



Burke Library Wayfinding Study Report

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1. Introduction

Over the past decade, Columbia University Libraries/Information Services (CUL/IS) has made significant efforts toward improving the accessibility of its services and collections. The Libraries instituted formal programs for introducing students, through tours and orientation sessions, to collections and librarians. In addition, the Libraries provide instruction on locating materials, people, study spaces, and technology. Despite these efforts, however, anecdotal evidence suggests that library visitors are often confused and unable to find staff offices, stacks, and elevators. In addition, the use of multiple classification schemes for some library materials can make it especially challenging for library users to access printed materials. To better understand why users are confused, lost, or unable to find materials, we decided to explore particular points of failure experienced by visitors to the Burke Library as they navigate the building's spaces.

2. Project aims

The purposes of this assessment project were to measure the effectiveness of the (1) directional and locational signs at the Burke Library at Union Theological Seminary and (2) Burke Library's orientation session for incoming students at Union Theological Seminary (UTS). In particular, we were interested in identifying points of failure in the process of finding people, places, and things as users navigate the library building without any assistance from staff at service desks. Library staff recently revised a location guide and temporarily updated some signage within the library. Before investing in permanent signage, we wanted to make sure that the new, temporary signage was clear and helped users. To that end, a visitor wayfinding study was conducted. The results of this study will inform (1) the design of a coherent signage program to direct library users to people, spaces, and library materials, and (2) changes to the library's orientation session for incoming UTS students.

3. Methodology

This study takes an ethnographic research approach and uses direct observation to determine whether users can successfully navigate a variety of spaces and find materials. The study was conducted in two stages—first in the fall of 2013 (November 1-8, 2013) to set benchmarks and get feedback, and second in the fall of 2014 (October 8-17, 2014) to test the improvements we had made and to seek additional feedback before more permanent signage is created.

During each stage, six participants took part in the study (12 total). All participants were new UTS students who had been to the library a couple of times, but were not yet familiar with the facilities (stacks, administration offices, etc.). Almost all had participated in a library orientation session for incoming UTS students the previous August. All participants were recruited in-person or by email, and each received a \$25 gift card from the University bookstore for participating in the study.

The individual participants were given a series of predefined tasks to complete, such as locating a book on a shelf or finding a service desk, that required them to navigate through the building. The 2013 and 2014 participants were all given the same tasks. A facilitator read the tasks aloud to the participants, prompted them to narrate their actions completely, and accompanied them as they completed the tasks. A recorder followed the participant and the facilitator to observe,

take notes, and record search strategies and failure points using written notations on a map. This process was completed twelve times over the entire duration of the two-part study. Columbia University's Institutional Review Board approved the project, including the recruitment email, list of tasks, and the facilitator's script.

4. Results from first round of participants (2013)

The average time that participants spent to complete the series of tasks was 32.83 [33] minutes, ranging from a minimum of 24 minutes to a maximum of 45 minutes. The participant who completed the experiment in 24 minutes reported that he had participated in the library orientation session and, therefore, had been told that there were two book stack locations and classification schemes (i.e., Union and LC).

The following table displays the list of tasks, ranked by the average task completion time (ATCT) from highest to lowest, for users who completed each task successfully.

Table1: The average task completion time (ATCT) for users who completed the tasks successfully (S) and/or needed a hint (H), in order according to the length of ATCT.

#	Task	S	H	ATCT (mins)
1	Find a specific book in the LC stacks: <i>Gerhard von Rad</i> , by James L. Crenshaw, Burke [UTS] LC Stacks, BS1161.R3 C73.	6	5	7.00
9	Find a bound periodical volume: <i>Journal of Biblical Literature</i> v.130 (2012). CLIO, the Columbia Library's online catalog indicates that the location is Burke [UTS] Periodicals (Non-Circulating), and that the section is shelved alphabetically by title. Can you please find v.130 (2012)?	4	4	4.75
5	Find a reference book: <i>New Interpreter's Bible</i> , Burke [UTS] Reference (Non-Circulating), BS491.2 .N484 1994 v.1.	6	2	4.33
3	Find Anthony's office in the administration wing of the library.	6	0	3.33
2	Find a specific book in the Union Stacks: <i>Julius Wellhausen and the Synoptic Gospels</i> , by John Timmer, Burke [UTS] Union Stacks, FK T584.	4	2	3.00
10	Find the latest (most current) issue of <i>The Christian Century</i> . How would you go about finding this issue?	5	2	2.17
6	You're working on the third floor and have a question about how to use a database. Where can you go to get help? Go there and ask for help.	6	0	1.83
4	Browse the new books shelves and select a book you might want to read. Please continue to talk aloud as you go through the process of completing this task.	6	0	1.67
11	Find the Special Collections Reading Room and introduce yourself to Betty Bolden, our Reader Services Assistant.	6	0	1.33
7	Find a scanner and determine the first step in using it.	6	0	0.83
8	Find the Writing Center and make a note of the hours that it is open.	6	0	0.50

