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Anduin™

Transforming manuscripts from *The Lord of the Rings* into a digital experience

For Tolkien enthusiasts, the year 2022 was one of great significance. The culmination of years spent digitizing and arranging Marquette University's collection of print manuscripts of J.R.R. Tolkien's *The Lord of the Rings,* and the development of a digital portal to organize the metadata around the digital artifacts, occurred in perfect timing with an exhibition of manuscripts of Tolkien's work that was greatly enjoyed by scholars and visitors from around the world.

History

A little should be said about how Marquette University came to be home to the precious manuscripts of *The Lord of the Rings*. Any account would begin in late 1956 with the enterprising librarian, William Ready, who only earlier that year had become director of the newly built Memorial Library, and his timely selection of his friend, and London book dealer, Bertram Rota, to act as Marquette's agent in pursuing Tolkien's manuscripts for the university. Rota proved to be a persuasive negotiator, emphasizing the use Marquette would make of the manuscripts and its Catholic identity, which resonated with Tolkien, a convert to the faith. In May 1957, Tolkien sold the manuscripts for four of his works of fiction to Marquette. Although much material for *The Lord of the Rings* arrived in Milwaukee the following year, by 1965 it was evident that additional manuscripts remained in Tolkien's possession.

When Christopher Tolkien became literary executor upon his father's death in 1973, he took possession of the manuscripts for *The Lord of the Rings* that remained in England and relied upon them as well as the manuscripts at Marquette, mailed to him in photocopy form, as source material for his monumental multi-volume work, *The History of Middle-earth*. As Christopher gradually finished these volumes, he sent the remaining manuscripts to Marquette in batches, where they increased the collection by 50 percent, to more than 9,000 pages, and ultimately completed the transaction initiated thirty years before.

Once the manuscripts were together in one place, the challenging task of managing the two sets of papers which had been arranged differently began. The early set was arranged by book and chapter and the latter set chronologically by order of creation. Complicating matters further was the fact that reorganizing the folders of manuscripts already at Marquette would change shelfmarks that had been cited in scholarship and exhibitions. These

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challenges, combined with a shortage of staff time and resources, meant that many years would pass before a concerted effort could be made to integrate the papers.

Opportunities presented by digitization

If the scholarly dependencies on each arrangement of the manuscripts were to be preserved by any navigational system harmonizing both arrangements, it would have to be broader in scope, yet capable of displaying data in chronological order (linear) as well as book and chapter order (multi-dimensional). These goals only became more achievable after the digital photographing of the manuscripts in 2016 and the thoughtful arrangement of them by Tolkien scholar and Marquette alumnus, John Rateliff, in a working map that came to be called the River.
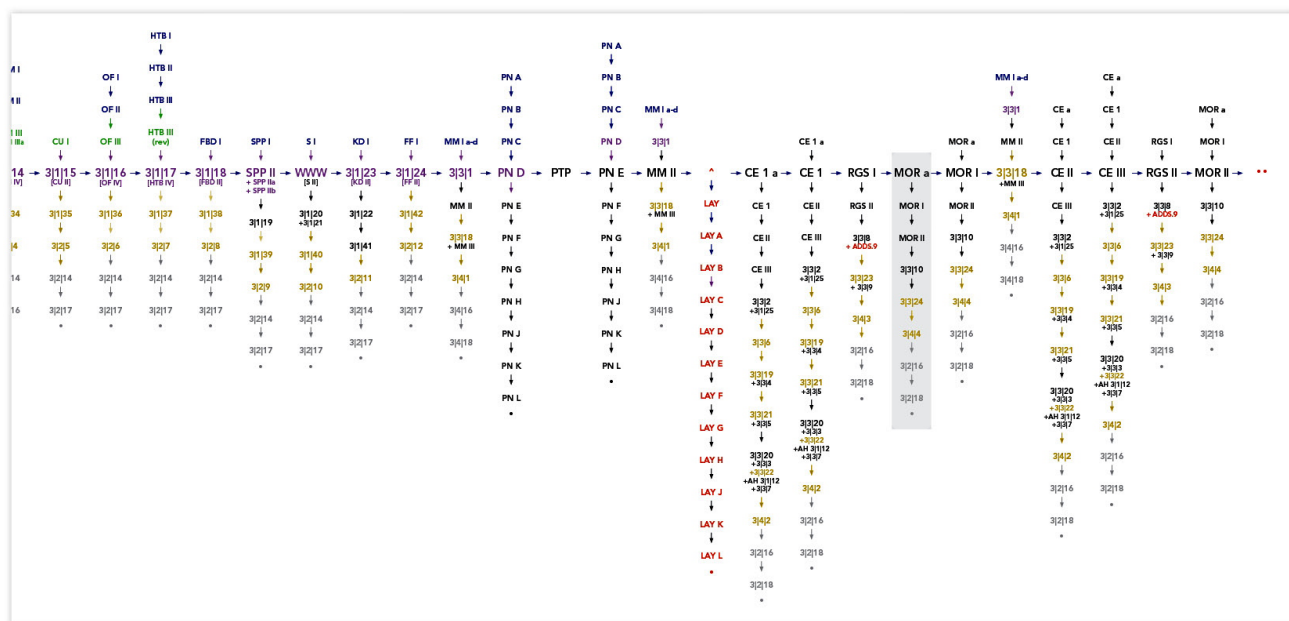
A sample section of the River where the highlighted draft represents The Muster of Rohan. The printed version of The River exceeds 20 feet in length.

