

Rhythmic synchrony and mediated interaction: towards a framework of rhythm in embodied interaction

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Abstract Our everyday interactions increasingly involve both embodied face-to-face communication and various forms of mediated and distributed communication such as email, skype, and facebook. In daily face-to-face communications, we are connected in rhythm and synchrony at multiple levels ranging from the moment-by-moment continuity of timed syllables to emergent body and vocal rhythms of pragmatic sense-making. Our human capacity to synchronize with each other may be essential for our survival as social beings. Moving our bodies and voices together in time embodies a potent pragmatic purpose that of *being* together. In this synchrony of self with other, witnessing and being present become part of each other. There is growing research into how rhythm and synchrony operate in embodied face-to-face interaction and this provides parameters for investigating the relations and differences in how we connect and are socially present in the embodied and distributed settings, and understanding the effect of one setting upon the other. This paper explores the arena of research into rhythm in human interaction, musical and linguistic, with a focus on the movements of body and voice. It draws together salient issues and ideas that would form the basis for a framework of rhythm in embodied interaction.

Keywords Rhythm · Interpersonal synchrony · Entrainment · Body moves · Mutuality · Sense-making · Floating intentionality · Social presence

1 Introduction

The inspiration for this paper comes from two sources. The first is my research in rhythm in human communication and mediated interaction. Rhythm is considered here primarily in its sense as *flow* (from its etymology in *rhythmos* which is related to *rein* that in turn means *flow* (OED)), and as a quality of life. Various definitions of rhythm from psychology, music, kinesics and anthropology are explored in this paper, and they share a sense of *flow*. My interest in rhythm has been stimulated by the growing research on understanding how our bodies move with voice and how voices move with each other in synchrony, and the role of rhythm in facilitating human communication and shaping social presence. The second motivation is to develop a conceptual framework of rhythm in embodied interaction. The movement of body and voice in time has an affect on how we engage, make sense of each other, and transfer information. This is explored through three inter-related and sometimes overlapping notions of entrainment, synchrony and rhythm. Rhythmic synchrony is fundamental to human sociality (Cross 2006) and sense-making (Gill 2007), and this suggests that the distributed setting be investigated in this light to understand the impacts on human communication. The concept of entrainment has been of particular interest to music researchers as it provides a framework for explaining and measuring how we temporally perceive music, and how we are able to move in time together with music.

The role of rhythm in facilitating sense-making in human communication lies in prior research findings that information transfer is managed with prosodic and rhythmically synchronized movements of body and voice. A particular focus is on pragmatic information. Pragmatic information in this context denotes how we let each other

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