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# Cross-cultural Analysis of E-mail Reference

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**Studies that examined virtual reference and its potential for collaboration have by and large represented experiences in western English-speaking countries. This article reports the results of a three-nation (Israel, Japan, and Lebanon) comparative analysis to bridge this research gap. Similarities and differences between these countries highlight elements that international collaborative initiatives should consider when implementing global virtual reference services.**

## INTRODUCTION

Today, many libraries in North America, Europe, Australia, and Asia participate in collaborative virtual reference, exchanging questions among members of a consortium.<sup>1</sup> Some of these consortia involve international collaboration among libraries from different countries to provide direct virtual reference services to end users worldwide. When joining a consortium, individual libraries reduce their expenses by sharing reference responsibilities, the cost of software, and marketing activities.<sup>2</sup>

There are a number of advantages to the consortia model.<sup>3</sup> Member libraries staff the desk for only a few hours a week while the rest of the schedule is covered by partner libraries. Collaboration with an institution in a different time zone enables a member library to provide 24/7 real time chat reference.<sup>4</sup> Furthermore, when an individual library addresses questions for the entire consortium, librarians use their time more efficiently as they handle questions from multiple libraries and have a higher number of questions coming in, rather than waiting for a question to arrive. International collaborative virtual reference initiatives may further enhance reference service, not only by expanding hours of coverage but also by providing access to more subject specialists. In addition, collaboration enhances the ability to answer questions regardless of languages of materials requested and languages of transactions (for example, a question that is submitted in French at a German library can be answered by a French library). Collaborations enables consortia to leverage unique knowledge and skills of librarians despite geographical limitations. An additional benefit of joining a consortium is the ease of creation of a shared knowledge base of all the questions and answers previously asked for re-use in some future point in time.

The problem with most if not all existing virtual collaborative reference services and studies is that little attention has been given by librarians and scholars to the impact of cultural and linguistic differences among countries on these services. As we know, communication patterns are culturally embedded and are significantly different from one country to another.<sup>5</sup> The role of the library in society, and user expectations from library services, vary as well. These are factors that may considerably influence the nature and quality of virtual reference service provided in global collaborations. As such, it may be unwise to generalize from research on virtual reference services that have been conducted largely in English-speaking countries.

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Very few studies have focused on the provision of collaborative online reference services in non-English speaking countries. This is partially due to the newness of the phenomenon as well as the apparent assumption that findings from English-speaking libraries can be generalized to other countries. This study, therefore, attempts to respond to a lacunae in international and comparative Library and Information Science research—research of virtual reference services should expand to a more global context.<sup>6</sup> The importance of the study is that it describes commonalities and differences in virtual reference services among several countries that are underrepresented in the literature. The study is also important because it identifies challenges that global collaborative virtual reference services may face upon implementation. Achieving these goals is significant for designing and implementing more effective and efficient global collaborative virtual reference services. Our study analyzes, compares, and contrasts asynchronous reference transactions from Israel, Japan, and Lebanon. We (1) identify the types of questions that virtual reference services are receiving in these countries; (2) develop an international questions taxonomy; and (3) identify methods used by librarians to handle virtual reference questions.

## LITERATURE REVIEW

### Collaborative Virtual Reference Services

Successful collaborations, state-wide, national, or international, have been reported in the library literature. The largest collaborative virtual reference service today is QuestionPoint, a joint effort by OCLC and the Library of Congress that is based on the Collaborative Digital Reference Service (CDRS). When CDRS was launched in 2000, the Library of Congress and fifteen partner libraries were involved;<sup>7</sup> by the end of 2004 more than 1,500 libraries in twenty countries were participating in QuestionPoint. QuestionPoint interface is now available in ten languages, supporting the provision of virtual reference services. Using QuestionPoint involves costs and benefits for international virtual reference partnerships.<sup>8</sup>

In addition to QuestionPoint, many state-wide consortia in the United States and nation-wide consortia in other countries provide virtual reference. These include, for example, in the United States: AskColorado,<sup>9</sup> the Metropolitan Cooperative Library System (MCLS) in California, QuadANJ in New Jersey, Maryland AskUsNow!, Ohio's KnowItNow24x7, and Washington state's Virtual Reference Service, to name a few. Similarly, national collaborative virtual reference services exist in Australia-AskNow!,<sup>10</sup> and in the United Kingdom-Ask a Librarian.<sup>11</sup> Other European collaborative examples are: the “Biblioteksvagten” in Denmark, “Ask a librarian” in Finland, “Die Deutsche Internetbibliothek” in Germany, “Lapponica Information Service” in Lapland, “Al@din” in the Netherlands, “Pregunte, Las Bibliotecas responden” and “La Biblioteca Responde” in Spain, and “Fråga biblioteket” in

Sweden. In Asia, collaborative examples include: “Reference Point” in Singapore, the Virtual Reference Desk of the Shanghai Central Library, and the China Academic Distributed Collaborative Virtual Reference System (CVRS), which is planned to be launched by the end of 2005.<sup>12</sup>

