



NAVIGATING A SEA OF TEXT: TOPIC MAPS AND THE POETRY OF ALGERNON CHARLES SWINBURNE

OVERVIEW

Topic Maps, including their XML representation, XML Topic Maps (XTM), are powerful and flexible metadata formats that have the potential to transform digital resource interfaces and support new discovery mechanisms for humanities data sources, such as large collections of TEI-encoded literary texts. Proponents of topic maps assert that topic map structures significantly improve information retrieval, but few user-based investigations have been conducted to uncover how humanities researchers and students truly benefit from the rich and flexible conceptual relationships found in topic maps.

The poster provides an introduction to Topic Maps and how a collection of TEI-encoded literary texts, specifically the Swinburne Archive <<http://swinburnearchive.indiana.edu/>>, benefits from the use of topic maps. The poster will also provide an overview of the methodology used for the comparative usability study that was designed to assess the strengths and weaknesses of a topic map-driven interface versus a standard search interface. The interfaces that were presented to users will be demonstrated along with key findings from the usability study. Lastly, design alternatives and current implementations based on the usability findings will also be presented.

The results of this study are intended to move the discussion of topic maps in the digital humanities beyond demonstrating the novel to providing evidence of the impact of Topic Maps on humanities research and their extension of existing classificatory structures. We hope to provide those who are implementing Topic Maps or similar metadata structures in digital humanities resources with design recommendations that will ensure successful user interaction.

XML TOPIC MAPS

Topic maps are a metadata format that provides the combined functionality of indices, glossaries, and thesauri. XML Topic Maps (XTM) were standardized by the International Standards Organization in 2000 (ISO/IEC 13250). Topic Maps provide powerful mechanisms for navigating large collections of interconnected digital objects, including TEI-based collections.

Topic maps are comprised of three basic elements—Topics, Occurrences and Associations—elements that are also represented in traditional print indices.

- **Topics represent subjects; there is a 1:1 relationship between topics & subjects.**
- **Occurrences are manifestations of a topic within a particular resource.**
- **Associations are relationships between two or more topics.**

Topics, Occurrences and Associations can also be "typed" to further distinguish each element. **Topic types** allow for categorical groupings according to their kind. **Occurrence types** identify the nature of the topic occurrence (e.g. monograph, photograph, etc.). **Association types** describe the nature of the relationship (e.g. written by, part of, etc.) between topics.

TRADITIONAL PRINT INDEX & TOPIC MAPS



XML TOPIC MAPS & SWINBURNE

Topics and Occurrences

```
<topic id="swinburne">
  <instanceOf>
    <topicRef xlink:href="#poet"/>
  </instanceOf>
  <instanceOf>
    <topicRef xlink:href="#description"/>
  </instanceOf>
  <resourceData>
    Victorian poet.
  </resourceData>
  <occurrence>
    <instanceOf>
      <topicRef xlink:href="#digitalCollection"/>
    </instanceOf>
    <resourceRef xlink:href="http://swinburnearchive.indiana.edu/">
  </occurrence>
</topic>
```

Associations

```
<association>
  <instanceOf>
    <topicRef xlink:href="#writer-work"/>
  </instanceOf>
  <member>
    <roleSpec>
      <topicRef xlink:href="#poet"/>
    </roleSpec>
    <!-- "poet" is as sub-class of "writer" -->
  </member>
  <member>
    <roleSpec>
      <topicRef xlink:href="#swinburne"/>
    </roleSpec>
  </member>
  <member>
    <roleSpec>
      <topicRef xlink:href="#poem"/>
    </roleSpec>
    <!-- "poem" is a sub-class of "work" -->
  </member>
  <member>
    <topicRef xlink:href="#Anactoria"/>
  </member>
</association>
```

ABOUT SWINBURNE

Algernon Charles Swinburne (1837-1909) was a Victorian poet and critic. Early in his career he associated with Rossetti and the Pre-Raphaelites. His most famous works are *Atalanta in Calydon* (1865) and *Poems and Ballads* (1866). Swinburne had a long and prolific career during which he produced a number of other important works including *William Blake: A Critical Essay* (1868), *Songs Before Sunrise* (1871), *Tristram of Lyonesse* (1882), and the epistolary novel *Love's Cross-Currents* (1905, originally published in 1877 as *A Year's Letters* under the pseudonym Mrs. Horace Manners). He influenced many important later writers such as Pater, Wilde, Yeats, Pound and T. S. Eliot.

