Human properties

Human movement - Is related to music on a number of different levels as evidenced in current research.
- Speed of a person can be determined from footstep rate and sound which is related to musical tempo.
- Different rhythmic patterns are related to different movement patterns (Gabrielson 1973).
- Dancing is afforded when body resonance and musical tempo coincide (Toiviainen 2011).
- Musical pulse is in the same range as walking and running (van Noorden and Moelants 1999).
- Articulation similar to foot contact time while walking and running (Bresin and Battel 2000).
- Final ritardando similar to stopping from running (Friberg and Sundberg 1999).
- Tempo curves in phrasing similar to hand gestures (Juslin & Huron 2011).

Thus, it is logical to assume that we to analyse musical rhythm in terms of motion patterns relating to human gestures and locomotion patterns, possibly using mirror neurons and their interaction with our experience of self-motion as well the motion of other people.

Energy - relates to the physical effort used to produce the sound. For example, we seem to estimate perceptual loudness not only from the sound level but also in some circumstances also from the physical work needed to produce the sound (Ladefoged and Kincney 1963, Ericsson and Traumiller 2002).

Dynamics in music (related to effort) can be estimated from timbral properties of the sound to some extent (Fabiani and Friberg 2011).

Intention - What is the sender trying to communicate?

Emotion - What is the mood of the person/music? The emotional aspect is central for both listeners and musicians (Juslin & Laukku 2004)

The communication of emotion in music is quite well investigated (see e.g. Gabrielsson & Lindström 2010). The mechanism seems to be that of a rhythm that can be related to above-mentioned movement/ rhythm, energy, as well as pitch. Further relevant perceptual features vary in a similar way as in speech (Juslin & Laukku 2003) and as the motion features in gestures (Dahl & Friberg 2007) expressing the same emotion.

Skill - Is someone that knows his profession? This could mean different things such as technical ability or expressive ability. Apparently very important aspect when judging musicians.

Authenticity/sincerity - Can we trust this person/musician?

Conclusions and discussion

By analysing music listening using an ecological perspective, the abovementioned features focus on rather brief perceptions corresponding to an everyday/causal music listening (c.f. Plazak & Huron 2011). Aspects such as long-term structure or complex melodic/harmonic patterns are less likely to be perceptually processed in this way.

References