Examples of international collaborative virtual services include a joint effort between libraries of the Australian consortium (GAELIC) and a Florida academic library;<sup>13</sup> Somerset libraries in the UK with Brisbane City Council Library Service in Australia and Richmond County Public Library in South Carolina;<sup>14</sup> Chasing the Sun—a virtual reference service between health science libraries in Australia and the UK;<sup>15</sup> a collaboration among libraries in France, Germany, and Poland; and a collaboration among reference librarians at Slavic and East European Library at University of Illinois at Urbana Champaign, the Jagiellonian University Library in Kraków (Poland), and the Russian National Library in St. Petersburg.<sup>16</sup>

### Issues in International Collaborative Virtual Reference

International collaborative virtual reference requires librarians to be aware of cultural differences and information behavior. However, studies examining the impact of cultural diversity on information seeking behavior in libraries are scarce.<sup>17</sup> Scholars addressed the cultural diversity of users in terms of country of origin and ethnic background and focused on the effect of students' heterogeneity on information seeking behavior, research skills, and library usage.<sup>18</sup> Ziming Liu reported that international students in the United States, who were proficient in English and whose home countries are strongly influenced by American culture, encounter fewer difficulties in using American libraries; this finding was concurred by Mengxiong Liu.<sup>19</sup> Mengxiong Liu and Bernice Redfern found that students' success level and English proficiency, frequency of library use, and frequency of reference desk inquiry are positively correlated.<sup>20</sup> Lucinda R. Zoe and Diane DiMartino reported that East Asian students request more assistance in searching full-text databases than native English speakers.<sup>21</sup> In short, studies have found that students from different countries have different perceptions and exhibit different use patterns of the library. Barriers to effective communication in the library include language, conceptual awareness of library services, and philosophy of education.<sup>22</sup>

Investigators have reported major differences in how libraries are used and perceived in different countries.<sup>23</sup> Librarians in North America are challenged to provide services and library instructions to international students. One source of this difficulty is that many Asian students have no concept of reference services and view the library as a place to store required texts.<sup>24</sup> Small cities and towns in many countries have no libraries at all. Censorship, restrictive lending policies, closed stacks, and service expectations vary tremendously.<sup>25</sup> For example, in Japanese schools the library is a study hall and a library clerk is in charge of the room.<sup>26</sup> Japanese students use the library mainly for ready reference questions; they rarely use it for research although some academic libraries in Japan (e.g., Keio University library) offer active reference services. Yoshi Hendricks claims that due to the lack of attention to reference services in Asian countries in general, international students from these countries rarely ask reference questions.<sup>27</sup>

Another critical component to international collaborative virtual reference is the need for an interface in multiple

languages. Providing reference services in multiple languages reaches out to diverse user groups and helps them seek information on their own turf.<sup>28</sup> The need to provide bilingual reference services and the challenges that an individual library faces when trying to establish this service have led Tutor.com to develop *Bilingual Librarians by Request*, a subscription service that provides library customers with online access to Spanish-speaking reference librarians. Table 1 lists efforts to provide chat virtual reference services in languages other than English.<sup>29</sup>

With the aforementioned issues in mind, this study makes an effort to identify similarities and differences among virtual reference services in three countries (Israel, Japan, and Lebanon) in order to help in the planning and implementation of international collaborative virtual reference services. In particular, this study focuses on answering the following research question: What information about users, librarians, and libraries should global collaborative virtual reference initiatives consider in order to provide effective reference services?

### METHODOLOGY

The objective of this study was to identify similarities and differences among three countries and discover elements that international collaborative initiatives should consider when implementing global virtual reference services. Virtual reference service in this study refers to e-mail reference through a mailto link or a Web form that users can fill out where an indication has been made that users can ask reference questions.<sup>30</sup> We examined recent e-mail reference transactions in university libraries in Israel, Japan, and Lebanon: University of Haifa, Keio University, and the American University of Beirut, respectively.<sup>31</sup> This section describes the setting of these libraries, explains the data collection, and discusses the content analysis method that was applied to analyze the reference transactions.

#### University of Haifa

Academic libraries in Israel go as far back as the 1920s with the establishment of Hebrew University.<sup>32</sup> Since then, its library, which was influenced with German style of librarian-

**Table 1**  
**Virtual Reference Services in non-English Languages**

Language	Service
Spanish	Informatcion en vivo! (New York Public Library)
	Q and A Café (San Francisco area)
	Library of Congress (Spanish and Portuguese)
	AskColorado
	24/7 Reference service
Swedish	Net University (Sweden)
Catalan	Universitat de Lleida (Spain)
Chinese	Public libraries of Suffolk County (New York)
French	Centre regional de services aux bibliotheques publiques (Quebec)
	New Brunswick Public Library (Canada)

ship (closed stacks and departmental collections and services), continued to serve as an academic and national library (*Beth Hasfarim Haleumi*), as well as the library for the Jewish people worldwide. In 2003 the national library and the Hebrew University libraries became two independent institutions. During the early years, most of the librarians at the Hebrew University were trained on the job and their role was perceived to be mainly clerical. This changed with the establishment of the first graduate library school in Israel at the Hebrew University. Two other graduate library schools were later established: Bar Ilan University (also offers an undergraduate library diploma) and the University of Haifa.<sup>33</sup> All three library schools were highly influenced by American librarianship and library education (open shelves and active reference and instruction services). Sever and Sever and Sidorsky Dov discuss the history of libraries and library education in Israel, and a description of its national, academic, public, school, and special libraries.<sup>34</sup>