The task that took the longest time to complete was to find a specific book in the LC stacks, followed by finding a bound periodical volume. For almost all tasks that involved finding materials on the shelves, participants needed a hint (H) from the facilitator to successfully complete their tasks (S).

5. Observations from the first round of testing (2013)

1. Overall, the newly designed location guide was described as useful and impressive, but it needs to be placed more strategically at points of need.

- A. All features of the location guide were received well. Overall, participants liked its design, and found it to be an effective and easy-to-use tool for wayfinding in the library. One of the participants commented: "The location guide is very helpful."
- B. Participants quickly learned about the building, where print materials are located, and expressed trust in the location guide as they progressed through their tasks. One participant commented: "I am now beginning to trust the location guide." Another participant commented: "Now I know where it is having gone to the wrong stacks in the beginning."
- C. A couple of concerns that were raised about the location guide were minor issues and can easily be modified or enhanced without changing any fundamental aspects of the map design (see below section 6, Recommendations (part 1)).
- D. Most participants frequently expressed concern about the placement of the location guide in some spaces. At the beginning of the first task, none of the participants could find the location guide without the aid of the facilitator. Facilitators directed all participants towards the location guide at some point during their first task. Once the participants learned about its existence from the facilitator, they looked for it throughout the experiment, although it was not always easily seen at the point of need. One of the participants asked: "Where is the handy-dandy location guide?"
- E. Some participants could not always see the location guide easily from a distance, and described the lettering on it as too small to read.
- F. Not knowing where they were was a source of confusion for some participants; they wanted the location guide to display their location. "You are here" is a common feature in print and online maps, and participants expected to see this information in the location guide.
- G. Participants spotted inconsistencies in signage/labels that are used for identification of spaces. Discrepancies were noted between the location guide and signage present in rooms and open spaces. Participants expected signage within the library to match the labels in the location guide. For example, use of two different labels -- "Main Reading Room" and "Reading Room" -- for the same room.
- H. The staff directory with photos of the Burke Library staff was well-received. One of the participants suggested placing the location guide on the same wall as the staff directory.

2. There were a couple of impasses or "bump points," where participants routinely stopped, as they could not determine which way to go.

- A. Most participants stopped immediately after entering the main reading room to look for a sign to help them decide which way to go. Participants mentioned difficulty orientating themselves within the reading room. The absence of call number range signs made it difficult for participants to determine where to begin looking for their assigned book. In the absence of any labels/signage (other than spine labels), participants approached shelves immediately on the left side of the room to begin looking for the book. Sometimes they received a hint from the facilitator.
- B. Most participants stopped immediately after entering the current periodicals and journals area, either from the elevator or stairs, and experienced difficulty deciding where to go next. In the absence of signage, it was difficult for participants to imagine where to begin looking for their assigned journal.
- C. Most participants stopped or slowed down immediately after entering library level 1 from the stairs or elevator to look for the new books shelves. Not all participants knew that the new books were arranged across the first level in three different bookshelf units.

3. All participants expressed a general confusion with wayfinding in the library building.

- A. Regardless of how useful the location guide was for participants during the experiment, all participants expressed confusion about the complexity of the building.
- B. During the experiment, the aspect that caused the most confusion was the non-uniform floor levels across the various inter-connected spaces. Participants were not able to understand how stacks on the mezzanine floors were connected with the stairs and the elevator to the rest of the floors in the building.
- C. All participants praised the labels next to elevator buttons.

4. Locating books and journals on the shelves was generally confusing or frustrating.

- A. The use of two different classification schemes (Union and Library of Congress) to organize books on the shelves created confusion and frustration for participants.
- B. The organization of print journals (current journals which are housed on L2 [library level 2] vs. bound journals which are housed on S1 and S2 [stacks levels 1 and 2]) created confusion and frustration for participants.
- C. Participants had a difficult time figuring out that the reference collection was shelved in the main reading room (L3).
- D. Some users expected materials to be organized the same way that they are organized in public libraries (e.g. reference books shelved behind the information desk) or bookstores (e.g. in alphabetical order by title or author last name).
- E. None of the participants were able to read the call numbers effectively. They were confused by the alphabetical and numerical orders in call numbers, which did not make sense to them (e.g. they did not understand why numbers “jump”).

