

Composition title: *phetolo* (2019)  
Durations: 8 minutes 57 seconds (Version 1)  
Composer: Miles Warrington  
Technical requirement: 6 independent channel sound system  
World Premiere: University of Pretoria Music Festival, 2019

### **Introduction**

*phetolo* (2019) is a work inspired by various social, knowledge and technical factors. It was commissioned by the Dean of the Faculty of Humanities, University of Pretoria, as part of the Humanities 100th Anniversary Celebrations in 2019. The Northern Sotho word for ‘transformations’ is *phetolo*. Transformation as a central theme in the current academic and social climate is a critically important activity that seeks to recognise the inequalities of knowledge and social systems of the past and address them with positive change. In the compositional practice of generating effective material in the discourse of acousmatic, electroacoustic and soundscape art-music forms, the ‘transformation’ of material through various techniques allows us to establish narrative and aesthetic contexts.

### **Composition**

The expression of a sound wave, or any signal varying over time, as the sum of its constituent sine waves, is known as the *Fourier transform* of that signal. The function of the signal varies over time, and gives us the means to visualise or express that sound. Images too, can be represented in this way by creating visual graphs of collections of sine waves to form a *Fourier transform* of the physical image from a greyscale photograph.

Various high definition photographs of carefully selected spaces around the University of Pretoria, were taken in 2018 and were used to generate information in this manner using *Matlab*, assisted by Dr Harry Wiggins from the Department of Mathematics. Applying this information in useful ways compositionally, such as frequency modulation synthesis, additive synthesis and so on, generates much effective material that in combination with field recordings of various sounds and their ‘transformations’ from the spaces the images represent, would underscore a musical narrative that seeks to reveal the ‘transformative’ possibilities from space to sound. The current work made public here, finds itself in a version undergoing some revision and extension into a larger work with visual projection.