The University of Haifa, whose library's virtual reference service is examined here, was founded during the 1960s as a branch of the Hebrew University and later became an independent university. The University has six main faculties (Humanities, Social Sciences, Law, Science and Science Education, Social Welfare and Health Studies, and Education), and a Graduate School of Business. The University of Haifa is the only liberal arts university in northern Israel and home to the most diverse student population in the country; it has a heterogeneous student body of approximately 15,000 undergraduate (66 percent) and graduate students (34 percent).

The university library is considered one of the leading libraries in Israel. The library collection includes two million items. It maintains about 11,000 active journal subscriptions and 22,000 journal titles in various formats. Hebrew language periodicals include approximately 3,300 titles. The library has access to the full text of thousands of periodicals and hundreds of databases.

The reference department handles more than 300 reference requests daily and provides over a hundred sessions of group instruction per semester. The virtual reference service began in 1998 as an e-mail service dedicated for faculty members, and since 2000 it became available through a Web form for the University of Haifa students, faculty, and staff. The library reports an average of two e-mail questions per day that are handled by one librarian.

#### Keio University

Historically, libraries in Japan originated as collections of books. Currently all universities have campus libraries and are regulated under different rules based on the type of universities (e.g., private or public). According to a report from the Ministry of Education, Culture, Sports, Science and Technology, on average, there are 1.9 libraries per university.<sup>35</sup> Although certain limitations exist, almost all libraries in Japan are open to the public. For example, unaffiliated students and faculty members can use any academic library in the country if they have a letter from their own library system.<sup>36</sup>

As far as library education is concerned 296 universities and colleges have been reported to be offering library certificate programs.<sup>37</sup> Undergraduate students pursuing a library certificate are required to complete twenty credit hours of coursework in librarianship; this certificate is



required *only* for individuals interested in working in public libraries but is optional for those interested in working in other types of libraries. Ueda et al. also report that eight universities provide graduate level education in Library and Information Science. Of these eight universities, Keio University, Tokyo University, Kyoto University, University of Tsukuba, and Aichi Shukutoku University offer doctoral programs in the field.

Keio University, whose library's virtual reference service is examined here, was founded in 1858 and is Japan's oldest private higher education institution. It is a comprehensive academic university with five major campuses in the Tokyo area: Mita, Hiyoshi, Yagami, Fujisawa, and Shinanomachi. Nine major academic units offer undergraduate, master's, and Ph.D. degrees and a wide range of academic disciplines, including business administration, science and technology, medicine, and law. Keio's University libraries serve approximately 28,000 undergraduate students, 4,100 graduate students, and 1,800 faculty members.

The original university library located in Mita was founded in 1890. The Old Library, a red-brick Gothic building, was completed in 1912 for the celebration of Keio University's 50th anniversary. It is an important cultural property and an enduring symbol of the University. Each of the five campuses has a library which is called "Media Center." As a whole, media centers (including libraries) are considered one of the foremost academic information storehouses in the country. The combined libraries of the Keio Media Centers house more than 3.7 million volumes. The library on Mita campus provides access to approximately 10,000 print journals, 19,000 electronic journals, 187 databases, and 1,627 e-books.

In 2004, 43,123 reference inquiries were made at five Keio University Media Centers. The e-mail reference service was launched on Mita campus in 1998, and the Web form was introduced in 2002, to assist Keio University graduate students and full-time faculty members in searches for information, books, and other materials. On Hiyoshi campus, the e-mail service started in late 2002, and the Web form was launched in 2003. Eight out of ten reference librarians at Mita and all three reference librarians at Hiyoshi respond to virtual reference inquiries. They currently receive five inquiries per month.

### **American University of Beirut (AUB)**

Modern librarianship in Lebanon started in the nineteenth century with the establishment of libraries serving newly founded academic institutions. Each library was influenced by the national origins of its parent institution. For example, AUB, which was established in 1866 (as the Syrian Protestant College), and the Lebanese American University, founded in 1924 as Beirut College for Women, were influenced by the American style of librarianship.<sup>38</sup>

AUB, whose library's virtual reference service is examined here, was founded as a private, independent, non-sectarian institution of higher education, functioning under a charter from the State of New York. AUB's main campus is comprised of 81 buildings, including a hospital, four libraries, three museums, and six dormitories, as well as an athletics field. It offers over 100 undergraduate and graduate degree programs in agriculture and food sciences, architecture, arts, business, engineering, humanities, health sciences, medicine,

nursing, and social sciences. The language of instruction is English.

