Motivation

Musicological argument has traditionally been communicated in writings that are textually and linear, and occasionally illustrated with figures. Yet they are almost always concerned with diverse subjects and pieces of evidence, each potentially exemplified by different media, and each potentially a springing point for digression and exploration of the author’s argument.

While the activities required to explore the referenced materials may not be linear, this is neither embodied in nor enabled by any traditional medium of communication.

The musicological essay is a guide and a starting point for exploring the app. All iterations in the opera can be browsed as score, text or orchestration. Interactive views in the app are generated directly and dynamically in the browser from this knowledge graph using novel open-source frameworks. Prof. Laurence Dreyfus has written an article exploring the sophisticated way in which Richard Wagner treats recurring themes (motif iterations) in his operas. Taking Lohengrin (1848), the story of a Grail knight coming to the aid of a damsel in distress, he shows how one motive is transformed, reflecting its role in the drama.

We have built the Lohengrin TimeMachine, a tablet-based interactive web app which acts as a companion to the article, making it easier to explore the development of musical and dramatic ideas. We also include a video introduction written and presented by Prof. Dreyfus.

Implementation

From the viewpoint of music informatics, we encode the musicologist’s analysis of the opera, along with its relationships to the multimedia materials, using Linked Data as an independent, repurposeable Research Object, or Digital Music Object. Interactive views in the app are generated directly and dynamically in the browser from this knowledge graph using novel visualisations, which enable the user to navigate all possible paths through the evidential multimodal materials.

The application is built with a new version of the MELD (Music Encoding and Linked Data) [1,2] framework. MELD traverses Linked Data graphs to select and filter information, with components to create and retrieve annotations, and display and interact with music, text, graphics and audio and video. MELD is written in Javascript and Python, with resources using standards including MEI [3], TEI, the Music Ontology and Web Annotations [4]. By building on Web standards and providing modular libraries, we provide capability for supporting a wide range of applications.

An Interactive Multimedia Companion to Wagner’s Lohengrin

Encoding and visualising a motivic study

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