

UC-eLinks Direct Linking Usability Report

UC-eLinks Project

March 5, 2009

Report Author: Jane Lee, CDL
Editor: Felicia Poe, CDL
On-Site Coordinator: Laura Calverley, UC Berkeley

Report URL: http://www.cdlib.org/inside/assess/evaluation_activities/docs/2009/UC-eLinks_directLinking_jan2009.pdf

Table of Contents

1	INTRODUCTION.....	3
2	SETTING THE STAGE: GRADUATE RESEARCHERS.....	4
2.1	WHAT USERS DO.....	4
2.2	WHAT USERS WANT	4
2.3	LIBRARY WEBSITE AS AN ACCESS POINT	4
2.4	WHY GOOGLE SCHOLAR?.....	5
3	UC-ELINKS: DON'T MAKE ME THINK	7
3.1	SIMPLIFY, SIMPLIFY, SIMPLIFY	7
3.2	UC-ELINKS HEADER INFORMATION	9
3.3	THE YELLOW BUTTON.....	9
3.4	WINDOW MANAGEMENT	10
4	LINKING WITHIN A FRAME, A.K.A DIRECT LINKING	11
4.1	IS DIRECT LINKING AN IMPROVEMENT OVER THE SERVICE MENU WINDOW?	11
4.2	DO USERS KNOW HOW TO GET TO REQUEST (AND OTHER SERVICES) FROM THE FRAME?.....	12
4.3	DO USERS MISS THE ABILITY TO CHOOSE THE VENDOR FOR THEIR ONLINE FULL-TEXT ARTICLE?	12
5	CONCLUSION	13
6	APPENDIX: UC-ELINKS USABILITY SESSION DETAILS	14
6.1	PURPOSE OF ASSESSMENT	14
6.2	PARTICIPANTS	14
6.3	ASSESSMENT DESIGN	14
6.4	DATA COLLECTION METHODOLOGY	15
6.5	TARGET OBJECTIVES	15

1 Introduction

In the past, the research process began with two, distinct phases: discovery and access. After determining a topic, a researcher would enter the discovery phase, in which he or she would look through library catalogs and article indices to identify resources that might pertain to his or her research. During this phase, the researcher would sift through records containing resource descriptions, not the resources themselves. Then, after assembling a list of promising records, the researcher would use these records to try to locate the resources in order to evaluate them. The goal of the researcher during this access phase was to get a physical copy of the resource.

The Internet and advancements in search engine technology and library information systems have made research easier in some ways and more difficult in others. The change that has the greatest implications for UC-eLinks – and for library services in general – is the collapsing of the discovery and access phases into a single workflow.

The desired end result of this new workflow remains the same, although most researchers now prefer an electronic version of a resource to a physical one. The process still begins with discovery, but once researchers start entering queries into a search engine and getting search results back, they want to be able to immediately evaluate the results. They repeat this search-and-evaluate cycle as many times as needed. Thus, the research workflow has evolved from search-then-evaluate to search-*and*-evaluate.

In search, the thing I'm really interested in
is getting there as quickly as possible to this
paper, so I can evaluate if I need it or if
not....

Ideally, users would never see a UC-eLinks window. They would go from their search results to the full-text of their desired article, and everything that UC-eLinks does would happen behind the scenes. Unfortunately, this is not technically feasible, so UC-eLinks has been designed to give researchers choices for getting to their desired resource. UC-eLinks deliberately and directly injects itself into the researchers' online experience with good intentions, but it may be giving users a decision-making opportunity that they don't want.

When users encounter the UC-eLinks window, they are at the point where they just want to see the article itself so they can decide whether or not to keep it for further review. If the article is not available online, then the only decision users want to make and could use help making is whether or not that particular article is worth working harder to get.

This report discusses these findings and more from a round of user interviews and usability tests that were conducted at UC Berkeley on January 29-30, 2009 with seven graduate students. Details about the participants and the study may be found in the Appendix.

2 Setting the Stage: Graduate Researchers

2.1 What Users Do

The graduate students we interviewed reported the following activities:

- Starting their research with Google, Google Scholar, and/or JSTOR
- Navigating to article databases from the library website
- Working remotely through a proxy server
- Saving entire PDFs, not just citations, to keep track of articles
- Printing articles to keep track of them

Most users we interviewed do not use citation management tools. All reported at least saving – if not both saving and printing – PDFs to keep track of articles, which they would use to build their bibliographies at a later time. One user expressed it as creating “a real paper trail.”