AUB libraries hold over 600,000 volumes, growing at a rate of 11,000 volumes annually. They subscribe to 2,600 periodicals, of which 200 are in Arabic, and provide access to approximately 16,000 full-text electronic journals in over ninety periodical databases. The libraries serve a population of approximately 5800 undergraduate and 1,500 graduate students (51.5 percent male and 48.5 percent female) from sixty-eight different countries and 400 full-time faculty members, most of whom hold their doctorates from the United States. The libraries are open 90 hours per week. Researchers from all over the world use AUB libraries for their unique, rich, and historical collections, particularly on Lebanon and the Middle East.

Like many other libraries in the Arab world, most of the senior staff members at AUB are natives with MLS degrees from ALA-accredited programs.<sup>39</sup> As there is no formal training program, new staff members learn by experience. It is important to note here that most of the library's processes have been automated only as of 1997. Electronic reference sources and services are equally new. The reference desk, which is staffed by three librarians and several other support staff and student assistants, receives approximately 100 questions per business day, mostly in person and by telephone. E-mail reference started in 2000 and currently receives approximately four questions per week. Only the professional reference librarians answer e-mail questions, which are sent to the library via direct e-mail rather than a Web form.

### **Data Collection**

During the winter of 2005, the three libraries were contacted by the researchers requesting recent e-mail reference transactions for the study. Each library agreed to provide the researchers with the data after personal identifiers [of the users and librarians] were removed. Because different libraries provided different numbers of transactions, we used fifty of the most recent reference transactions provided by each library, all of which were from 2004 to 2005 academic year. Some transactions involved multiple correspondences between the users and librarians over a period of time; these were counted as one reference transaction. Some of the transactions were incomplete and could not be included (e.g., a reference request without the librarian's response and vice versa). The final sample consisted of forty-five requests from Israel, fifty-one from Japan, and fifty from Lebanon, for a total of 146 user requests and answers (ninety-six using a Web form and fifty via direct e-mail) that were made during the 2004–2005 academic year. Of the 146 transactions examined, three were in Arabic, fifty-one were in English (most from Lebanon), forty-two in Hebrew (all from Israel), and fifty in Japanese (all from Japan). It should be emphasized again that at Keio University and the University of Haifa users fill a Web form when asking a reference question whereas at AUB they send a direct e-mail to the reference staff. In contrast to direct e-mail, a Web-based interaction helps librarians collect potentially useful information about users and their information requests, such as academic status (e.g., undergraduate, graduate, faculty, staff, librarian), departmental affiliation, language of materials requested, and type of materials requested.

## Data Processing and Analysis

Content analysis of reference transactions was used to uncover key themes and elements and to compare results among the three countries. Content analysis, as any other research method, has its strengths and weaknesses. Charles H. Busha and Stephen P. Harter recommend that, in order for content analysis to produce good results, developing an appropriate content classification scheme is an important first step.<sup>40</sup> They and Bryce Allen and David Reser also advise that the categories chosen should be exhaustive, mutually exclusive, clearly and accurately defined, and conceptually valid in relation to the research question.<sup>41</sup> It should be noted that understanding the content of e-mail transactions is aided by knowledge of the communication patterns of the people being studied. Also, because communication differs from one culture to another, developing a universal coding scheme can be very challenging.<sup>42</sup>

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We began data processing by attempting to apply existing question taxonomies to our data. However, because existing schemes did not fit our data, we developed a new coding scheme. For example, the IFLA digital reference guidelines were initially used to code the librarians' responses.<sup>43</sup> The guidelines, however, were too prescriptive, focusing on what librarians should do instead of what they actually do. In addition, the IFLA guidelines do not address user requests and do not completely account for multiple interactions to respond to certain requests. Eileen Abels' tactics too were initially examined, but could not be applied to most of our data.<sup>44</sup>

We also examined question taxonomies generated from virtual reference transactions; however, these did not seem to be generalizable beyond the particular samples they examined.<sup>45</sup> The taxonomies vary considerably from each other and from other taxonomies that have been proposed for traditional reference.<sup>46</sup> In summary, because of the lack of a question taxonomy that could be used in a global context, this study developed its own based on virtual reference transactions from the three countries. The resulting coding scheme describes both users' requests and librarians' responses.

We classified both requests and answers according to categories described in Table 2. We initially applied the coding scheme to a sample of thirty transactions (ten from each country) and then compared the results in order to standardize and refine the wording and use of the categories. The coding scheme was modified several times using different sets of thirty transactions; the scheme presented here fits the data found in the sample across the three countries. It took four iterations to reach consensus because of the variety in the ways people in different countries communicate, provide, or ask for information. During these iterations, we translated requests and responses to English to clarify possible subjective interpretations. Once the level of agreement among the researchers reached an acceptable rate of over 90 percent, and definitions and guidelines were agreed upon, we coded the entire data set.