The River represents a herculean effort to map the drafts and isolated fragments of the collection, establishing connections between the manuscript pieces, in terms of both their emergence during the long gestation of *The Lord of the Rings* and their place within the evolution of individual chapters. Rateliff, aided by his own long history studying the manuscripts as well as by access to the rich body of notes and earlier correspondence between Christopher and Marquette, performed the yeoman's work of fitting the pieces together, thus laying the groundwork for a digital system that will be continuously fine-tuned in coming years as other scholars interact with the manuscripts.
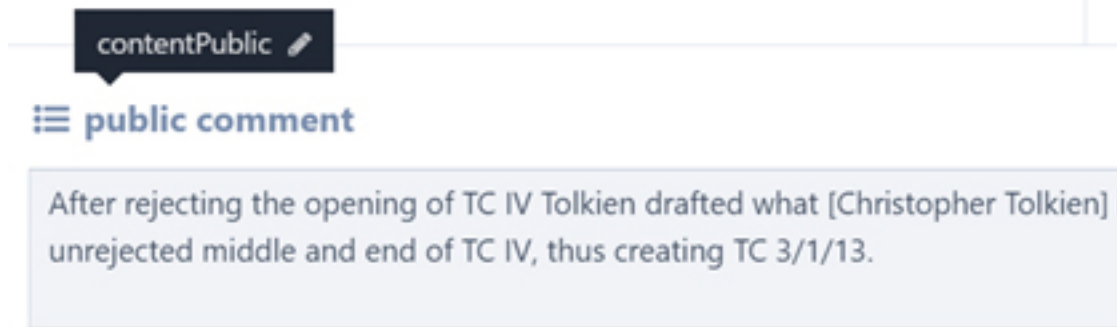
Our choice of ProcessWire

Creating access to a digital collection as complex as Anduin™ (whose namesake is the Great River of Middle-earth that runs east of the Misty Mountains),[1] and based on Rateliff's River, required careful thought about which type of content management system (CMS) would work best. The new system would require navigation by both the shelfmark numbering and by the order in which J.R.R. Tolkien wrote each draft. Internally, the system would need

to store each draft by its shelfmark number. Each draft would then be numbered (using a ProcessWire field) in a way that signifies what order they were written in, following the flow of the River. Many traditional content management systems, like WordPress, Drupal, and Omeka, do not easily offer flexibility for complex relationships between various parts of the system, so we opted for the ProcessWire CMS. ProcessWire gives the developer a higher degree of flexibility in a manner that traditional platforms cannot easily provide. It allows for more complex relationships to be created between different pages, allowing us to create the flow of the River.

Brief structure of Anduin™

Anduin™ relies heavily on the use of ProcessWire's fields and parent/child relationships to create the basic structure of the application. Using ProcessWire, the developer can define different types of content, using fields, that can then be used within each page template.

contentPublic ✏

≡ public comment

After rejecting the opening of TC IV Tolkien drafted what [Christopher Tolkien] i
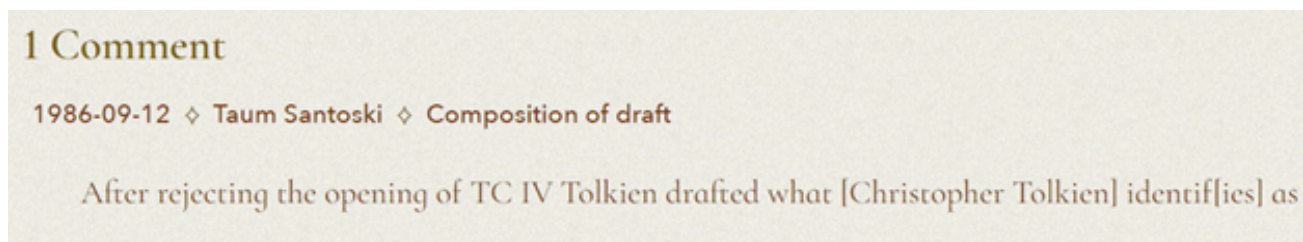unrejected middle and end of TC IV, thus creating TC 3/1/13.

