Investigating Language Skills and Field of Knowledge on Multilingual Information Access in Digital Libraries

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ABSTRACT

Digital libraries remove physical barriers to accessing information, but the language barrier still remains due to multilingual collections and the linguistic diversity of users. This study aims at understanding the effect of users' language skills and field of knowledge on their language preferences when searching for information online and to provide new insights on the access to multilingual digital libraries. Both quantitative and qualitative data were gathered using a questionnaire and results show that the language skills and the field of knowledge have an impact on the language choice for searching online. These factors also determine the interest in cross-language information retrieval: language-related fields constitute the best potential group of users, followed by the Arts and Humanities and the Social Sciences.

Keywords: Cross-Language Information Retrieval, Digital Libraries, Language Skills, Multilingual Information Access

INTRODUCTION

The curators of digital libraries and their users are being confronted with large quantities of digital material, increasingly diverse in nature: multi-media, multi-cultural and multi-language (Borgman, 1997; Crane, 2006). A fundamental goal of digital libraries is to provide universal access to the information being managed (Association of Research Libraries, 1995), but this can only be realised if digital content is made more accessible and usable over time within online environments (Chen, 2007). For example, the European i2010 Digital Libraries initiative aims to make cultural, audiovisual and scientific heritage accessible to all: "the initiative combines cultural diversity, multilingualism and technological progress" (European Commission Information Society and Media, 2006). In Europe two major initiatives are The European Library[1] (TEL) and more recently Europeana[2]. The European Library (TEL) offers access to digital resources (books, posters, maps, sound

recordings and videos) and bibliographic content from 48 national libraries in 35 languages. Europeana—the European digital library, museum and archive—aims to provide users access to around 2 million digital objects, including photos, paintings, sounds, maps, manuscripts, books, newspapers and archival papers. Both digital libraries offer access to multilingual content and Europeana plans to provide a multilingual interface and offer multilingual access to users. More widely, UNESCO has officially launched the World Digital Library[3], an Internet-based library that aims to display and explain the wealth of all human cultures. Of course, universal access is as applicable to smaller and more specialised digital libraries as it is to the larger national and international ones. However, although digital libraries can remove physical and spatial barriers in accessing information, the language barrier still remains due to multilingual collections and the linguistic diversity of users. Previous research has shown that language has an impact on the structure of the web (Kralisch & Mandl, 2006) and that the power relations of languages on the Internet have cultural implications (Flammia & Saunders, 2007), causing a digital divide. Language represents a clear barrier to accessing information online, which is dominated by the English language and Anglo-American values. This is the context in which digital libraries must operate and are thereby subject to this digital divide also. A key factor to the future success of digital libraries is the provision of appropriate multilingual services to allow users to find, explore and work with content in multiple languages (European Commission Information Society and Media, 2006).

In this article we present a study to investigate the potential impact of language and field/domain of knowledge in searching for information online in general, and using digital libraries. The context of our study has been constrained to users predominantly within a university setting because: (1) this group makes regular use of digital libraries, (2) it is increasingly common to find members of this population exhibiting a wide range of language skills and abilities,

(3) members of this group have specialised areas of knowledge, and (4) members of this community were easily accessible to us. The methodology follows an inductive approach and both quantitative and qualitative data have been gathered using a questionnaire that resulted in 514 responses. Although the majority of participants belong to The University of Sheffield (UK) and the Universidad Autonoma de Madrid (Spain), an effort has been made to include respondents with other native languages in addition to English and Spanish. Also, a range of fields is studied, with particular attention to the language-related fields. The specific objectives of this study are to:

- Explore the effect of users' language skills and professional/study field on their language choice when searching online;
- Investigate whether or not users would like to use cross-language information retrieval (CLIR), its utility and how this relates to language skills and field;
- Investigate the preference of users for certain tools and functionalities that support searching in digital libraries, as well as the most criticised aspects of digital libraries.

The article is organised as follows: firstly, Section 2 describes related literature; Section 3 explains the methodology used in this study; Section 4 presents the results, which are further discussed in Section 5; Section 6 concludes the article and discusses further areas for future work.

LITERATURE REVIEW

People, Languages and the Internet

With users' activities involving increasing levels of online interaction, it is important to study language with regard to information access. Miniwatts Marketing Group (2008) shows in its Internet World Statistics that already 17.3%

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