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**Table 2**  
**Coding Scheme**

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	Category
User	Tool used to asked the question (direct e-mail versus Web form) Language of interaction (e.g., Arabic, English, Hebrew, Japanese) Academic or personal status (e.g., undergraduate, graduate, faculty, staff, librarian) Departmental affiliation if any Country for international users Whether the search history was specified Purpose of request (e.g., research paper, dissertation) Number of questions per request Number of transactions per request Type of questions asked (e.g., topical/subject searches, known-item searches, technical problems, searching instructions) Language of materials requested (e.g., Arabic, English, Hebrew, Japanese) Type of materials requested Whether users identified specific publication dates for the materials requested
Librarian	Number of days taken to respond to an e-mail request Number of messages involved in answering a request Language of interaction used in responses (e.g., Arabic, English, Hebrew, Japanese) Whether the language of the response was consistent with the language of the request Number of librarians involved in answering a request Whether materials requested were found in library Whether information requested was found in library Whether information requested was provided (e.g., searching instructions, citing instructions, library policies information) Whether referrals were made, and to whom (e.g., another librarian within the building, another library on campus, or to another institution) Whether the response includes reiteration of the 4user request Whether concluding remarks were made Whether follow up initiatives were offered to users

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A graduate assistant coded a sample of fifteen full transactions in English to verify the coding reliability. The inter-coder reliability was close to 93 percent.

The primary limitation of the study is the number of libraries and countries represented. Another limitation of the study is that we make no comparisons with user groups in the United States and other English-speaking countries. Despite these limitations, this study is valuable as the first to address the

social complexity of global virtual reference. Its comparison of e-mail reference services between different countries provides insights for enhancing existing services. The coding scheme developed in this study should also be valuable to researchers interested in studying global collaborative virtual reference.

## RESULTS AND DISCUSSION

The results of this study are presented and discussed in three sections: (1) user demographics; (2) content of user requests, focusing on the type of questions asked and language used; and (3) librarians responses. Before presenting and discussing these points, it should be emphasized that the comparative analysis of the 146 e-mail transactions revealed several similarities and differences among the three countries. Table 3 provides a summary of all user data and Table 4 does the same for librarians' data.

### User Demographics

Most of the requests in Japan and Israel are sent by affiliated users but in Lebanon many unaffiliated users request reference help. In Lebanon, over 56 percent of the users were from eleven different countries, including thirteen requests sent by users from the United States.

As Fig. 1 illustrates, user demographics vary among the three countries. Most of the questions in Japan are sent by faculty members and graduate students because the service is limited to these user groups. In Lebanon, many of the users do not reveal their academic background, primarily because requests are sent by e-mail rather than a Web form requesting such information and because many requests in Lebanon are from unaffiliated users. The requests in Israel are sent primarily by students; only a few are sent by faculty. This may be because faculty members in Israel have many other avenues to meet their information needs. For example, at the University of Haifa, a reference librarian is exclusively dedicated to provide library services to faculty members; the librarian attends faculty meetings and holds reference desk hours outside the library building in the faculty offices. In addition, collection developers in each subject area provide reference support to faculty in each department. It is possible that these faculty members largely fulfill their information needs in other ways too.

Users' demographics in the three countries may account for some of the variation in the types of questions asked. For example, many of the users in Lebanon are unaffiliated with AUB and are residents of other countries (see Table 3). This may explain why genealogy questions and questions for reproduction of materials are more frequent in Lebanon, compared with Israel and Japan.<sup>47</sup> Users' demographics also influence the type of questions sent to the virtual reference service in Israel, where many questions are submitted by graduate students (Fig. 1). Compared to their proportion in the user population of the institution, more graduate students use the service than undergraduates. This may be in part because graduate students conduct more research activities than undergraduate students and because in Israel a typical graduate student is older and "non-traditional" in comparison to the other countries. The average age of a student in Israel is older in Japan and the United States by approximately three years. Most of the first year undergraduate students have completed two (women) or three (men) years military service.<sup>48</sup> Thus, by the time they attend graduate school many students hold full time positions and some of them are married or even parents;

these students are likely to spend less time on campus and use virtual reference services more.

In Japan, access to university library materials is often restricted to affiliate users; unaffiliated users can make a interlibrary loan requests for materials not owned by their libraries. A reference letter is required for Keio University students to visit other university libraries.

### Type of Questions

As Table 3 indicates, the most frequent type of requests in all three countries is for known items (fourteen requests, or 31 percent, in Israel; twenty-four (47 percent) in Japan; and nineteen (38 percent) in Lebanon). Yet, in Israel the library received almost as many topical questions (twelve requests, 27 percent); in Japan topical questions are not so frequent (two requests, 4 percent), and in Lebanon there were ten topical requests (20 percent). Three genealogy requests and many requests for reproduction (eight requests) are evident in Lebanon, compared with no genealogy request in Israel and Japan, as well as no reproduction requests in Israel and only three requests in Japan. On the other hand in Israel and Japan, non-reference requests (eleven requests in Israel and eight requests in Japan) are more frequent than in Lebanon (three requests). Thus, both the types and frequencies of requests vary across the three countries.