5. Finding people and help desks was easy.

While almost all participants found the call numbers difficult to use to find printed materials, they were able to find people and help desks easily.

6. The physical environment appeared to affect participants.

- A. Participants described the library as aesthetically beautiful.

- B. Observations about the general environment were mentioned a few times (dark and cold stacks, confusion about boundaries for users).
- C. Some participants could not locate the light switches in the stacks.
- D. Sometimes book carts blocked signage, and participants could not see the stack floor numbers as they walked up and down the stairs.

6. Recommendations (part 1)

1. Improve the signage at the Burke Library.

- A. Post additional location guides throughout the library (e.g., at the entrance to the library, in the book stacks, in the stairwells, next to the photo directory on library level 1).
- B. Increase the size of the location guide.
- C. Use consistent, uniform names for spaces throughout all library signage and literature (e.g., main reading room *or* reading room).
- D. Add call number range signage to the reading room area where the reference collection is shelved.
- E. Add explanatory signage on library level 2 where currently received periodical issues are shelved.
- F. Improve new book signage by adding qualifiers like “shelf or unit 1 of 3.”
- G. Add signage to help users find light switches in the book stacks.
- H. Move reshelving carts and trucks away from signage so that users can clearly see signs.
- I. Investigate designing “you are here” maps on each floor.

2. Improve the content conveyed during the library orientation session for incoming UTS students.

- A. Identify more effective ways to explain the three shelving/classification schemas used at the Burke Library (LC, Union, bound periodicals which are shelved from A-Z by title).
- B. After improved instruction regarding the meaning of various lines of a call number, have participants find an LC book in the stacks.
- C. Explain the variations in spaces at the Burke Library. For example, there are two areas of the library—the main library area and the bookstacks area. In the main library area, there are five levels of “library” space (L1-5). In the bookstacks area, there are five levels of “stacks” space (S1-5). The levels/floors of the two areas are not contiguous or lined up, which is why the elevator opens in the front (for library levels) and in the back (for bookstacks levels).

7. Observations from the second round of testing (2014)

Based on the feedback received during the first round of testing, Burke staff made improvements to the location guide and to the library orientation session for incoming UTS students. These changes were in place by August 2014. The wayfinding experiment was repeated in October of 2014. Overall, the average time study participants needed to complete the experiment was 26.47 minutes, *an improvement of 6.36 minutes* from the previous year’s average (32.83 minutes). During the second round of testing, the time needed to complete the tasks ranged from a minimum of 20 minutes to a maximum of 35 minutes.

1. The redesigned location guide was described as useful and impressive.

- A. As indicated in the first round of the study, all features of the location guide were received well. Overall, all participants liked its design, and found it to be an effective and easy-to-use tool for wayfinding in the library building.
- B. As in the first round of the study, not knowing where they were continued to be a source of confusion for some participants and they suggested that the location guide display their location. “You are here” is a common feature in print and online maps, and participants in the second experiment also expected to see this information in the location guide.

2. There were still impasses or “bump points,” where participants routinely stopped, as they could not determine which way to go.

There were still two tasks that remain challenging to participants: (1) finding a bound periodical volume and (2) finding a specific book in the LC stacks. The latter has improved significantly as evidenced by the shorter average task completion time (ATCT, see table 2) and decreased number of hints. As for the former, although the ATCT has not improved, more students were able to complete the task successfully with fewer hints from the facilitators.

3. Participants continued to express a general confusion with wayfinding in the library building.

Regardless of how useful the location guide was for participants during the first and second experiment, all participants expressed confusion about the complexity of the building.

4. Locating books and journals on the shelves remained generally confusing or frustrating.

- A. The organization of the print journals (current journals which are housed on L2 vs. bound journals which are housed on S1 and S2) continues to be a source of confusion and frustration for participants.
- B. The majority of the participants were not able to read the call numbers effectively. Participants were confused by the alphabetical and numerical orders in call numbers.

8. Recommendations (part 2)

These recommendations build on those found in section 6. Recommendations (part 1) and are numbered accordingly. Both sets of recommendations should be followed when making future adjustments to signage and orientation sessions.

