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Pay (No) Attention to the Man Behind the Curtain: The Effects of Revealing Institutional Affiliation in a Consortial Chat Service

Portez (ou ne portez pas) attention à la personne derrière le rideau : les effets de la révélation de l'affiliation institutionnelle dans un service de clavardage consortial

Kathryn Barrett et Sabina Pagotto

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Résumé de l'article

Cette étude vise à comprendre comment les usagers d'un service de clavardage consortial perçoivent le service fourni par les membres du personnel qui ne sont pas affiliés à la bibliothèque d'origine de l'utilisateur. Les chercheurs ont examiné 293 sessions de clavardage du service « Clavardez avec nos bibliothécaires », un service de référence virtuelle consortial fourni aux bibliothèques universitaires de l'Ontario, Canada. Des tests d'indépendance du chi carré ont été effectués pour examiner la relation entre l'insatisfaction des usagers et les sessions où l'opérateur du service a révélé qu'il travaillait à une autre bibliothèque que celle de l'utilisateur. Des variables modératrices ont été étudiées y compris le type d'utilisateur, le type de question et les comportements de l'opérateur tels transférer la session, référer à autrui, avouer un manque d'expertise et dire « non » à l'utilisateur. Les chercheurs ont constaté que lorsqu'un opérateur révèle qu'il travaille à une institution qui n'est pas celle de l'utilisateur, il est plus probable que les usagers soient insatisfaits s'ils sont des étudiants diplômés, si leur question est liée à la recherche, si l'opérateur n'offre pas de transférer leur session et si l'opérateur ne déclare pas qu'il manque d'expertise sur le sujet de la session. Ces résultats suggèrent que les opérateurs doivent être conscients du contexte et des relations lorsqu'ils révèlent des informations au sujet de leur affiliation. Les usagers peuvent percevoir que les opérateurs d'autres bibliothèques manquent de connaissance sur leur bibliothèque locale, ou ils peuvent être confus ou se sentir aliénés en recevant des informations « d'arrière-scène » au sujet du personnel qu'ils perçoivent être inutiles. Les chercheurs recommandent de mettre en avant et de renforcer la relation de l'utilisateur avec sa bibliothèque d'origine et son personnel.

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Portez (ou ne portez pas) attention à la personne derrière le rideau: les effets de la révélation de l'affiliation institutionnelle dans un service de clavardage consortial

Kathryn Barrett
Social Sciences Liaison Librarian
University of Toronto Scarborough Library
kathryn.barrett@utoronto.ca

Sabina Pagotto
Client Services and Assessment Librarian
Scholars Portal, Ontario Council of University Libraries
sabina@scholarsportal.info

Abstract / Résumé

This study aims to understand how users within a library consortium perceive chat service provided by staff members who are unaffiliated with the user's home library. The researchers examined 293 chat interactions from Ask a Librarian, a consortial virtual reference service provided to university libraries across Ontario, Canada. Chi-square tests of independence were performed to explore the relationship between user dissatisfaction and instances where the chat operator revealed a mismatch in institutional affiliation between the operator and the user. Moderating variables in the relationship were investigated, including user type, question type, and operator behaviours like transferring the chat, making a referral, revealing a lack of expertise, and saying no to the patron. The researchers found that when an operator revealed that they work at a different institution than the user, patrons were more likely to be dissatisfied if they are graduate students, if their question is research-related, if the operator does not offer to transfer the chat, and if the operator does not state that they

lack expertise on the chat topic. These findings suggest that chat operators should be mindful of context and relationships when revealing information about their affiliation. Users may perceive operators from other institutions as lacking knowledge about their local library, or they may be confused or alienated when receiving “behind the scenes” information about staffing that they perceive as unnecessary. The researchers recommend emphasizing and strengthening the user’s relationship with their home library and local library staff.