Working remotely is standard practice, although a couple of users reported having difficulty with the campus authentication system.

2.2 What Users Want

The graduate students expressed a desire for the following:

- Direct and easy access to full-text
- Recently published articles in full-text online
- Quick and easy determination of relevance
- PDFs over HTML for full-text

When viewing search results, users want to easily and quickly determine the relevance or usefulness of an article, and they use the title to help them make this judgment. They want to determine whether or not the article is worth trying to obtain. If the title looks promising, they may click on the UC-eLinks button directly. If they cannot decide whether or not to pursue the article from its title alone, then they might click on the title link for more information. Many users expect the hyperlinked title of an article to lead to full-text directly or to a page with more information about the article with a link to the PDF. Their experience using Google Scholar, where title links have often lead to full-text, most likely forms the basis of this expectation.

Users reported a preference for PDF over HTML versions of full-text, because they want to reference the original page numbers and to view the layout of articles as they were published. As Portable Document Format files, PDFs are also easier to save and exchange.

2.3 Library Website as an Access Point

Most users start their research with Google Scholar. The library website is a second choice for some users, a second step for others. Some users go to the library website only after their search has failed on Google. For these users, the library is a second choice. For others, it is a second step used to delve more deeply into their topic. Ease of use is one reason users start with Google. To paraphrase one user, the UC library makes articles available, but it doesn't help you find them. Google helps you find them. Another stated reason for using Google is that it captures

UC-eLinks Direct Linking Usability Report

useful resources on the web, such as materials on authors' sites, that are probably not available through traditional publishers.

Those who view the library website as a second step reported that they use Google for the introductory stage of research. They switch to the library website because "Google Scholar is not topically refined at all." It's "too wide of a net," if one wants to hone in on a topic. One user reported that he has never searched for a general topic on Pathfinder, UC Berkeley's catalog. He uses Pathfinder only to find specific items, and he expects those items to be on campus. He does not use Pathfinder for discovery.

2.4 Why Google Scholar?

Users believe the following about Google and/or Google Scholar:

- It is the best place to start if one is just beginning to research a topic.
- It's easier to use and more forgiving than the library website.
- It's more "efficient" to look for articles there than on the library website.

It's my last step [going to specific article databases from the library website], if I can't get it on the web. And there's a reason for that. It's just because it takes more clicks for me to get where I need to go to find the paper... In search, the thing I'm really interested in is getting there as quickly as possible to this paper, so I can evaluate if I need it or if not...

Going to the library database is fantastic when I know exactly what I'm looking for and where I'm likely to find it. But if I'm doing a broad search, and I don't know what I'm looking for necessarily, Google is the best place to start... The cost associated with the Google search is that once in a while I don't get the paper that I want even if I should have access to it... I haven't encountered any other drawbacks.