Above is a sample of a field being displayed in the ProcessWire CMS. Here, the contentPublic field is being used for the Public Comment inside of the Comment template.

Once the field has been defined and assigned to a template inside of ProcessWire, that field can be used within the PHP and HTML code being used for that page template.

```
"<div>" . $comment->contentPublic . "</div>"
```

The contentPublic field can then be called within the PHP code as shown above. As you can see, it can be inserted within any HTML code.

Having the ability to place content from a ProcessWire field anywhere within the PHP code allows the developer to create a highly customizable user interface.

1 Comment

1986-09-12 ◇ Taum Santoski ◇ Composition of draft

After rejecting the opening of TC IV Tolkien drafted what [Christopher Tolkien] identif[ies] as

Above is a sample of the contentPublic field being displayed on the user side of Anduin.

This type of content management system can be a tremendous advantage to digital scholarship projects that have large, complex relationships within the data. ProcessWire also offers an

advantage if a project requires a more customizable interface that traditional content management systems cannot offer. It allows for data to be displayed in a more customized UI than needing to rely on prebuilt themes and templates from other content management systems.

Accomplishment of goal

Once completed, Anduin™ will allow researchers to navigate through digital pages of *The Lord of the Rings* by Shelfmark, Book-Chapter, Node, Draft, Main Current, and Passages. Of all the navigation options, Passages is most remarkable. Passages allows a user to begin with a familiar LOTR phrase, such as, "All that is gold does not glitter, not all those who wander are lost," and look back through the related galleys, typescripts, and holographs (hand-written), to the first time that phrase appeared in the work.
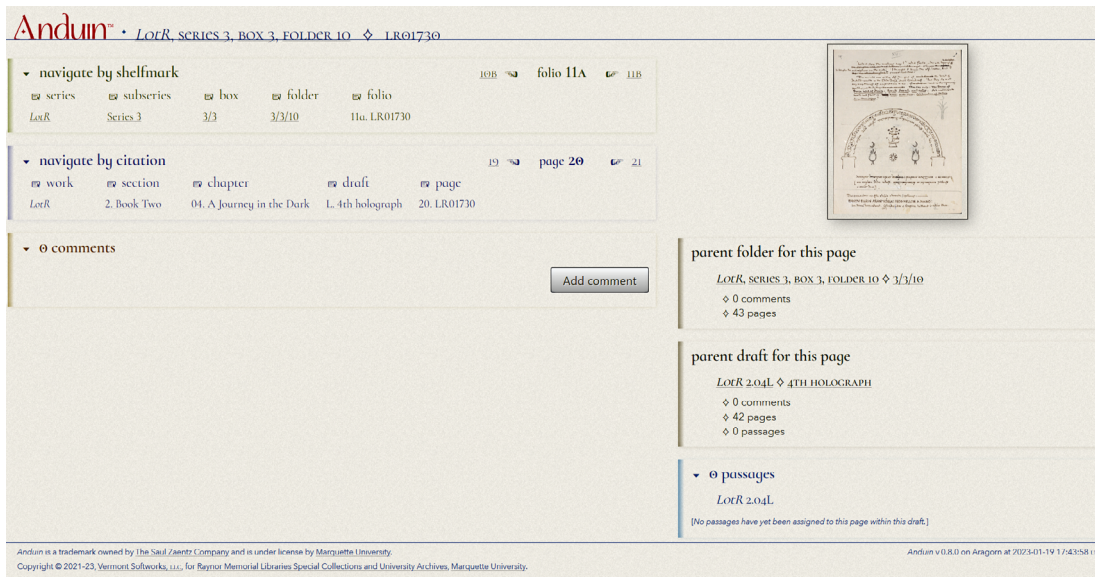
Anduin™ user interface with sample image and metadata.

Exhibition and availability of Anduin™ to Tolkien scholars

Tolkien scholars and visitors to Marquette University's Raynor Memorial Libraries Archives were allowed to use the alpha version of Anduin™ for the first time beginning August 19, 2022, the opening day of the J.R.R. Tolkien: the Art of the Manuscript exhibition,[2] a collaboration between the libraries and the Haggerty Museum of Art. The exhibition considered Tolkien's work in terms of both the materials that Tolkien studied as a medieval philologist and the manuscripts that he created while developing his collected writings on Middle-earth. Founded on Marquette's J.R.R. Tolkien Collection, the exhibition also included items borrowed from other repositories, including a significant number of Tolkien manuscripts and artwork from the Bodleian Libraries at the University of Oxford. Many of the 147 items in the exhibition had not previously been exhibited or published. J.R.R. Tolkien: The Art of the Manuscript ran from August 19 to December 23, 2022.