The Swinburne Archive <<http://swinburnearchive.indiana.edu/>>, hosted by the Indiana University Digital Library Program and edited by John A. Walsh, provides online access to more than half of Swinburne's poetry, and is regularly updated with newly edited content.

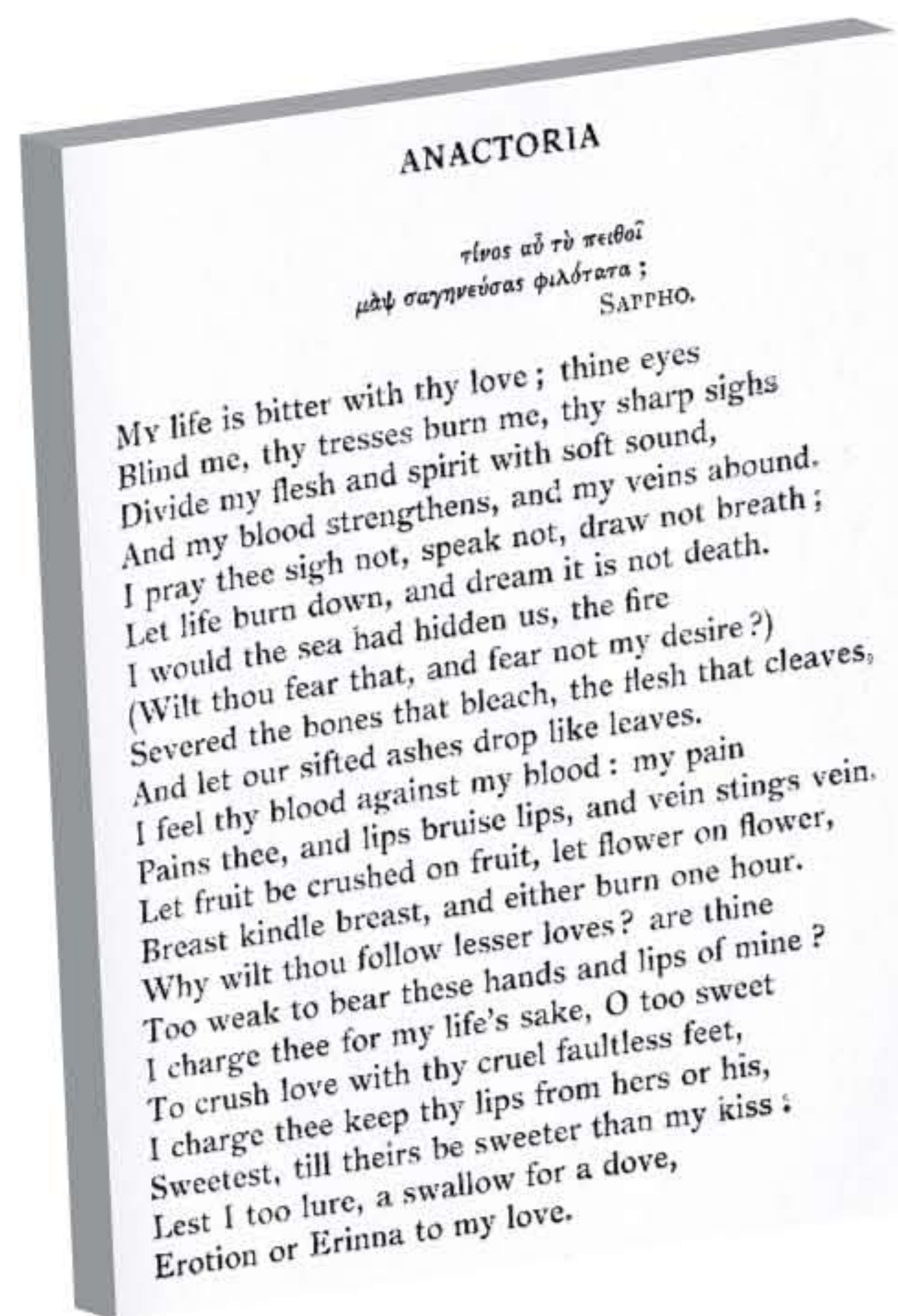
TOPICS IN SWINBURNE'S WORK

- Classical Literature:** Aeschylus, Euripides, Sappho
- Mythological and Legendary figures:** Athena, Pentheus, Tiresias, King Arthur, Tristan
- History:** Mazzini, Battle of Mentana, The Livadia
- Contemporaries:** Rossetti, Browning, Tennyson, Hugo, Whitman, Poe, Baudelaire
- Paintings:** By Whistler, Rossetti
- Translations:** Of Aristophanes, Villon, Hugo
- Parodies:** Of Tennyson, the Brownings, Rossetti, Patmore, Swinburne
- Criticism:** Elizabethan Dramatists, Byron, Shelley, Brontës, Dickens, Whistler, Whitman
- Genre/Verse forms:** sonnet, rondel, roundel, epic, lyrical drama, ballad, Sapphics, hendecasyllabics, sestina, dramatic monologue, elegy, ode, choriambics, elegy

These example topics culminated in five main access points for the topic map interface: people (real or fictional), places, events, works and genre/verse form.