Cette étude vise à comprendre comment les usagers d’un service de clavardage consortial perçoivent le service fourni par les membres du personnel qui ne sont pas affiliés à la bibliothèque d’origine de l’usager. Les chercheuses ont examiné 293 sessions de clavardage du service « Clavardez avec nos bibliothécaires », un service de référence virtuelle consortial fourni aux bibliothèques universitaires de l’Ontario, Canada. Des tests d’indépendance du chi carré ont été effectués pour examiner la relation entre l’insatisfaction des usagers et les sessions où l’opérateur du service a révélé qu’il travaillait à une autre bibliothèque que celle l’usager. Des variables modératrices ont été étudiées y compris le type d’usager, le type de question et les comportements de l’opérateur tels transférer la session, référer à autrui, avouer un manque d’expertise et dire « non » à l’usager. Les chercheuses ont constaté que lorsqu’un opérateur révèle qu’il travaille à une institution qui n’est pas celle de l’usager, il est plus probable que les usagers soient insatisfaits s’ils sont des étudiants diplômés, si leur question est liée à la recherche, si l’opérateur n’offre pas de transférer leur session et si l’opérateur ne déclare pas qu’il manque d’expertise sur le sujet de la session. Ces résultats suggèrent que les opérateurs doivent être conscients du contexte et des relations lorsqu’ils révèlent des informations au sujet de leur affiliation. Les usagers peuvent percevoir que les opérateurs d’autres bibliothèques manquent de connaissance sur leur bibliothèque locale, ou ils peuvent être confus ou se sentir aliénés en recevant des informations « d’arrière-scène » au sujet du personnel qu’ils perçoivent être inutiles. Les chercheuses recommandent de mettre en avant et de renforcer la relation de l’usager avec sa bibliothèque d’origine et son personnel.

Keywords / Mots-clés

chat reference; consortia; dissatisfaction; staffing models; user perceptions

référence virtuelle, clavardage, consortium, insatisfaction, modèles de dotation, perceptions des usagers

Introduction

As library services move to online environments, the relationship between a library user and the personnel at their library becomes more opaque. When a user clicks on a button to pay an overdue fine, flag a broken link in the library catalogue, or request an article through interlibrary loan, they are probably not thinking about the people who receive and process these transactions at the library.

Chat reference is an exception to this dynamic. While the interactions take place entirely online and rarely include the face or voice of either the user or the chat operator, chat is still a human interaction. Despite the stereotype of the question “are you a robot?,” as chat services have become more common, users rarely ask this and generally seem to understand that they are chatting with an individual working at their campus library (Radford, Radford, Connaway & DeAngelis, 2011; Zhang & Mayer, 2014).

However, the person responding to the chat may not actually work at the user’s campus library. Collaborative or consortial chat reference services are a popular solution for libraries that want to extend their reference hours beyond their local capacity (Weak & Luo, 2014). In exchange for answering questions from other institutions’ users, they can rest assured that their own users continue to get high-quality research help even when the library is closed.

While the benefits of consortial chat reference are clear in terms of capacity and cost-efficiency, the effects on the quality of service are less clear. Evidence is mixed on whether answers provided by other libraries are as accurate, complete, or thorough as users can expect from their home library (Brown, 2017; Hyde & Raymond, 2006; Kwon, 2006; Meert & Given, 2009; Pomerantz, Luo, & McClure, 2006).

One factor that is almost entirely missing from the discussion is how library users themselves perceive the service that they receive from other institutions, or the practice of collaborative staffing more generally. This point becomes more salient as libraries move into more areas of enhanced collaboration—such as shared catalogues and discovery services—that require similarly shared (although less visible to end-users) staffing.

This study seeks to open the conversation by examining the relationship between user dissatisfaction and user awareness of the collaborative staffing model in one academic consortial chat service. The factors that mediate user dissatisfaction under these circumstances can help shed light on users’ perceptions of staffing in online library services.

Literature Review

User Perceptions of Consortial Services

There is little research on library users’ perceptions of collaborative services, perhaps because libraries do not always make the distinction between local and consortial services obvious to their users. As Gatten (2004) noted in a study on user perceptions of OhioLINK institutions, “each academic library provides OhioLINK’s services to their users as they deem best. In other words, some Ohio academic libraries seamlessly blend the presentation of locally provided library services with OhioLINK-provided services while other institutions promote the OhioLINK ‘brand’ as a value-added resource” (p. 224).

However, collaborative services may increase satisfaction even if users are not aware that, behind the scenes, they are supported consortially. A modified LibQUAL+ survey of OhioLINK libraries found scores higher than the aggregate North American scores, suggesting that something about these OhioLINK institutions results in a perception of higher service quality, but no causal link could be drawn (Gatten, 2004). Whether or not users were aware of OhioLINK's existence, or that consortial services were provided by OhioLINK, was unclear and would have varied by institution. The increased satisfaction could occur because centralizing some library functions allows for a wider range of uses without compromising more traditional functions such as library space (Shoham & Klain-Gabbay, 2019).