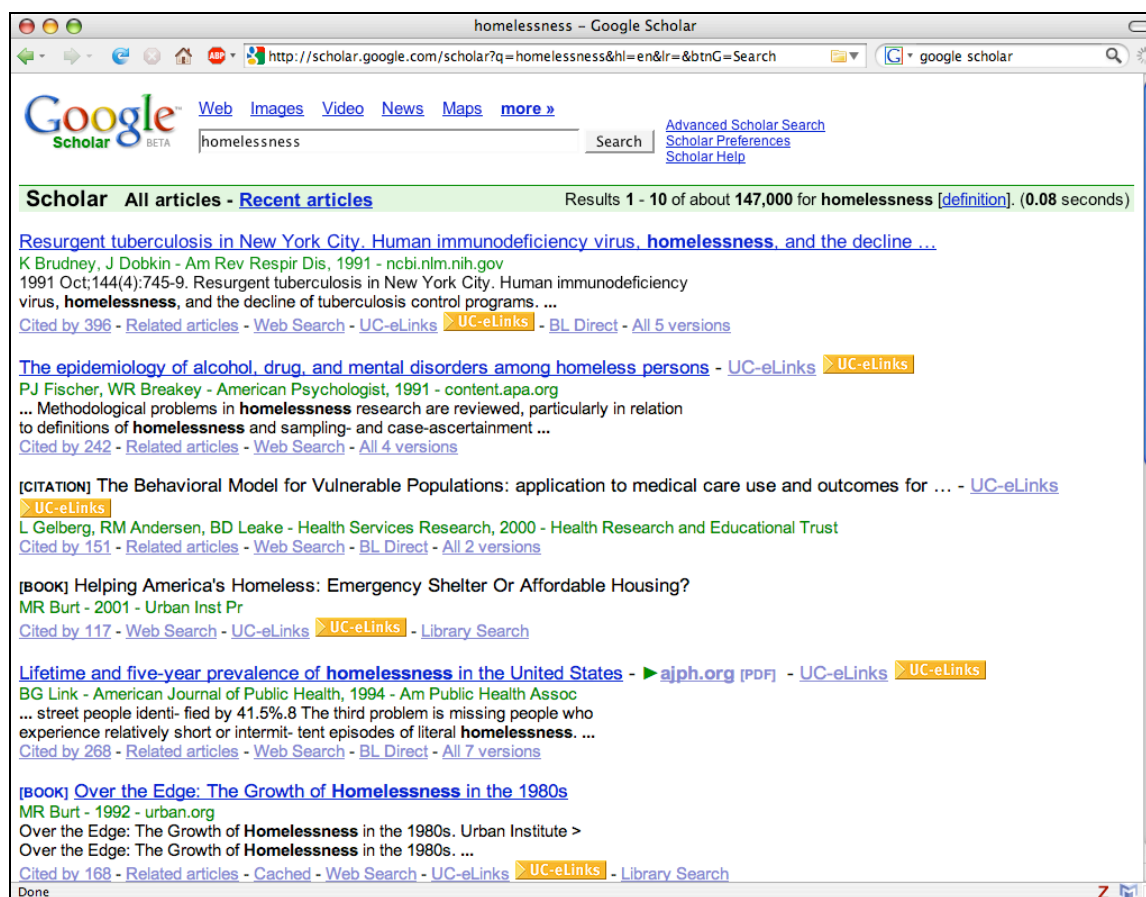
The library website is seen as another access point – like Google – and so it is judged against the same criteria as Google. For users, Google is easier, more forgiving, and more efficient than tools provided by the library. They perceive the cost of using Google to be that once in a while, Google does not provide access to a paper from a resource that has been licensed by UC. However, in those cases, the remedy is simple: go through the library website. One user avoids this problem by using UC-eLinks primarily from a library website. For him, UC-eLinks "links catalog to content."

UC-eLinks Direct Linking Usability Report

One important reason why users seem to be satisfied with their Google experience is because Google Scholar works with UC-eLinks, providing a gateway to UC holdings. Users recognize that the reason they can get to full-text articles from Google is because of the agreements negotiated between Google and the UC Libraries. The fact that UC-eLinks works from Google Scholar is key. To varying degrees, users understand that this is due to a relationship that has been established between the two, and they appreciate the service. The extent of users' understanding of this relationship was not explored in depth in this round, but users do know that a relationship exists.

I'm thrilled. When I found out you could do this integration with Google Scholar and UC-eLinks — I think that's the greatest thing. It's made my life a lot easier.