SWINBURNE'S "ANACTORIA"

Excerpt, poem published in *Poems and Ballads, First Series* (1866)



USABILITY

We conducted a comparative evaluation with a standard e-text website and a topic map website.

E-Text Website:

- Search-based, limited Browse
- Full-text, keyword search capability
- Limited structure, minimal levels of hierarchy



Topic Map Website:

- Browse-based, no Search
- Three major browse access points: poems, people and places
- Developed structure, many levels of hierarchy



EVALUATION GOALS

- Understand if the inherent structure of a topic map-driven interface positively or negatively impacts the user's discovery process
- Determine if the user has a preference for a particular interface
- Assess general strengths and weaknesses of each interface

PARTICIPANTS

Three graduate students, two of which were instructors, and a librarian all with Victorian literature and/or Victorian theater backgrounds.

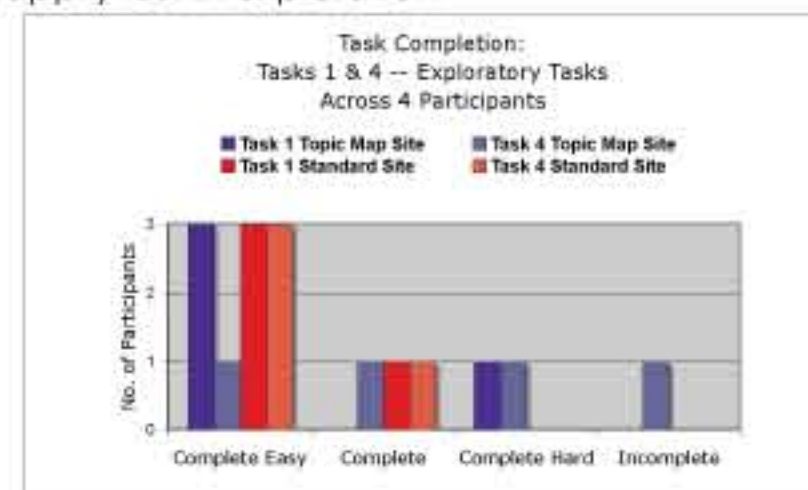
METHODOLOGY

- Participants were asked to complete:
 - a background questionnaire
 - four tasks (2 unstructured/exploratory; 2 structured/goal-oriented)
 - a satisfaction questionnaire