One of the types of consortial services where the collaboration is inherently more obvious to the user is interlibrary loan (ILL). Users are already aware that their requested material is coming from another institution, so joint programs or systems for managing ILL requests tend to be fairly transparent about their collaborative nature. McGillivray, Geenberg, Fraser, and Cheung (2009) involved ILL users, particularly faculty members, in the rollout of a new consortial ILL service among Ontario universities, collecting and responding to feedback on a regular basis. Because of this tight integration, the users almost immediately saw benefits of the consortial service, including quicker turnaround times.

However, with the exception of ILL, collaboration between institutions is generally seamless and invisible to the user. Successful consortial services frequently rely on staff expertise and relationships rather than technical mediation.

User Perceptions of Consortial Chat Service Quality

Collaborative chat reference services require library staff to respond to questions from users who are affiliated with a different institution or home campus. This can present challenges for chat operators when users pose questions requiring local knowledge—the practical, collective knowledge that is rooted in a particular place and based on immediate experience (Geertz, 1983, p. 75). Bradley Wade Bishop has written extensively about this concern. He refers to chats involving local knowledge as location-based questions and defines them as questions that concern a particular geo-referenceable site (Bishop, 2011). Such questions typically focus on the attributes of a library location, like policies, services, or collections (Bishop, 2012, 2013). They account for a significant proportion of chat volume: Across eight studies, location-based questions made up 10–69% of interactions, for an average of 35% of total questions (Berry, Casado, & Dixon, 2003; Bishop, 2011, 2012; Bishop & Torrence, 2008; Côté, Kochkina, & Mawhinney, 2016; Hyde & Raymond, 2006; Kwon, 2007; Sears, 2001).

Research investigating the quality of chat operators' responses to location-based questions has found mixed results. Chats requiring local knowledge are answered less completely than non-local queries (Kwon, 2007). Referral rates for location-based questions are higher than for other question types, with operators relying on referrals as a strategy to handle questions when they are matched with patrons from a different institution (Bishop, 2011; Bishop, Sachs-Silveira, & Avet, 2011). This can undermine the

effectiveness of the consortial staffing model, as user satisfaction with referrals is lower than for completed chats (Kwon, 2006). However, the correctness of responses to location-based questions does not differ significantly between local and non-local librarians (Bishop, 2012).

Few studies have directly investigated patrons' perceptions of responses to location-based questions. Instead, research has focused on patron satisfaction with collaborative and consortial service more broadly. Overall, exit surveys from collaborative chat services in public and academic library contexts are positive, although satisfaction is lower among patrons with location-specific questions (Kwon, 2007; Rawson, Davis, Harding, & Miller, 2012).

User Perceptions of Chat Reference Staffing Models

Little research on user satisfaction has been conducted concerning perceptions of virtual reference staffing models. Wharton & Mann (2020) found no change in user satisfaction when a behind-the-scenes staffing model switch meant that chat was no longer always staffed by librarians but rather by non-MLIS-holding library staff. This suggests that the chat service's staffing model matters less to users than their individual interactions with operators. An in-depth investigation of user preferences for different virtual reference services found that library users, particularly faculty members, favoured "personalness" in their reference interactions, referring to "the level of closeness of an interaction" (Mawhinney, 2020, p. 5). Chat was considered a highly personal interaction, even though the user did not know who they would be chatting with in advance. The importance of personalness was also a reason that users preferred emailing their liaison librarian or particular library staff for a specific function, rather than a generic library email address.

Similarly, minimal research has been performed comparing satisfaction with chats in which patrons are paired with staff who are affiliated and unaffiliated with the user's home institution. Hill, Madarash-Hill, and Allred (2007) compared user satisfaction with chat service provided by local librarians, librarians from partner libraries in the local area, and chat staff that were outsourced from Tutor.com. The local librarians received higher satisfaction scores than external librarians overall, but the satisfaction scores of external librarians rose over time in certain categories, indicating that non-local librarians' performance improves as familiarity with other library locations grows.

Barrett and Pagotto (2019) also compared chat service provided by "home" staff and operators from partner libraries in the area, but their research concerned user dissatisfaction. They found no significant difference in user dissatisfaction when patrons are served by local chat operators compared to partner chat operators. However, there was a statistically significant relationship between user dissatisfaction and revealing a mismatch in institutional affiliation between the chat operator and the user. User dissatisfaction was higher among patrons when the operator revealed during the chat that they did not work at a library affiliated with the user's university or on their home campus. The current study aims to explore why user awareness of shared staffing

influences user dissatisfaction by investigating moderating variables in the relationship between user dissatisfaction and institutional mismatch reveals.