Other works for the exhibition

While many organizations, scholars, and staff combined efforts to prepare the artifacts for the exhibition itself, some additional work was required to create a large touchscreen kiosk exhibiting twelve well-known passages from *The Lord of the Rings*. Like the navigational

method employed for Anduin™, the kiosk provided navigation from a popular phrase back through related galleys, typescripts, and holographs, to the first time that phrase appeared in the work.

Full version of exhibition kiosk designed for a large touchscreen.

To prevent crowding in front of the single kiosk, we also created a mobile version of the exhibition kiosk designed for use with iPads which was designed better usability on a smaller screen.
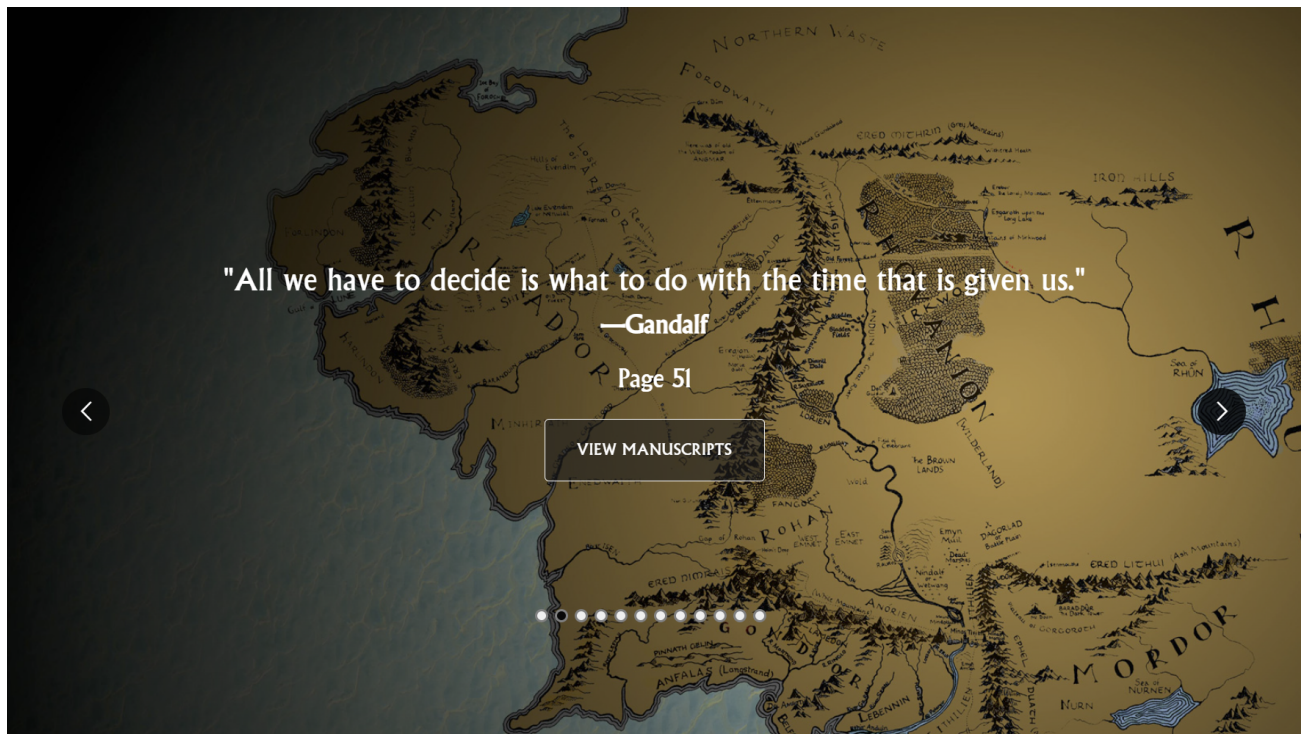
Mobile version of exhibition kiosk designed for use on iPads.

Conclusion

Participation in an extraordinary event like the development of Anduin™ and preparations for the J.R.R. Tolkien: The Art of the Manuscript exhibition gave those involved the opportunity to bring together a world-class collection of Tolkien artifacts and demonstrate how technology can provide new perspectives on the creation of great works of literature. Many scholars and Tolkien enthusiasts who have come to Milwaukee to enjoy the exhibition have stopped by the Raynor Memorial Library Archives to use Anduin™ (which includes images of the drafts). Many have provided insights on the new way of navigating through the massive Tolkien corpus. Their insights, largely positive, have provided valuable feedback for future improvements to Anduin™ and assurance that the development of the system is on the right path. ✍

Note

1. *Anduin* is a trademark owned by Middle-earth Enterprises, LLC and is used under license by Marquette University.
2. "J.R.R. Tolkien: The Art of the Manuscript," exhibition, Haggerty Museum of Art, Marquette University, August 19–December 23, 2022, https://www.marquette.edu/haggerty-museum/tolkien.php.