KEY FINDINGS

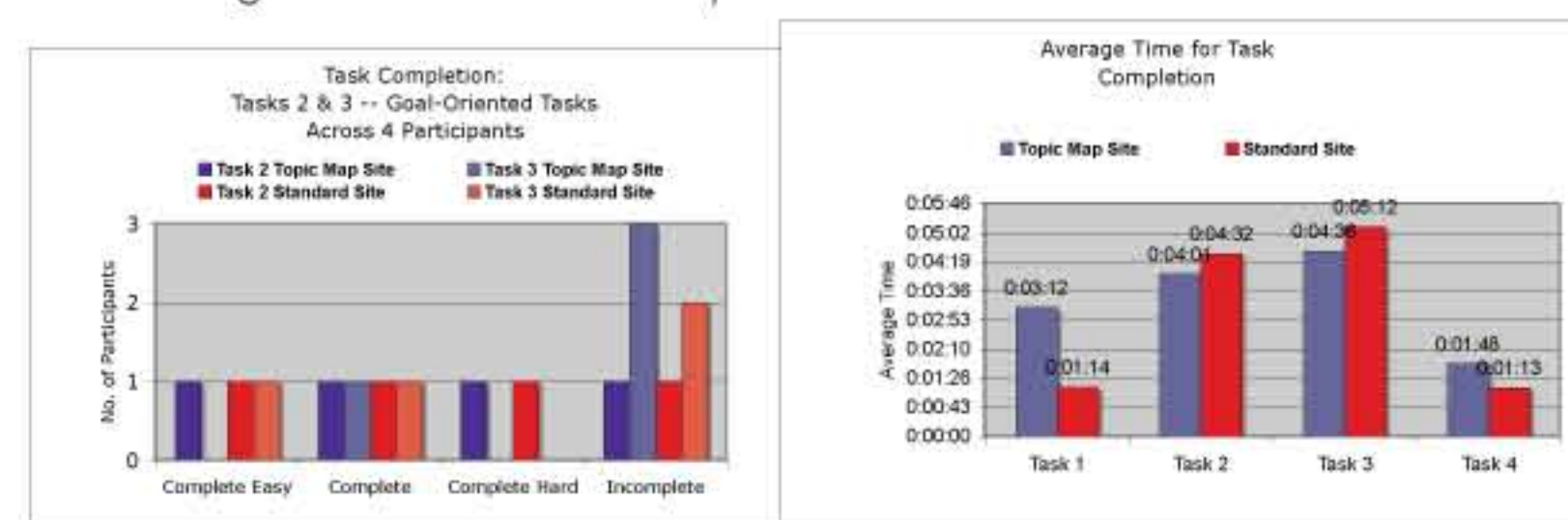
Topic Map interface invites serendipitous discovery

*Complete hard and incomplete task completion signify, in this case, that participants were happily lost in exploration



Both interfaces generally hinder access to specific references in the text

*Standard interface is too flat (excessive scanning for references); TM interface too hierarchical (excessive clicking due to buried information)