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**"...the most frequent type of request in all three countries is for known items..."**

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A comparison of the transactions from the three libraries indicates that the types of questions they receive vary considerably (see Fig. 2). For example, in Israel many more topical requests were sent by users than in Japan or Lebanon. This difference in types of questions asked suggests different user needs in these countries. One possible reason for the high rate of topical requests in Israel is the fact that the library users must use English terms to search for subject information, even if the materials are written in Hebrew (or any other language), because the library catalog uses the Library of Congress Subject Headings.<sup>49</sup> In addition, most of the databases in the library collection require users to search in English. Although Israeli users are required to read English materials, searching requires a higher level of English proficiency, which the librarians can provide.

Another possible explanation of the differences in the types of questions asked is differences in perceptions of the library in the three countries, particularly the perception of reference services. The user-centered approach in Israel and Lebanon (both are influenced by American librarianship and educational systems), the perception of the librarians as facilitators, and who help answering users' information needs, result in more topical questions. Unlike Israel and Lebanon, in Japan, very few topical requests were made. This reflects the expectation in Japan that the user will be independent and will not ask for help from librarians, especially not for basic information needs. This attitude results in higher percent of availability questions and known-item search requests than topical questions. It is possible that known-item requests are more frequent in Japan

**Table 3**  
Count Per Country on User Variables

Variable	Value	Israel <i>n</i> =45	Japan <i>n</i> =51	Lebanon <i>n</i> =50
Format	E-mail	3	13	50
	Form	42	38	0
Language	Arabic	0	0	3
	English	3	1	47
	Hebrew	42	0	0
	Japanese	0	50	0
Status	Unknown	3	5	20
	Undergraduate	19	4	3
	Graduate	19	17	8
	Faculty	2	15	6
	Staff	1	1	0
	Librarian	0	6	8
	Other	1	3	5
Affiliation	Affiliated	41	43	25
Country from which request originated	Israel	45	0	0
	Japan	0	51	0
	Lebanon	0	0	18
	Other	0	0	15
	United States	0	0	13
Academic major of student	Yes	4	34	10
	No	41	17	40
Multiple messages		3	1	36
Greeting	Yes	27	17	47
	No	18	34	3
Purpose of request	Yes	5	7	15
	No	40	44	35
Known item		14	24	19
Topical question		12	2	10
Search history	Yes	10	15	3
	No	35	36	47
Language of materials requested	Arabic	0	0	1
	English	3	0	0
	Hebrew	7	0	0
	Multiple	3	0	1
Type of materials Requested	Books	4	0	0
	Articles	7	0	0
	Dissertations	0	0	0
	Multiple	3	0	1
	Other	0	0	1

**Table 3 (continued)**

Variable	Value	Israel <i>n</i> =45	Japan <i>n</i> =51	Lebanon <i>n</i> =50
Years of materials	Not specified	38	51	49
	Specified	7	0	1
Technical problem		7	3	7
Search instructions		1	3	5
Citing instructions		0	0	1
Verification		0	3	0
Non-reference		11	9	3
Reproduction		0	3	8
Genealogy		0	0	3
Other (type of question)		2	8	2
Number of messages	One	42	40	44
	Two	2	9	3
	Three	1	1	2
	Four	0	0	1
	Five	0	1	0

than Israel and Lebanon because of the perceptions of the library and the role of the reference librarian, as Hendricks observed.<sup>50</sup>

### Language

International collaborative virtual reference services do consider language differences. However, this consideration is done at one level by QuestionPoint and other international collaborative virtual reference services when it really should be done at two levels. The first level is the language of transaction and second is the language of materials available or requested. While it can be assumed that the language of transaction and the language of materials will be the same in general, this study found that some transactions are written in one language to request materials in another language (or languages). Several of the transactions analyzed were conducted in two languages. For example, in Israel a few requests were made in English and replied to in Hebrew; in one case the librarian replied in English to a request made in Hebrew. Fig. 3 illustrates the language of transactions in each of the countries.

Another expectation is that the language of the reference transaction will be the formal language of a country. In the sample from Japan, all transactions were made in Japanese, but in Israel and Lebanon interactions were not always conducted in the formal languages of the country. Most of the transactions in Lebanon were in English, which is a foreign language (the formal languages are Arabic and French but the language of instruction at AUB is English). Likewise, most of the transactions in Israel were conducted in Hebrew, which is the formal language for 80 percent of the population (Arabic for the Arab population (20 percent)), and a few were conducted in English, which is a foreign language. The student body at the University of Haifa



