

THE PULSE OF COMMUNICATION IN IMPROVISED MUSIC

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Background

The study of live human communication has, in recent years, led to a focus on our musical beginnings. These have been defined as an innate 'communicative musicality' evident from infancy. The co-ordination of behaviours in oral music such as folk and jazz; offers the researcher who studies the act of 'music making' a window to view the source of temporal competence and expressive intentional co-ordination.

Aims

To study the rhythmic co-ordination of sounds between jazz musicians improvising together and examine how 'shared pulse' is generated, negotiated and maintained.

Method

A quantitative method has been developed to examine the rhythmic co-ordination of sounds between two jazz musicians improvising together within 'blind improvised duets', that is improvisations mediated by instrumental sound alone. Micro analytic techniques developed in the study of mother-infant communication and the general principles of perceptuo-motor control have been applied to process the musical behaviour in digitally recorded sound.

Patterns of synchrony are determined after a measure of the changing loudness of sounds has been produced by acoustic analysis. Then graphical and statistical algorithms are applied to perform 'tau coupling analysis'. This measures the control of approach to points of synchrony, defined as simultaneous loudness peaks in musical sound.

Results

The findings give a quantitative description of 'shared control' in the musical dialogue, and offer a means of tracking emotional and/or intentional aspects of musical gestures, both for each individual and in their mutual co-ordination.

The interpretation of these findings in terms of structural elements of synchrony in the musical narrative lead to a new theory of 'shared pulse', and how it is generated, perceived and maintained through joint activity in expressive behaviour.

Implications for a general theory of narrative competence in collaborative musical performance are considered, and proposed as a basis for a new approach to the study of music.