

“Does not compute”? Music as real-time communicative interaction

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Abstract Mainstream operationalisations of music in contemporary digital culture tend to take forms that fit with Western folk-theoretic conceptions of music: as discrete sonic entities—songs, pieces, works—that fall within an autonomous domain of human experience, that have determinate structure and that have both affective and exchange value. This perspective is problematised in alternative digital manifestations of music as constituted in and through interaction, in which music is emergent from interactive processes that are computationally mediated. This alternative digital approach fits with broad conceptions of music that are grounded in ethnomusicological accounts and that have increasing weight in the cognitive sciences, in which music is understood and explored as a communicative medium. This paper will outline some of the possibilities, potentials and problems for digital approaches that are likely to arise in operationalising music as communicative interaction.

Keywords Music · Interaction · Speech · Digital representation · Phatic communion

1 Contemporary digital culture and Western folk-theoretic conceptions of music

In this paper, I shall be arguing that the ways in which music has been conceived of and addressed in the digital domain have limited the scope of computational applications to music. In general, computational approaches have

dealt with music as an autonomous domain of human thought and behaviour based on complexly patterned sounds that are engaged with through listening for their emotional or hedonic value—music is manifested as sonic objects or entities that have affective, individual and (potentially) commercial value. Music thus appears as an aural commodity, representable in digital terms directly (as audio) or symbolically.

This approach to music fits with Western “folk theories” concerning music and its powers in Western culture: theories that are not intended to be definitive or to provide foundations for scholarly analysis, but rather that arise informally to guide action (see Walton 2007). In Western folk theories, music is complex, humanly produced, expressive sound (Feld and Fox 1994, p. 28), engaged with through listening because of its capacity to move our emotions (see McLucas 2010, Ch 4) rather than for any message it might convey; it is produced—composed and performed—by the few, and the predominant means through which the many engage with it is listening; and it exists as works, pieces or songs, entities that have exchange value as commodities.

Within the principal areas in which digital approaches to music are currently represented—audio representation and manipulation, music information retrieval, audio-to-symbolic translation and vice versa—music is conceived of and computationally represented in terms of objects (pieces, songs) that may be decomposed into smaller objects (sections, phrases, motifs, rhythms, pitches). The digital representation and manipulation of music as complexly patterned sound still pose interesting challenges after more than 50 years of research and development. Applications and developments of music information retrieval (MIR) as outlined in Downie et al. (2009) are only really viable in respect of discrete entities—works, pieces or songs,

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