**Table 4**  
**Count Per Country on Librarian Variables**

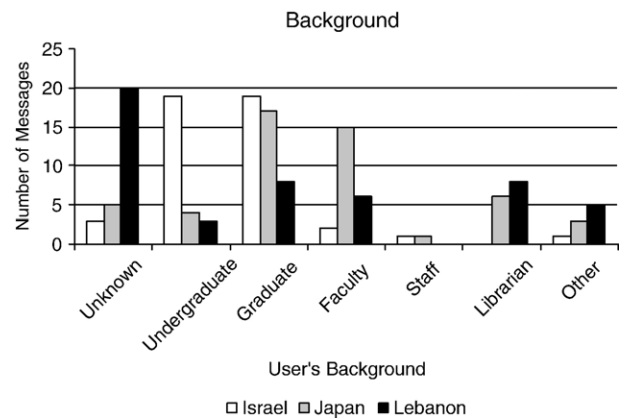
Variable	Value	Israel	Japan	Lebanon
Apology	Yes	2	6	1
	No	43	45	49
Reiteration	Yes	13	4	43
	No	32	47	7
Search history	Yes	3	18	7
	No	42	33	43
Concluding remarks	Yes	16	9	6
	No	29	42	44
Follow-up	Yes	13	18	14
	No	32	33	36
Materials requested found in library	Yes	37	9	25
	No	8	42	25
Instructions provided	Yes	21	14	15
	No	24	37	35
Policy information provided	Yes	19	9	6
	No	26	42	44
Number of messages sent by the librarians	One	27	38	44
	Two or more	18	13	6
Language of reply consistent with request	Yes	42	51	48
	No	3	0	2
Information requested available in the library		0	4	11
Multiple messages due to collaborative effort		0	5	1
Multiple messages due to referral		7	4	3

includes about 20 percent Arab students, but none of the transactions was written in Arabic. Thus, the language of transaction in all three countries corresponded with the language of instruction of the institution rather than the formal language of the country in which the institution is located.

Moreover, although one might expect international requests to be made in English, this is not necessarily the case in the Arab world, where international requests are conducted in Arabic (as was evident from the transactions in Lebanon).

The language of materials is assumed to be the language of transaction unless the user specifies otherwise. Fig. 4 illustrates the language of the materials requested that the user requested in each country. In Japan, no one specified the language of materials requested. In Lebanon, the language of materials requested was not specified in most requests, but when it was specified, requests were made for materials in both English and

**Figure 1**  
**Academic Background of Users Per Country**



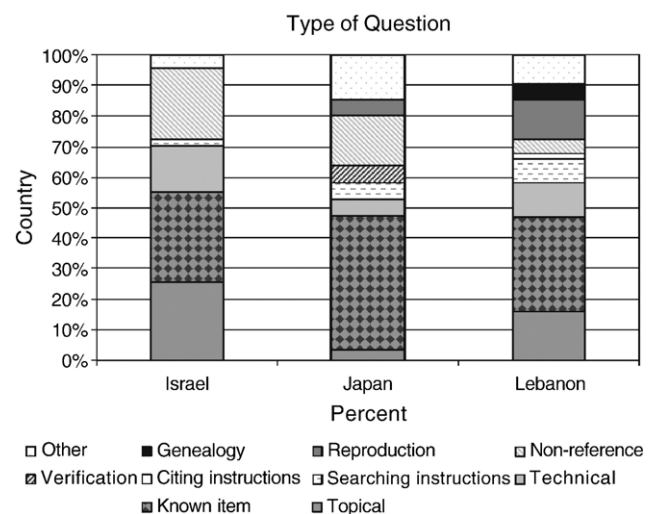
Arabic. The language of materials requested in Lebanon was based on assumptions the librarians made about the country of residency of the users (and the formal language of that country), in addition to the language of transactions. In Israel, however, users are required to indicate the language of materials on the Web form. Although transactions were mostly conducted in Hebrew, many of the users specifically requested materials in English, Hebrew, or in multiple languages.

**Librarians' Responses**

Analysis of the librarians' responses in the three countries reveals differences and similarities. Table 4 summarizes the results for the three countries on each of the librarian variables.

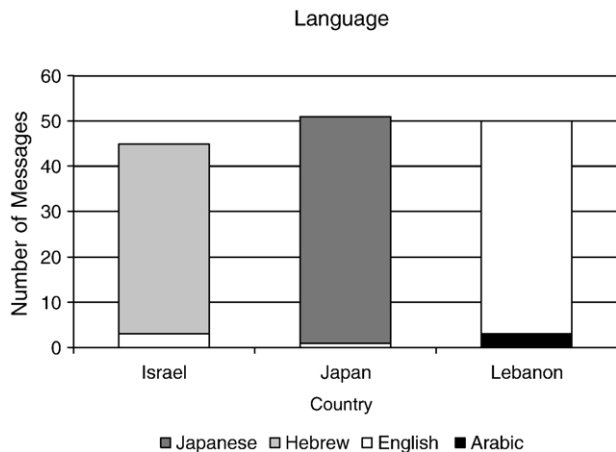
Librarians in Lebanon reiterate the user requests in their responses more than in any of the other two countries (forty-three responses (86 percent) in Lebanon, thirteen responses (29 percent) in Israel, and four responses (8 percent) in