Context/Background

The Ontario Council of University Libraries (OCUL) is a consortium representing the libraries of all 21 universities in Ontario, Canada. Scholars Portal is OCUL's digital service arm, with the largest member, the University of Toronto Libraries, acting as the service provider. Scholars Portal supports a wide range of content repositories, member services, and technical services in the areas of collections, resource sharing, research services, and digital preservation.

Launched in 2011, Ask a Librarian is a virtual reference service managed by Scholars Portal that connects students, faculty members, and researchers from participating university libraries across Ontario with real-time library and research assistance through chat. The service reaches approximately 400,000 full-time equivalent students and handles roughly 25,000 chats per year. Since 2014, the service has also been offered in French under the name *Clavardez avec nos bibliothécaires* (Chat with our Librarians) at bilingual institutions.

Ask a Librarian staffing is managed through a collaborative model in which libraries provide staffing hours relative to their student populations and service usage patterns. During evenings and weekends, staffing is supplemented by part-time virtual reference operators (VROs), generally second-year library and information science students or recent graduates, hired by OCUL directly. User questions are handled by operators from their own institution if possible, or by operators from other institutions or VROs if that institution is off shift.

While the branding is reasonably consistent across participating institutions (a similar logo, modified with each institution's school colours), it is not immediately obvious that the service is a collaborative one. During the time of the study, five of the 13 participating institutions explicitly stated in their "about chat" section that the service involved other partners; the other eight institutions did not mention this aspect. Then, even if that information was present, some institutions had a landing page to launch the chat from so that all users actually saw the "about chat" section; others allowed users to launch the chat from multiple different pages on the library website, so users were not necessarily seeing the "about chat" section.

In 2017, a joint research team at Scholars Portal and University of Toronto Libraries began a major research project assessing the Ask a Librarian service. This major transcript analysis project covered a wide range of questions, including factors that are associated with dissatisfaction in chat interactions (Logan, Barrett, & Pagotto, 2019), the appropriateness of Ask a Librarian's policies and service model (Barrett & Pagotto, 2019), and the relationship between teaching behaviours and satisfaction (Barrett, Logan, Pagotto, & Greenberg, 2020). During the course of this research, the authors were intrigued by the finding that users were not more likely to be dissatisfied when

served by chat operators from another library—unless they were made aware of this institutional mismatch. The researchers then investigated the literature on this subject to see if any others had similar findings and found none. After hypothesizing what other factors might be at play in this relationship between mismatch reveal and dissatisfaction, the researchers re-analyzed the data, guided by the following research questions:

1. Are some types of users more likely to be dissatisfied when they discover they are being served by an operator from another institution?
2. Are some question types more likely to lead to dissatisfaction in this circumstance?
3. Is dissatisfaction more likely to occur when the mismatch reveal comes during a chat where the question was not fully answered (indicated by transfer, referral, admitted lack of expertise, or saying no)?

Methodology

Data Collection and Sampling

This study examined chat transactions from June 1 to December 1, 2016, a period during which 9,424 chats took place on Ask a Librarian. To initiate a chat, users completed a mandatory question form that requested their name, institutional affiliation, status (e.g., student, faculty member), and question. The responses to the form were saved by the chat software and associated with chat metadata (such as the operator's name and institutional affiliation) and the complete chat transcript.

At the end of the chat, users had the opportunity to complete an optional exit survey, which included four questions related to satisfaction. 1,395 (14%) of the interactions during the study period included a completed exit survey. Only chats with completed exit surveys were eligible for sampling.

The institutional affiliation of the user and operator were automatically recorded by the chat software in the chat metadata. The researchers used this data to create a variable to record whether the user and the operator came from the same institution (affiliation match) or whether they came from different institutions (affiliation mismatch). The authors selected the chats with completed exit surveys in which there was an affiliation mismatch, creating a sample of 293 chats.

Data Preparation

The researchers obtained approval from the University of Toronto's Research Ethics Board and OCUL's Data Working Group to conduct this study.

The researchers compiled the responses to the mandatory question form, the chat session metadata, and the exit survey responses from the chat software into an Excel spreadsheet. The authors removed all instances of identifiable information, such as

individuals' names and the institutions they are affiliated with, from both the Excel spreadsheet and from within the complete chat transcripts.

