How Scalar Was Used

I created HTML pages in Scalar for each of 46 contributed summaries, created additional pages defining each of the subject headings by which the students tagged them, and linked them to the summaries. These headings included a finite list of thirteen predefined Topics/Themes, and longer lists for the Persons, Works, and Years related to each summary. To impose some structure on the summaries. These headings included a finite list of thirteen predefined Topics/Themes, and longer lists for the Persons, Works, and Years related to each summary. To impose some structure on the knowledge base comprising written summaries of relevant literature and written abstracts of individual research projects. Students gave brief, illustrated in-class presentations on assigned journal articles and book chapters, then provided written summaries tagged with subject headings related to topics, significant persons, and important works. They also conducted personal research and completed traditional papers. The core of the knowledge base includes 46 such summaries—a mosaic of scholarly commentary on aspects of musical theater history in Britain and the USA. Students were also tested on familiarity with the contents of all summaries. My desire to visualize the resulting connections in an interactive online environment led me beyond the use of a blog or digital repository to the discovery of Scalar 2.

Using Scalar 2

As a digital platform for visualizing and analyzing large bodies of digital scholarly literature, Scalar 2 is a valuable tool for musicology seminars. It provides several additional ways in which connections between pages can be visualized, and allows for comments by site visitors. No special programming or scripting knowledge is required.

The Scalar platform can also display all tags as a word-cloud where the larger, darker, more central terms are the most frequently referenced. All items in all visualizations are clickable to open the documents to which they refer.

About the Seminar

Eleven music graduate students participated in my Advanced Topics in Music History seminar entitled “Anglo-American Operetta and Musical Theater. Two Great Songs ‘Trilogy to Show Boat’” (MUSIC 730, Spring 2017). A major feature of the learning process was my construction of a knowledge base comprising written summaries of relevant literature and written abstracts of individual research projects. Students gave brief, illustrated in-class presentations on assigned journal articles and book chapters, then provided written summaries tagged with subject headings related to topics, significant persons, and important works. They also conducted personal research and completed traditional papers. The core of the knowledge base includes 46 such summaries—a mosaic of scholarly commentary on aspects of musical theater history in Britain and the USA. Students were also tested on familiarity with the contents of all summaries. My desire to visualize the resulting connections in an interactive online environment led me beyond the use of a blog or digital repository to the discovery of Scalar 2.

Fig. 4. A “force-directed” visualization of four selected pages and their connections. Here, the topic Ethnic Caricature is shown with its connection to the summary of an article about 19th-century “Uncle Tom” Shows, and the article’s connection to the author Harriet Beecher Stowe and to her novel Uncle Tom’s Cabin. The novel was published in 1852 on a historical timeline. Each element of the visualization is a clickable link to the page it represents. The force-directed visualization can also be used to display all 200+ pages and their direct connections to each other simultaneously; it takes approximately ten seconds for the elements to populate the diagram as they jostle each other for position. The resulting tangled mass of connecting lines challenges comprehension, albeit the animation is fun to watch. The grid visualization in Fig. 3 above is better for viewing part-to-whole; Scalar’s visualization tools also allow for a radial diagram where each page is a sector of a circle; this particular graphic format is also unwieldy for more than thirty or forty pages.

Fig. 3. Below, left, the page for the tag (subject heading) Satire/Parody showing links to the literature summaries which it describes; right, a grid view which shows that this selected page connects directly to 17 other pages out of the 200+ in the entire site. Hovering over any block in the grid displays the title of the page it represents; clicking on it selects it and displays its connections (in addition to those of any previously selected blocks); by clicking a title’s “visit” button one leaves the visualization and opens the desired page.

Fig. 2. A “force-directed” visualization of four selected pages and their connections. Here, the topic Ethnic Caricature is shown with its connection to the summary of an article about 19th-century “Uncle Tom” Shows, and the article’s connection to the author Harriet Beecher Stowe and to her novel Uncle Tom’s Cabin. The novel was published in 1852 on a historical timeline. Each element of the visualization is a clickable link to the page it represents. The force-directed visualization can also be used to display all 200+ pages and their direct connections to each other simultaneously; it takes approximately ten seconds for the elements to populate the diagram as they jostle each other for position. The resulting tangled mass of connecting lines challenges comprehension, albeit the animation is fun to watch. The grid visualization in Fig. 3 above is better for viewing part-to-whole; Scalar’s visualization tools also allow for a radial diagram where each page is a sector of a circle; this particular graphic format is also unwieldy for more than thirty or forty pages.

Fig. 1. Screen shot of homepage at the Scalar server for the seminar. URL = scalar.usc.edu/works/anglo-american-music-theater-v-1

Fig. 5. One of the student-written summaries of scholarly literature from the seminar’s Scalar book, in this case his summary of an article on musical theater historiography. At the end are the tags for associated Persons, Topics, and Works; each is a hyperlink to further information.