**Figure 2**  
**Percent of Messages for Each Type of Question Per Country**





**Figure 3**  
**Language of The Reference Transactions in**  
**Each Country**



Japan). In Japan, librarians more frequently included their search history in the response (eighteen responses (35 percent) in Japan, seven responses (14 percent) in Lebanon, and three responses (7 percent) in Israel); the Japanese also apologized (six responses) more frequently than in Israel (two responses) or Lebanon (one response). Yet, in Israel librarians included concluding remarks in their response more frequently than librarians in Japan or Lebanon did (sixteen responses (36 percent) in Israel, nine responses (18 percent) in Japan, and six responses (12 percent) in Lebanon). In all three countries, many of the librarian responses included follow-up, yet it was much more common in Japan (eighteen responses (35 percent)) than in Israel (thirteen responses (29 percent)) or Lebanon (fourteen responses (28 percent)). Finally, the number of messages librarians sent in response to the request (to the user or among the librarians) differed among the three countries: two or more messages were most frequent in Israel (eighteen responses (40 percent)), compared with Japan (thirteen responses (29 percent)) or Lebanon (six responses (12 percent)). Yet, in Japan, they were mainly due to collaborative effort among the librarian (five responses (11 percent) in Japan compared to none in Israel and one response in Lebanon), while in Israel they were referrals from one librarian to another, mainly when transactions involved non-reference requests (seven responses (16 percent) in Israel, four responses (8 percent) in Japan, and three responses (6 percent) in Lebanon).

In short, the results from these three countries indicate both resemblance and disparity. For example, the inclusion of instruction and follow-up comments in the librarians' responses was similar across all three countries. A possible explanation for these findings rests on the shared professional culture of librarians across the world. Yet, many differences have been identified among the countries. An interesting finding is the collaborative effort that was identified in Japan. Transactions in Japan are answered by a group of librarians as a collaborative effort rather than one individual librarian, and involve many messages of consultation and information sharing among the librarians in the process. While many transactions in Israel also

involved more than one message sent by the librarians, this was due to referrals of requests from one librarian to another in order to provide an accurate response to the user. The collaborative effort represents a collectivist culture;<sup>51</sup> an aspect that should be considered when designing systems for global virtual collaborative virtual reference service.

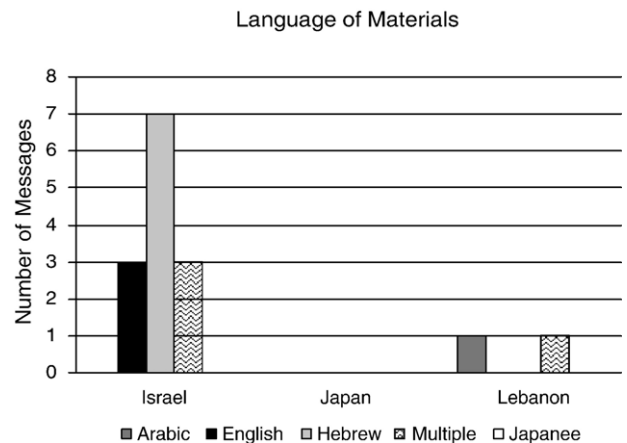
**“Transactions in Japan are answered by a group of librarians, as a collaborative effort, rather than one individual librarian, and involve many messages of consultation and information sharing among the librarians in the process.”**

To sum up, different user demographics and types of questions were identified. These differences emerged from the variations in user needs and the perceptions of the library and reference librarians in the three countries. The librarians' responses varied across countries while maintaining the professional culture in the way requests were handled. The collectivistic nature of collaborative reference work was unique to Japan.

#### CONCLUSIONS AND IMPLICATIONS

This study initiates a new area of research. It expands the analysis of virtual reference to a more global context and contributes to international and comparative librarianship. It illustrates differences in virtual reference practices in academic libraries in three countries. More research is needed to identify the diverse needs of users, libraries, and librarians in virtual reference environments around the globe. This study describes cases from countries that are underrepresented in the virtual reference literature. The researchers also developed a coding

**Figure 4**  
**Language of the Materials the User Requested in**  
**Each Country**  
**(In Japan, no One Specified the**  
**Language of Materials Requested)**



scheme that could be used as a model in subsequent studies; in particular the question taxonomy for international reference services could serve as the basis for future comparative analysis.

This study identifies several challenges that may become evident upon implementation of global collaborative virtual reference services. The findings suggest that it will be necessary to incorporate culturally specific attributes into virtual reference to support collaborative work as was exemplified in the librarians' collaborative efforts in Japan. Interfaces in multiple languages are required, especially in countries where more than one main language is practiced (e.g., Arabic, English, Hebrew, and Russian in Israel; and Arabic, English, and French in Lebanon). This study also illustrates the importance of including several features in the service request form, particularly background/status of the user, language of materials requested, time period of materials requested, and type of materials requested. Users of the virtual reference services described in this study do not usually volunteer these potentially useful pieces of information unless they are asked to do so.

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**“The findings suggest that it will be necessary to incorporate culturally specific attributes into virtual reference to support collaborative work as was exemplified in the librarians' collaborative efforts in Japan.”**

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Future research should expand this study and include other countries and more libraries per country. Comparisons with English speaking countries would also be valuable. It is likewise important to address the best mechanism for routing questions to libraries in other countries.

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