Figure 1: Google Scholar with the UC-eLinks Button

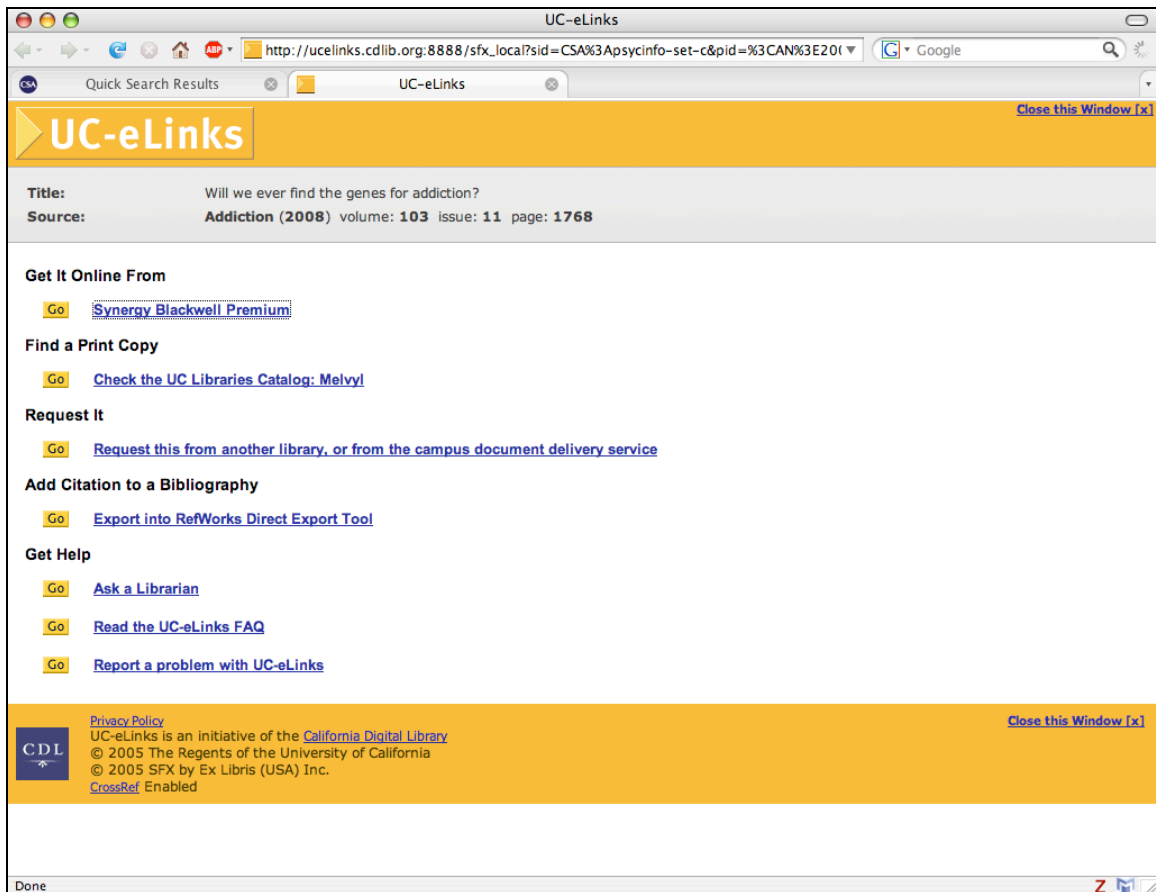


3 UC-eLinks: Don't Make Me Think

3.1 Simplify, Simplify, Simplify

When you first look at this website, you think there are six ways of finding this paper. But when I actually read it, there are basically two ways, maybe even one.

Figure 2: UC-eLinks Service Menu Window



The users we interviewed clearly expressed what they want from their research experience. They want to find and download full-text articles, and they don't want to have to jump through a lot of hoops to get them. Their comments can be distilled into the following imperatives:

1. Give me full-text to view and to download.
2. Don't make me have to think or choose. (I have more important things I want to spend my mental energy on.)

These two fundamentals underscore users' reactions to what we call the UC-eLinks service menu window. Many users reported never going below the "Get it online" option of the UC-eLinks

UC-eLinks Direct Linking Usability Report

service menu window. Moreover, users stated that the presence of an online option makes the rest of the services, especially “Find a Print Copy,” unnecessary and distracting. If the article is not available online, one participant said that he goes through the library’s website to find the article. Note that this user has either inadvertently overlooked the other service options or has made a conscious decision to go directly to the library website to look for his article in an article database.

The following interview excerpt captures the essence of what we heard about the UC-eLinks service menu window from all users interviewed:

I guess the big thing that I look at here is whether or not an online copy is available and then [if it’s not available online] – if it’s very important to me – whether the library has a copy of it. That’s only happened a couple of times.

First thing I’d look at is the title to make sure it’s actually the paper I think I’m looking at. And then I look at this list [two sources] of where I can get it online.

I don’t really look at these other sections. I know that there’s this tool, RefWorks, but I’ve never used it. I’ve only had to request a paper once, so I very rarely use this.

... And these bottom sections, I’ve never looked at these. I can see that it says “Ask a Librarian” or “Read the FAQ”, but I don’t think that I would need to do that at this stage.

Users want simplified choices and an uncluttered window. There are several aspects of the current window that complicate users’ experiences. First, users’ single-minded focus on obtaining full-text online naturally makes the other options seem superfluous. Some users take this one step further, saying that the presence of multiple options for online full-text forces them to make decisions they do not feel comfortable making. When faced with two online options, one user responded that he didn’t know why there were two and that “I have no way of knowing which would be better to choose” – unless one were JSTOR. The only decision that users want to make is whether or not to pursue an article that is not available online. And, one user observed that there isn’t enough information that would help him make that decision (e.g., the abstract) on the UC-eLinks service menu.

