

## USABILITY CHALLENGES IN DIGITAL LIBRARIES FOR THE HUMANITIES

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### Introduction

Humanities scholars represent a highly skilled set of users who use libraries and archives intensely throughout their work. In comparison with scientific and mathematical academics, the intellectual skills of humanities researchers more strongly emphasise skill with words, at the expense of abstract notation and logic. This may result in particular problems, shared with a wider range of users, where current digital library interfaces demand the use of formal notation to achieve effective results. We are investigating the specific interaction and usability problems faced by these users in their use of digital libraries, both to illuminate their specific needs and the problems created by the technical skills required by current information retrieval technologies.

Of the existing studies of humanities users, some have focussed on the users of a particular subject – e.g. historians [2]. Others, such as Wiberley [3, 4] have taken a more general view, of humanities scholars as a whole. Many of these studies have been qualitative, and studied users over a longer period of time, and their broader information seeking skillset. However, a number of key works pre-date the ubiquitous internet, and so are dated. In addition, it is not clear how the broader lessons and insights obtained translate into specific technical design constraints for the developers of end-user digital libraries.

Our own research backgrounds include both the technical side of digital libraries and human-computer interaction. Thus, we approach this challenge from two complementary perspectives – technical and human-centred. This is reflected in the studies that we are undertaking, and the particular insights that we wish to obtain. We aim to close the current gap between the general knowledge obtained to date and the finer detail required to engineer successful DL systems.

### Current Research

We have undertaken an initial study of eighteen humanities academics at the University of Waikato in New Zealand. There were two goals for our study: first, to identify the general pattern of information seeking presently used by the academics with digital libraries, and how this differed from their use of physical materials; second, to detect any relationships between the different forms of humanities search terms

listed by Marchia Bates [1] and the results returned by the same search terms.

Discovering the broader information seeking pattern of a participant reflects the general problems of investigating user's behaviours over long spans of time: e.g. obtaining consistent data in terms of coverage and accuracy, and the work required to process the data obtained from any study.

The other challenge was obtaining 'natural' search terms and criteria to understand what the normal experience and approach of our academics was. To achieve this, we conducted a semi-structured interview, in the course of which we invited the participant to demonstrate their use of digital libraries by re-enacting examples of their recent information seeking. This gave the opportunity to obtain insight into the participant's own approach and information need, rather than the artificial constraints of a laboratory based study. We encouraged the use of familiar digital libraries and searching tools to illuminate the individual's tactics in use, as they recalled particular searches that they had performed recently. This approach proved to be effective in getting an insight into the query terms, needs and expectations of each person.

### Findings

Our initial findings have confirmed the idiosyncratic nature of the information needs of many humanities academics – and any single document or work can be interpreted and used by scholars from different disciplines, traditions and areas of study. Creating systems that match the richness and variety of user interests is a challenging task, especially as users' information seeking strategies are often primitive. Furthermore, when a new library is being created, identifying the needs of future users is problematic, especially in the case of the digitisation of specialised libraries. This is a consequence of the wide variety of goals and strategies that users can bring to the same corpus of documents.

Simple tasks – such as retrieving a specific paper where the author and title details are known – provide few difficulties. However, user strategies may involve tracking chains of citations, persons, places or events through different documents and libraries, and at present these techniques map poorly onto the library interfaces, and prove repetitive and tiring at best.

We have found that part particular forms of seeking prove predictably ineffective for humanities users, even when the semantic meaning of their search is, in human terms, well defined. A key example of this is the case of discipline terms as search terms. These technical phrases often prove extremely poor discriminators when used naively to search library and archive catalogues – and the advanced search criteria that would make them effective are seldom used by humanities academics. Thus, terms that Bates [1] indicated had meaning and precision do not, in fact, have those properties in the context of information retrieval.

### **Future Work**

We now face the challenge of eliciting the skills of our target users, and finding matches between their strengths and the capacities of information retrieval systems. Unfortunately, humanities users have a limited vocabulary to express their information seeking strategies, so studies will have to be carefully designed to successfully articulate the underlying logic of their seeking. Digital library systems have a long way to go before they will support the broad range of approaches to finding documents that humanities academics deploy in physical, traditional libraries, and may never provide the extrinsic values that researchers of history and literature place on physical material.

### **• References**

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