3. Consider new ways to help users find print periodicals.

Print periodicals are still an important part of research in theological and religious studies. Burke staff will need to continue to find effective ways to explain how to find print periodicals. Possible strategies include:

- A. Spending more time during orientation explaining the location of print periodicals.
- B. Conducting a “soup to nuts” workshop for finding journal literature, from using abstracting and indexing tools like ATLA Religion Database to finding a volume on the shelf or placing an interlibrary loan request.
- C. Move print journal volumes that have an online equivalent to ReCAP thereby reducing the overall size and increasing the browsability of the periodical collection.
- D. Move more currently received journal subscriptions from print to electronic to reduce the number of current print journals, thereby increasing their discoverability and use.

4. Identify new strategies to reduce users’ confusion regarding the classification schemes used within the bookstacks (Library of Congress, Union, and a separate shelving scheme for bound print journal volumes by title from A-Z).

Possible strategies may include:

- A. Having a hands-on exercise during orientation with an incentive to find an LC book and a Union book.
- B. Hosting a workshop on how to find materials in the Burke stacks, which would include an overview of the LC and Union call number systems.
- C. Gradually move older Union classification materials to ReCAP to reduce the number of volumes in this classification scheme over time.

5. Seek guidance and funding to redesign some of the signage in the Burke Library to include “you are here” signage.

6. Initiate a “roaming” or “roving reference” model whereby staff regularly walk through the stacks and other parts of the library to ask users if they are finding what they need.

7. Identify ways to simplify call number reading.

Possible strategies include:

- A. Posting tutorials on the Burke or CUL/IS website.
- B. Creating a “how to read a call number” guide to give to users and to post in the stacks.
- C. Having a hands-on exercise during orientation which would an incentive to find an LC book and a Union book.

9. Conclusion

Overall, the project team accomplished our overarching goal to understand more clearly why users are confused, lost, or unable to find materials. The wayfinding study was a particularly helpful tool for gathering this information. Implementing the recommendations in sections 6 and 8 of this report will help alleviate many of the points of confusion experienced by participants.

In the summer of 2014, we used the results of the first wayfinding study to improve our signage and orientation session for incoming UTS students. In the fall of 2015 and beyond, we will use the results of the second round of the study to continue to improve signage and orientation.

The Burke Library thanks Nisa Bakkalbasi for her assistance with this project!

Table2: The Average Task Completion Time (ATCT) for users who completed the tasks successfully (S) and/or needed a hint (H). There were six participants in each of the two phases of the study (November 2013 and October 2014).

		November 2013			October 2014		
#	Task	S	H	ATCT (mins)	S ₂	H ₂	ATCT ₂ (mins)
1	Find a specific book in the LC stacks: Gerhard von Rad, by James L. Crenshaw, Burke [UTS] LC Stacks, BS1161.R3 C73.	6	5	7:00	6	3	4:18
2	Find a specific book in the Union Stacks: Julius Wellhausen and the Synoptic Gospels, by John Timmer, Burke [UTS] Union Stacks, FK T584.	4	2	3:00	5	2	1:59
3	Find Elizabeth's (previously Anthony) office in the administration wing of the library.	6	0	3:33	6	0	1:10
4	Browse the new books shelves and select a book you might want to read. Please continue to talk aloud as you go through the process of completing this task.	6	0	1:67	6	1	0:55
5	Find a reference book: New Interpreter's Bible, Burke [UTS] Reference (Non-Circulating), BS491.2 .N484 1994 v.1.	6	2	4:33	6	0	2:49
6	You're working on the third floor and have a question about how to use a database. Where can you go to get help? Go there and ask for help.	6	0	1:83	6	0	1:15
7	Find a scanner and determine the first step in using it.	6	0	0:83	5	0	0:36
8	Find the Writing Center and make a note of the hours that it is open.	6	0	0:50	6	0	0:30
9	Find a bound periodical volume: Journal of Biblical Literature v.130 (2012). CLIO, the Columbia Library's online catalog indicates that the location is Burke [UTS] Periodicals (Non-Circulating), and that the section is shelved alphabetically by title. Can you please find v.130 (2012)?	4	4	4:75	6	2	5:18
10	Find the latest (most current) issue of The Christian Century. How would you go about finding this issue?	5	2	2:17	6	1	2:42
11	Find the Special Collections Reading Room and introduce yourself to Betty Bolden, our Reader Services Assistant.	6	0	1:33	6	0	0:37