Variable Selection

The following variables were necessary to answer the research questions:

User Type

Users were required to state their status at their home institution in the mandatory question form at the start of the chat. The options were: undergraduate student, graduate student, faculty member, staff member, alumni, and other.

Question Type

Users were asked to describe their initial question in the mandatory question form at the start of the chat. The initial question was coded according to a schema developed by the University of Toronto Libraries and Scholars Portal (Maidenberg, Greenberg, Whyte-Appleby, Logan, & Spence, 2012). The question type categories are accounts, citation, facilities, e-resources, computing, miscellaneous, non-library, policies, research, and writing.

Operator Behaviours

Through transcript analysis, the researchers recorded whether the operator engaged in any of the following actions or behaviours at any point in the chat:

- **Institutional mismatch reveal:** The operator disclosed that they did not have the same institutional affiliation or home campus as the user.
- **Transfer:** The operator transferred the chat to another operator for any reason.
- **Referral:** The operator recommended that the user contact another service point or individual.
- **Lack of expertise:** The operator admitted they could not help the patron with their question based on their skill set or expertise.
- **Saying no:** The operator made the user aware that their information need could not be completed.

Dissatisfaction

The researchers created a variable to record whether the user was dissatisfied or not dissatisfied. Users were considered dissatisfied if they answered at least one of the four exit survey questions related to satisfaction with a neutral or dissatisfied response. Users were considered “not dissatisfied” if they answered all four exit survey questions with a satisfied response.

The four exit survey questions related to user satisfaction are listed below. Responses in bold were identified as dissatisfied those in italics were identified as neutral, and those with no text effects were identified as satisfied.

1. The service provided by the librarian was:
 - a. Excellent
 - b. Good
 - c. *Satisfactory*
 - d. **Poor**
 - e. **Very poor**
2. The librarian provided me with:
 - a. Just the right amount of assistance
 - b. **Too little assistance**
 - c. *Too much assistance*
3. This chat service is:
 - a. My preferred way of getting library help
 - b. A good way of getting library help
 - c. *A satisfactory way of getting library help*
 - d. **A poor way of getting library help**
 - e. **A last resort for getting library help**
4. Would you use this service again?
 - a. Yes
 - b. **No**

Coding

Question Type

As part of the larger University of Toronto Libraries/Scholars Portal project assessing the Ask a Librarian chat service, transcripts were coded for question type by two members of the research team using an Excel spreadsheet. To assess inter-coder agreement, the researchers coded an initial test set of 42 transcripts and reached a substantial level of agreement as measured by Cohen's Kappa, $K = 0.794$. After discussing differences in coding, the researchers coded a second test set of transcripts and achieved near perfect agreement, $K = 0.876$. Having established a high level of inter-coder agreement, each transcript in the study sample was coded for question type by a single researcher.

Operator Behaviours

As part of the larger Ask a Librarian assessment project, transcripts were coded for 30 variables hypothesized to influence user dissatisfaction, including the five operator behaviours in the present study: institutional mismatch reveal, transfers, referrals, lack of expertise, and saying no. Four members of the research team coded a test set of 15 transcripts according to a draft codebook using a coding form that fed into a spreadsheet. The researchers met to discuss differences in coding choices and then coded a second test set made up of 15 chat transcripts. The researchers assessed inter-coder agreement using a predetermined threshold of 80% average pairwise

percent agreement. During this second round of test coding, all study variables met this threshold: institutional mismatch reveal at 93.3%, transfer at 100%, referral at 85%, lack of expertise at 83.3%, and saying no at 95%. Having achieved a high level of inter-coder agreement, all transcripts were coded for operator behaviours by a single researcher.

Data Compilation and Analysis

After coding was completed, the data from the question-type coding spreadsheet and the transcript coding form was merged with the spreadsheet containing the responses to the mandatory question form, the chat session metadata, and the exit survey responses.

A series of Pearson chi-square tests of independence were performed in SPSS. The researchers tested the significance of the relationship between institutional mismatch reveal and dissatisfaction, with user type, question type, transfers, referrals, lack of expertise, and saying no as moderator variables. A significance level of $p < 0.05$ was set a priori.

Results

Data Characteristics

All of the chats in this study involved chat operators and users who were affiliated with different institutions or home campuses, creating a sample of instances of institutional mismatch. This mismatch was revealed to users in a limited number of chats ($n = 46$, 15.7%).

