choreographic Art

Shirley McKechnie; University of Melbourne, Australia

Time: Sat 20 11.00 am, Stream: A Proc. Page: 157-160
Venue: Room 332, Webster Level 3

The manipulation of elements in time for the purpose of creating works of art is common to practitioners in both music and dance. This paper discusses the creation of a contemporary dance work and the ways in which the abstraction of images in modes other than verbal language can present challenges for audiences. In music these issues are not usually clouded by notions of repre-

sentation as they are in dance. The author discusses the manipulation of abstract qualities in music and dance, presents images on screen and asks "What *can* dances communicate". Several important themes arise from the documentation in video and daily journals of a three-year research project funded by the Australian Research Council. The most encompassing of these are the ever-changing dynamic relationships that exist between the choreographer, the dancers, and the ideas and actions which are generated by their interchange. Communication in this context occurs in many modes and is central to the creation of the original work discussed in this case study.

Dance Performance – Rachel Jess, Victorian College of the Arts

Time: Sat 20 11.30 am

Venue: Room 332, Webster Level 3

Shaped Time: a Dynamical Systems Analysis of Contemporary Dance

*Catherine Stevens*¹, *Stephen Malloch*¹, *Rua Haszard-Morris*¹, *Shirley McKechnie*²; ¹*University of Western Sydney, Australia*; ²*Victorian College of the Arts, Australia*

Time: Sat 20 12.00 pm, Stream: A

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Venue: Room 332, Webster Level 3

Human non-verbal communication and gesture is epitomised in contemporary dance. We propose that contemporary dance is an exemplary instance of human movement that brings movement relations into relief from which general principles can be uncovered. The mathematical tools of dynamical systems theory (DST) are used to analyse and quantify the dynamics, such as dimensionality, of human movement. We apply the dynamical view to forces and patterns that underpin ideas uttered in movement and test the hypothesis that dynamical systems theory brings to the surface certain fundamental patterns that humans enjoy and understand. Nine points on the right arm of a professional choreographer were recorded using motion capture as the choreographer created and refined new movement material. Examples were also recorded where the choreographer was asked to use the same basic movement to express different emotions. The purpose was to investigate whether i) dimensionality differs between the initial and final versions of new phrases of movement material; and ii) dimensionality differs where similar movement is used to convey different emotions. Plots of point velocity and distance suggest that dimensionality is best captured by velocity measures. As a phrase of movement developed, dimensionality of distance varied more than that of velocity. Dimensionality of velocity was comparable when similar movements were used to express angry or happy affect. The long-term aim is to compare these "objective" mathematical measures of movement dynamics with observers' responses to complexity and emotion expressed in dance.

The Application of Music in a Children's Hospital

*Helen Shoemark*¹, *Jacinta Calabro*²; ¹*Royal Children's Hospital, Australia*; ²*Monash Medical Centre, Australia*

Time: Sat 20 12.30 pm, Stream: A

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Venue: Room 332, Webster Level 3

The hospitalised child faces significant events outside the experiences of normal life. This may mean dealing with conditions such as cancer, asthma, diabetes, cystic fibrosis, and dealing with the painful treatments. Patients become angry, non-compliant, withdrawn and depressed. The music therapist is referred to support the child in containing, exploring and expressing the self through singing, playing and listening to music.

This paper explores the significance of body posture, facial expression and anticipation within the music therapy relationship. These subtle forms of communication are used in parallel with musical expression by both therapist and patient to prepare, contain, engage and close the experience. The music therapist assesses the child's physical and psychological state as manifested in their body posture, facial expression and engagement with music. The music itself may be pre-composed or improvised, employing vocal and instrumental preferences and skills. Case studies will illustrate the key elements of this work.