Users also made comments concerning the design and layout of the UC-eLinks window. One user suggested that the window could be improved by collapsing the three “Get Help” links into one, since he doesn’t find them very useful anyway. A few users pointed out that the presence of the hyperlinked “Go” buttons next to the hyperlinked options are, at best, unnecessarily redundant and, at worst, confusing. One user with web design experience called the use of the “Go” button an excuse for poor design.

Some of the labeling used in the window may force users to stop and think. One user found the “Find a Print Copy” and “Request It” options confusing.

Saying UC Libraries and another library – These two [Find a Print Copy and Request It] seem to

UC-eLinks Direct Linking Usability Report

overlap somehow because if it is another UC library you don't go to the library yourself, you, I guess, request it. So, it's not very clear what these two options are. I know what Melvyl is.... But so maybe this link [Request It] is looking for other libraries not just UC libraries.

Most users reported rarely or never using Request for journal articles. The prevailing attitude among users is that the majority of articles they need could probably be found online. In fact, one user recalled only two occasions where the desired journals were not available online.

Even if it is not true that most articles users want will be online, it doesn't matter. All that matters is that the user perceives that most everything he or she needs is available online. This perception will affect his or her expectations and behavior, and in the case of UC-eLinks, it renders all options, except the "Get It Online From" option, practically irrelevant. Furthermore, because the online options are the focus of users' attention, any "failures" in this section are more likely to affect users' attitudes toward the UC-eLinks service as a whole. For example, two users reported that when UC-eLinks doesn't list online options for articles they either already know are available online or find subsequently using a different search strategy, they lose trust in the service and may be less likely to click on the UC-eLinks button in the future.

3.2 UC-eLinks Header Information

Currently the UC-eLinks header contains the following metadata:

- Article title
- Journal title
- Volume
- Issue
- Page number(s)

Users want certain metadata about their article to be displayed in the header. Several noted the absence of author information and expressed that it is important information to have. One said that author serves as a mnemonic device for him. A couple of users thought that a complete citation in the header might be useful for cutting and pasting.

Users reported that they use the information provided in the header to verify that they are looking at the correct article and to help them locate the article, if UC-eLinks has failed to link to the article. When UC-eLinks did not lead directly to an article during testing, if the UC-eLinks header with the metadata did not appear, users either tried to recall the title, author, date, or journal from memory or used the browser's back button to return to a previous webpage to get that information again.

3.3 The Yellow Button

The UC-eLinks button serves as a visual cue for users, telling them that they may be able to get the article they want online. The yellow button is widely recognized by our users, and in previous studies, users reported that they prefer the button to a plain text link and look for the button when doing research online. In this study, at least one user noted the absence of the button in his Google Scholar results. He mentioned that his browser at home shows the "yellow button."

UC-eLinks Direct Linking Usability Report

Another user specifically mentioned the button when recalling the first time he saw UC-eLinks during a search session.

It's not the particular color.... It's *that* it was colored and a little button set off to the side of the article. The important facts were it said something that had to do with Berkeley or with the University of California and that it said the word 'link.' So those two things together indicated to me that if I want to get it online, that's where I go.

3.4 Window Management

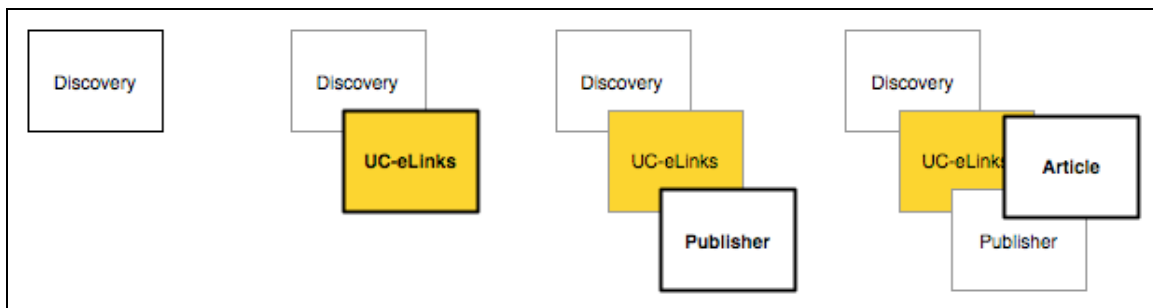
The UC-eLinks window generation behavior continues to vex users. Users expressed the following thoughts:

- It's a nuisance that while generating a new page every time, UC-eLinks only allows one service menu to be displayed at a time. If a user wants to see a number of articles, each new article should have its own UC-eLinks menu.
- “Doubly annoying” is that the generated windows are often too small, forcing users to resize the window in order to see its content.
- Using tabbed browsing helps manage windows.