Table 1

Summary of Chats by Institutional Mismatch Reveal

Variable: Institutional mismatch reveal	<i>n</i>	%
Institutional mismatch reveal	46	15.7
No institutional mismatch reveal	247	84.3

Users within this study were primarily undergraduate ($n = 167$, 57.0%) and graduate students ($n = 72$, 24.6%). The majority of patron questions were research based ($n = 164$, 56.0%). Users were classified as dissatisfied in over half of the chats ($n = 160$, 54.6%).

Table 2
Summary of Chats by User Type

Variable: User type	<i>n</i>	%
Undergraduate student	167	57.0
Graduate student	72	24.6
Other	30	10.2
Alumni	14	4.8
Faculty	10	3.4

Table 3
Summary of Chats by Question Type

Variable: Question Type	<i>n</i>	%
Accounts	26	8.9
Citations	28	9.5
E-resources	24	8.2
Facilities	6	2.0
Computing	5	1.7
Miscellaneous	9	3.1
Non-library	4	1.4
Policies	25	8.5
Research	164	56.0
Writing	2	0.7

Table 4
Summary of Chats by User Dissatisfaction

Variable: User dissatisfaction	<i>n</i>	%
Dissatisfied	160	54.6
Not Dissatisfied	133	45.4

Referrals occurred in over a third of chats ($n = 110$, 37.5%), but transfers were much less frequent ($n = 14$, 4.8%). Only a small number of operators stated that they lacked the expertise to answer the patron's question ($n = 48$, 16.4%), but they frequently said "no" to the patron ($n = 139$, 47.4%).

Table 5
Summary of Operator Behaviours

Variable	Behaviour occurred		Behaviour did not occur	
	<i>n</i>	%	<i>n</i>	%
Referral	110	37.5	183	62.5
Transfer	14	4.8	279	95.2
Saying no	139	47.4	154	52.6
Stated lack of expertise	48	16.4	245	83.6

Statistical Analyses

The main chi-square test of independence in this study showed a significant relationship between the operator behaviour of revealing an institutional mismatch and user dissatisfaction, $\chi^2(1, N = 293) = 3.896$, $p = .048$. Users were more likely to be dissatisfied if the operator disclosed that they were affiliated with a different university or campus than the user.

Table 6
Summary of Main Chi-Square Test of Independence

Variable	Pearson chi-square value (χ^2)	Degrees of freedom (df.)	Significance (p)
Mismatch reveal	3.896	1	.048*
Note: * $p < 0.05$			

Both characteristics of the chat acted as significant moderating variables in the relationship. A chi-square test investigating institutional mismatch reveal, user type, and user dissatisfaction revealed a significant relationship for graduate students, $\chi^2 (1, N = 293) = 6.933, p = .008$. A second chi-square test with question type as the moderating variable found a significant association for research questions, $\chi^2 (1, N = 293) = 11.091, p = .001$. These results indicate that when an institutional mismatch reveal is made by the operator, user dissatisfaction is more likely to occur when the patron is a graduate student or the user's question is research-related.

An examination of mismatch reveals across types of research-based questions uncovered significantly higher dissatisfaction for known title questions relating to journals and other periodicals and serials, $\chi^2 (1, N = 293) = 6.546, p = .011$. Questions involving requests for help searching a database or website approached but did not reach significance, $\chi^2 (1, N = 293) = 3.074, p = .080$. No other forms of research-based questions significantly moderated the relationship between institutional mismatch reveals and user dissatisfaction.

Two of the operator behaviours had a moderating effect on the relationship between institutional mismatch reveal and user dissatisfaction. For the moderating variable of transfers, a significant association was found when a transfer did not take place in the chat, $\chi^2 (1, N = 293) = 4.304, p = .038$. For the moderating variable of lack of expertise, a significant relationship was shown when the operator did not reveal a lack of expertise about the user's question, $\chi^2 (1, N = 293) = 7.008, p = .008$. These results suggest that when an institutional mismatch reveal takes place during a chat, the patron is more likely to be dissatisfied if the operator does not make a transfer to another operator or does not admit a lack of expertise after the mismatch reveal is made.

For the moderating variable of referrals, failing to make a referral approached significance, $\chi^2 (1, N = 293) = 3.193, p = .074$. Saying "no" to the patron was not significant as a moderator variable. These tests suggest that making a referral or saying "no" after a mismatch reveal takes place does not affect the likelihood of patron dissatisfaction.

