

Hearing the Humanities: Sonifying Steele's Shakespeare

Iain Emsley^{1*}, Alan Chamberlain² and David De Roure¹

^{1*}Oxford e-Research Centre, Oxford University, UK, iain.emsley@oerc.ox.ac.uk

²Department of Computer Science, University of Nottingham, UK

Abstract— We present initial work that explores the use of sonification to represent Joshua Steele's symbolic notation. This provides a manner of overhearing a previous performance and testing the method's reproducibility and uncertainties within it.

I. INTRODUCTION

Joshua Steele [1] used a symbolic notation to mark-up performances of Shakespeare. His methodology is briefly discussed before presenting an example of a Web Audio sonification achieved using a fragment of Steele's work before discussing issues arising from such a historical notation and reproducibility.

II. JOSHUA STEELE

An active member and elected a Fellow of the Royal Society of the Arts, Joshua Steele (c1700-1796) wrote the "Essay Towards Establishing the melody and measure of speech" in 1775 [1], revised in 1779 [2]. The books provide a record of his interpretation of the performance in symbolic form using musical notation augmented with extra symbols. Using melody, the accent or force, and rhythmus, the quantity and emphasis, Steele also captured the volume and the way the voice slides upwards or downwards, as can be seen in Fig. 1.

III. METHODOLOGY

A model was created for the Web Audio sonification. The bass clef, which we assume is linked to the actor's perceived pitch, creates a frame map the notes to MIDI numbers by hand. Indicators for related time and loudness are stored with the notes. The start and endpoints for sliding pitches, shown by the accents, defined the way in which the pitches given slide when spoken. The MIDI note was converted into frequencies in the creation of a JSON file. Web Audio is used to present the data as sound. The bars and notes provides clues as to the timing of the syllables and words but no 'actual' time scheme is provided. [3] represented the notes as MIDI in the ELVIS project as a way of analyzing the notation. This project uses sonification to provide an impression of a performance of the text, viewing the text as notes that could be used. Although we cannot reproduce the

performance, a glimpse of it is achieved that may support other approaches, such as theatre studies. Volume and time buttons allow for two of the uncertain variables to be altered.

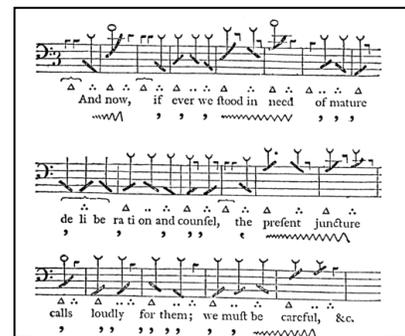


Figure 1. Example Joshua Steele's symbolic notation.

IV. DISCUSSION

Future work will address the challenges of timing, as relating to the assumptions made and Steele's solution of using various times.

V. CONCLUSION

This experimental Digital Humanities [4][5] work demonstrates that the notation might be used to understand the text from the dominant linguistic approach and shows that sonification could be a valid Digital Humanities technique.

REFERENCES

- [1] Joshua Steele. *An Essay Towards Establishing the Melody and Measure of Speech to be Expressed and Perpetuated by Certain Symbols*. 1775
- [2] Joshua Steele. *Prosodia Rationalis*, J. Nichols: and sold by T. Payne and Son; B. White; and H. Payne. 1779
- [3] R. M. Winters and J. E. Cumming, "Sonification symbolic music in the ELVIS project," in *Proceedings of the 20th International Conference on Auditory Display*, New York, NY, June 2014.
- [4] Alan Chamberlain, et al. (2017) "Audio Technology and Mobile Human Computer Interaction: From Space and Place, to Social Media, Music, Composition and Creation", In the *International Journal of Mobile Human Computer Interaction (IJMHCI)* V9/4, pp. 25 - 40
- [5] David De Roure, et al. (2016) Experimental Digital Humanities: Creative interventions in algorithmic composition on a hypothetical mechanical computer. In: DMRN+11: Digital Music Research Network, December 2016

*This research was supported through the following EPSRC project: Fusing Semantic and Audio Technologies for Intelligent Music Production and Consumption (EP/L019981/1). With special thanks to Pip Willcox