One user commented that he likes that new pages load in the same window with Google Scholar. Another user who had a lot of trouble managing windows during the usability session stated that he doesn't like pop-ups and would rather have a new page load in an existing window or in a new tab.

UC-eLinks' behavior within Google Scholar may be preferable to users, because loading new pages in the same window allows users to rely on the browser's “back” button to orient themselves and navigate.

Figure 3: UC-eLinks Window Generation



4 Linking Within a Frame, a.k.a Direct Linking

4.1 Is direct linking an improvement over the service menu window?

Absolutely. Users want online full-text. Anything that gets them closer to instant, one-click access is considered an improvement.

This is different. It directly went to the website, which is better because I'm looking for the paper. And I click this and I find the paper... It directly came here. Of course it's better because I have the paper here.

Given what we have learned about users' research behavior, it is no surprise that they love direct linking. A few users commented on the inconsistency of how linked articles appeared – some didn't have a frame, others went to automatic download, etc. – but this did not appear to bother them.

Figure 4: Linked Article within a UC-eLinks Frame

The screenshot displays a web browser window with multiple tabs. The active tab is titled "UC-eLinks - Factors Associated With Incarceration History Among HIV-Positive Persons Experiencing Homelessness or Imminent Risk of Homelessness". The address bar shows the URL: http://ucelinks.cdlib.org:8888/sfx_local?sid=CSA:risk-set-c&pid=%3CAN%3E859725. The page content is framed within a yellow UC-eLinks header. Below the header, the article title "Factors Associated With Incarceration History Among HIV-Positive Persons Experiencing Homelessness or Imminent Risk of Homelessness" is displayed, along with its source "Journal of community health (2008) volume: 33 issue: 6 page: 434-443". The main content area features the SpringerLink logo and a "New!" badge. The article is from the "JOURNAL OF COMMUNITY HEALTH", published by Springer Netherlands. The authors listed are Cari Courtenay-Quirk, Sherri L. Pals, Daniel P. Kidder, Kirk Henny, and James G. Emshoff. The article is available in PDF (187.4 KB) and HTML formats. A "Find" box on the right allows searching within the content, journal, or issue. The bottom of the frame shows a "My Menu" section with links to Marked Items, Alerts, Order History, and Saved Items.

4.2 Do users know how to get to Request (and other services) from the frame?

No, but this may be a moot point. From the users' point of view, if they are already at the full-text article, there is no need to go to the UC-eLinks service menu window. When two users were asked how they would get to the UC-eLinks menu window from the frame, they clicked on the UC-eLinks logo in the upper-left corner, since clicking on a logo in the upper-left corner of a window is a de facto web standard for getting back to a "home" page. Others stated that they ignored the frame completely or did not notice the links in the upper-right at all.

Once users acquire the full-text of an article, that workflow thread is complete. If the direct link delivers full-text, then users see no need to view the UC-eLinks service menu window itself or any of the services on it. Furthermore, because users think about UC-eLinks only as a way to get to online full-text, they don't consider the UC-eLinks service menu as the "go to" place for the other services that may locate the article. In users' minds, UC-eLinks fulfills a very specific function in their research workflow. It gives them full-text *online*.

Recommendations: If a link to the service menu window is required from the frame, it should leverage the behavior of clicking the logo in the upper-left corner of the page to get back to a "homepage." Help lead users to the service menu window by making the UC-eLinks logo button display "more options" or a similar phrase on rollover. (To see how Amazon.com does this, examine the following figures or go to <http://www.amazon.com> and browse away from the homepage.)

Figure 5: Ready State



Figure 6: On Rollover



Note: Red oval added for emphasis.

In addition, reconsider the labeling and presence of the "UC-eLinks menu" link in the upper-right, since not only did it fail to attract any attention from users, but some users also found the term "menu" inappropriate for what they saw as "a list of links."

4.3 Do users miss the ability to choose the vendor for their online full-text article?

The only thing that matters is that there's a choice that works. I guess on occasion, some of these will not give me the paper. In that case, it's useful to have multiple options.... It is valuable to have multiple options in the event that some of them are less reliable sources.