Table 7
Summary of Chi-Square Tests of Independence by Moderating Variable

Moderating variable	Response	Pearson chi-square value (χ^2)	Degrees of freedom (df)	Significance (p)
User type	Undergraduate student	.683	1	.409
	Graduate student	6.933	1	.008**
	Other	.140	1	.708
	Alumni	9.33	1	.334
	Faculty	1.667	1	.157
Question type	Accounts	1.222	1	.269
	Citations	1.394	1	.238
	E-resources	.000	1	1.000
	Facilities	.667	1	.414
	Computing	.139	1	.709
	Miscellaneous	N/A†	N/A†	N/A†
	Non-library	N/A†	N/A†	N/A†
	Policies	1.634	1	.201
	Research questions	11.091	1	.001**
	Writing	N/A†	N/A†	N/A†
Question sub-type	Research: Known titles (journals,	6.546	1	.011*

	periodicals, serials)			
	Research: Database or website searching	3.074	1	.080
Transfer	Transfer	.294	1	.588
	No transfer	4.304	1	.038*
Lack of Expertise	Stated lack of expertise	1.517	1	.218
	No stated lack of expertise	7.008	1	.008**
Referral	Referral	.000	2	.985
	No referral	3.193	1	.074
Saying No	Said no	.934	1	.334
	Did not say no	.270	1	.604
<p>Note: * $p < 0.05$. ** $p < 0.01$. † Chi-square test of independence could not be computed because one of the variables was constant (there was no variation in responses for that moderating variable, i.e. no mismatch reveals took place, or users were uniformly dissatisfied or not dissatisfied).</p>				

Discussion

Previous research by the authors has shown that there is no significant relationship between an institutional affiliation mismatch for the chat's participants and user dissatisfaction (Barrett & Pagotto, 2019). It is only user awareness of the mismatch that is related to dissatisfaction: Revealing a mismatch increases the likelihood of user dissatisfaction. In general, these findings suggest that chat operators should be thoughtful about revealing institutional mismatches. The context of these reveals, including why the operator must reveal the mismatch and the relationship that the operator builds with the user, are important to consider.

Research Question #1

Are some types of users more likely to be dissatisfied when they discover they are being served by an operator from another institution?

With respect to patron status, the relationship between mismatch reveals and user dissatisfaction only exists among graduate students. Graduate students are more likely to be dissatisfied when the reveal of an institutional mismatch occurs. There is no relationship between the variables for the other user statuses (undergraduate students, faculty, alumni, other).

This may be an issue of expectations or of graduate students' specific needs. Graduate students are more likely than faculty members to be of the generation whose first preference for research help is online, but they have more in-depth and detailed research needs than undergraduates. The "personalness" of chat, as discussed by Mawhinney (2020), may play a role here, as graduate students may feel that they have a relationship with their home library. They may be put off by the idea that they are not in fact interacting with someone from their library who is familiar with their needs or who can provide tailored research assistance.

Research Question #2

Are some question types more likely to lead to dissatisfaction in this circumstance?

The relationship between institutional mismatch reveal and user dissatisfaction is significant for research questions but not for other question types. Research questions were more likely to result in dissatisfaction when an institutional mismatch was revealed. Parallel to the above observations about the needs of graduate students, research questions may require more in-depth and specialist knowledge than other types of library questions received over chat. When a mismatch is revealed, users may question why they are being matched up with chat providers at other institutions who do not have a strong understanding of their home library's advanced research support services or specialized resources.

Among all of the research-related questions, only known title questions for periodicals and serials were significantly associated with dissatisfaction when an institutional mismatch reveal occurred. The relationship may be correlational rather than causal. Looking at instances where there was an institutional mismatch, but it was not revealed, there was no relationship between dissatisfaction and this question type. User dissatisfaction is therefore, related to the reveal of the mismatch and not the mismatch itself. This suggests that the high level of user dissatisfaction for reveals with known title questions is not a case of operators being unfamiliar with other institutions' collections or catalogues. Instead, operators may be more likely to reveal the mismatch when there is a problem. For example, the operator may have to admit to being from another institution if there is an institution-specific technical problem like an out-of-order proxy server, if the operator accidentally searched their own institutions' holdings and

recommended a resource the user cannot access, or if they are less familiar with print holdings and other alternatives if the user is searching for a periodical that is not available electronically. This may contribute to a perception that librarians from other institutions are unfamiliar with local resources, a theme in the free-text comments left by dissatisfied users after a mismatch reveal. For example:

The operators are not [University] librarians, and hence are not aware of the resources at [University], which was the subject of my question.