Topic Map interface was harder to learn, navigate and comprehend



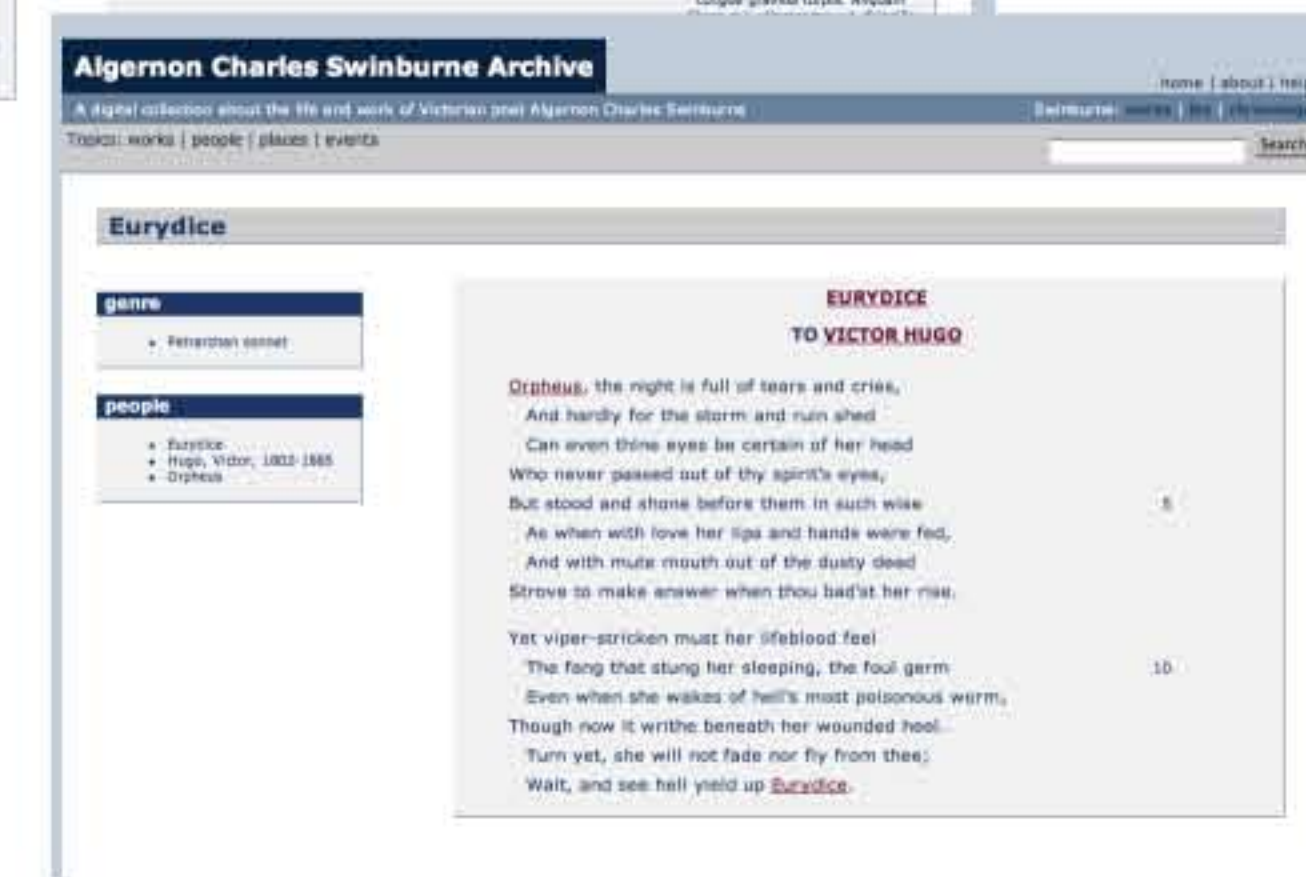
Despite mediocre task performance and negative satisfaction ratings, participants felt the Topic Map interface had potential:

- "Is there some way to combine both websites?"
- "Link from the text, the other way [from the topic map interface] is just surface with artificial connections."
- "This [the topic map interface] invites clicking at random, exploration... It's cool I just don't know if it's industrial strength."
- "This [the topic map interface] can be used as a teaching tool, at the very least be integrated into class syllabi."

REDESIGNING FOR TM INTEGRATION

The following design recommendations emerged as a result of the user study:

- Provide "core" categories and access points that may be enhanced and expanded by users
- Implement bi-directional linking between topic map and content
- Develop Topic Map creation and editing tools
- Integrate topic map with content and standard search/browse interface
- Further exploit pedagogical potential of topic map interface



CURRENT AND FUTURE IMPLEMENTATIONS: XTF AND AJAX

The most recent implementation of the Swinburne Archive, released in April 2006, is based on the eXtensible Text Framework (XTF) <<http://xtf.sourceforge.net/>> developed by the California Digital Library. XTF is a Java web application that may be extensively customized through modification of XSLT stylesheets. The Swinburne Archive uses its own custom XSLT stylesheets to transform from TEI to XHTML 1.1.

In addition to the regular addition of new textual content, future releases of the Swinburne Archive will incorporate page images and employ AJAX techniques to provide more interactive display and manipulation of metadata from XML Topic Maps and other sources.

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