Using Zygonic Theory to Model Expectations in Repeated Melodic Stimuli

Hayley Trower[1], Adam Ockelford[2], Arielle Bonneville-Roussy[3]

University of Roehampton, London, UK

[1]`trowerh@roehampton.ac.uk`, [2]`a.ockelford@roehampton.ac.uk`, [3]`a.bonnevilleroussy@roehampton.ac.uk`

ABSTRACT

Background

The disruption of melodic expectations can generate emotional pleasure even when the listener is familiar with a musical piece and knows what is coming next. The zygonic model of musical understanding (Ockelford, 2012) proposes that this is a result of the interplay between different forms of expectation that arise from a) previously heard musical structures encoded schematically that provide a general indication about the future, b) current musical structures that offer a secondary source of general implication, and c) previously heard musical structures encoded veridically, providing specific knowledge about upcoming events, however more empirical evidence is required to support this idea within the context of musical repetition.

Aims

The first aim was to determine the degree of interaction between a), b), and c) during listening to familiar music by measuring expectations in response to a repeating melody. The second aim was to incorporate those measurements into a model of musical understanding that considers 'rehearing' musical pieces, by extending the theoretical underpinnings set out by Thorpe et al. (2012), and introducing a revised version of the zygonic model.

Method

Forty-three adult listeners were presented with a twenty-six note diatonic piano melody four times during each of two sessions. Repetitions of the (initially novel) stimulus were separated by a distractor. Participants made note-by-note expectancy ratings for each stimulus presentation by using a touch sensitive apparatus known as a CReMA (Himonides, 2011) which transmits MIDI data to a connected laptop.

Results

Analysis is ongoing. Initial results show that although schematic expectations are consistent with each stimulus repetition, veridical expectations are affected incrementally, representing an increase in perceived familiarity with each stimulus repetition. Furthermore, the relationship between schematic and veridical expectations appears to be 'reset' during the period of rest.

Conclusions

A discussion will be couched in relation to the revised zygonic model of expectation, providing insight into the way that familiar music retains moments of expressivity. Results will contribute towards a comprehensive model of expectation that uniquely incorporates the common behaviour of repeated listening to the same pieces of music.

Keywords

melodic expectation; zygonic; perception; cognition; repetition

REFERENCES

Ockelford, A. (2012). *Applied musicology: using zygonic theory to inform music education, therapy, and psychology research.* Oxford University Press.

Thorpe, M.., Ockelford, A., Aksentijevic, A. (2012). An empirical exploration of the zygonic model in music. *Psychology of Music,* 40(4), 429-470.

Himonides, E. (2011). Mapping a beautiful voice. *Journal of Music, Technology and Education,* 4(1), 5-25.