This is the second time I have used this service and both times I was connected to someone from another university. I'm not sure how this helps library users to find resources since both people in the conversation are similarly informed.

Alternatively, it is possible that revealing institutional mismatch does lead directly to user dissatisfaction with research questions. Perhaps revealing the mismatch in a way that seems irrelevant to the user causes them to question the service model or their relationship with their library: "Why is someone from X institution answering my question? Where is everyone from my library?"

Research Question #3

Is dissatisfaction more likely to occur when the mismatch reveal comes during a chat where the question was not fully answered?

The researchers initially hypothesized that in chats where the user's question was not fully answered, as indicated by a transfer, a referral, admitted lack of expertise, or saying no, dissatisfaction would be more likely. However, the findings complicate this picture. Users were more likely to be dissatisfied if the operator did *not* make a transfer to another operator or did *not* reveal a lack of expertise after the reveal was made. Making a referral and saying "no" did not have a significant impact.

This suggests that when revealing an institutional mismatch, offering an alternative (such as a transfer or referral) may mitigate dissatisfaction. Admitting to a lack of expertise may also help mitigate dissatisfaction by providing context as to why the operator is unable to help. Revealing the mismatch without any of these mitigating factors may cause the user to question why they are being helped by this particular individual. This situation may also indicate a specifically local question that was not sufficiently answered but for which no alternatives were provided, but since the research did not focus on local questions, this is speculation.

Limitations and Further Research

This is a preliminary study, looking at a narrow slice of data initially collected to answer a broader set of research questions concerning user dissatisfaction. The study's relatively small sample size meant that for some moderating variables, there was no variability in responses. For the question type variable, the researchers could not run

the chi-square tests for certain question types with small counts because responses were constant.

It is worth noting that question type was determined based on the user's initial question; the nature of follow-up questions within the chat was not taken into consideration when coding for question type. In addition, the research did not consider whether the user queries were local or non-local questions. Further research may want to explore whether the local nature of questions moderates the mismatch reveal-dissatisfaction relationship.

This research infers how users perceive one element of a chat interaction based on satisfaction scores for the interaction as a whole. Satisfaction was reported in an exit survey, which was not presented to users who simply closed the chat window instead of clicking the "end chat" button. The level of satisfaction with one particular interaction is also not necessarily reflective of the perception of the service as a whole.

Not all consortia are the same, and not all collaborative chat services are the same. A chat service that is transparent about the collaborative aspect of its service model, or that operates within a consortium that is well-known and perhaps well-branded, would likely have a very different rate of institutional mismatch reveals and user reactions to reveals.

This research may have implications for shared or collaborative staffing models for other types of jointly offered services, such as shared library service platforms. OCU launched Omni, a shared library services platform, for 16 of its 21 members (13 of which are also Ask a Librarian participants). Unlike Ask a Librarian, Omni is specifically branded as a collaborative initiative, and users can tell when they are searching their own collections and when they are searching the shared provincial collection. Libraries across OCU are making their messaging to users standardized and consistent at an unprecedented level. The findings of this paper suggest that library staff should not assume that users are already aware of collaborations taking place. To avoid causing dissatisfaction, service providers should emphasize the user's relationship with their home library, rather than revealing the mechanisms of how collaboration takes place behind the scenes.

The conclusions drawn here are a starting point on a topic that has received very little attention to date. Institutional mismatch reveal is only one of the factors that contribute to dissatisfaction, and chat providers should take a holistic approach towards their service standards. Future research examining user perception through a qualitative method, such as interviews or focus groups, could shed a great deal of light on these issues.

Conclusion

Ask a Librarian users provide similar satisfaction scores when served by operators at their institution or partner institutions but are more likely to be dissatisfied when an

institutional mismatch is revealed. This relationship is strongest among graduate students, when asking research questions, and when the reveal is not accompanied by a local alternative or a piece of context. Although this study used observational data and researchers cannot say with any certainty what users were thinking or feeling, free text comments left in the exit survey and knowledge gleaned from previous literature suggest possible explanations. Users may perceive operators from other institutions as having a lack of knowledge of their local library resources; users may feel strongly about their relationship with their own library and the people who work there, and users may be confused or put off when receiving “behind the scenes” information that they perceive as unnecessary. Overall, Ask a Librarian has made some changes in training based on this research: Operators are encouraged to be thoughtful about revealing an institutional mismatch, revealing this only when relevant and providing additional context. We hope that this research can help inform communications with library users.

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