The majority of users we interviewed did not miss the ability to select a specific vendor for full-text. Assuming that all PDFs are equal, if they get the full-text PDF, they are happy. However, this does not mean that users do not have preferences in terms of vendors. But, the ease of use of an

UC-eLinks Direct Linking Usability Report

interface matters most when one has to use it to locate an article. If the full-text article and PDF download are immediately available, then the user has gotten what they came for.

One user expressed that the reason the choice of vendor matters to him is because older journals may only have non-searchable PDFs. Another user qualified her answer, saying that if she is looking for a specific article, she just wants to be taken to the article. However, if she is doing a general search, she would prefer the ability to choose vendors, because she has interface preferences.

On the flip side, the presence of multiple vendor links may force users to make a judgment that they do not feel equipped to make. One novice UC-eLinks user complained that there are sometimes too many choices, which are presented as equal, even though they are not equal sources. This user would like to see the “best” choice in a large font to avoid having to look closely to figure out which one he wants. He would prefer a screen that requires less effort on his part to figure out which link to choose.

5 Conclusion

The original questions from the UC-eLinks team that prompted this assessment were the following:

1. Is direct linking an improvement?
2. Do users know how to get to Request from the direct link?
3. Do users miss the ability to choose vendors for a full-text article?

The previous section discussed the findings for these questions, and the quick answers are yes, no, and no, respectively. A closer look at users’ comments about UC-eLinks and library services revealed that the way researchers conduct their online research depends on a level of instant gratification that was not possible in the past.

This round of usability testing has shown that when direct linking works, it gets closer to fulfilling the promise of UC-eLinks for users, because it delivers what they need when they need it. In other words, with direct linking, UC-eLinks gets users to full-text at the appropriate point in their workflow. Many researchers we spoke with have adopted Google Scholar as their primary tool, because its integration with UC-eLinks supports their search-and-evaluate research workflow better than the library’s systems.

One user described the UC-eLinks experience as pressing a button and getting taken to a “platform” that gives list of links that shows ways in which to access articles. In other words, UC-eLinks is a “doorway to the different routes” for getting articles. This user further declared the UC-eLinks menu an intermediary step that isn’t useful, if the article is available online. What this study shows is that for most users, UC-eLinks is the way to get to online full-text – nothing more – and the more libraries can support and harmonize with their workflow, the greater impact they can have on guiding users to library resources and services.

6 Appendix: UC-eLinks Usability Session Details

6.1 Purpose of Assessment

The purpose of this round of assessment was to determine the usability of the new UC-eLinks direct linking window, as well as users' satisfaction with this new feature.

6.1.1 Key Questions

1. Is linking within a frame an improvement over the previous UC-eLinks menu?
2. Can users determine what their next step should be from the user interface?
3. Can users find the "hidden" service options when they need them?
4. How do users respond to the different actions that result from clicking the UC-eLinks button?

6.2 Participants

The primary audience for UC-eLinks is University of California students, faculty, and researchers. For this round of assessment, we recruited graduate students, who had used UC-eLinks in their research. They represented the following departments:

- Philosophy, 2nd Year
- Rhetoric, 3rd Year
- Slavic Languages and Literature, 3rd Year
- Rhetoric, 7th Year
- IEOR (Industrial Engineering and Operations Research), 7th Year
- IEOR (Industrial Engineering and Operations Research), 3rd Year
- Anthropology, 3rd Year

6.3 Assessment Design

Seven one-hour sessions, consisting of one participant, an interviewer, and an observer/note-taker, were held at UC Berkeley's Moffitt Library on January 29-30, 2009.

6.3.1 Task-Based User Interface Testing

Each participant was greeted by the facilitator and made to feel as comfortable as possible. The facilitator explained the purpose of the test, and participants were assured that the system was being tested, not them. The facilitator summarized test procedures and instructed participants on the "thinking aloud" protocol. At the end of the introduction, the facilitator told the participants about their right to stop testing at any time and asked them to sign consent forms. Participants were given a \$65 gift card for Amazon.com as a token of appreciation.

For the first part of the test, participants were asked about their research. Then, participants were asked to complete a series of tasks to the best of their ability. At the end of the session, the facilitator debriefed and thanked the participants for their efforts.

6.3.2 Observation

During the session, the observer took notes on any statements or actions made by the participant, as well as any signs of frustration or satisfaction from the participant.

6.4 Data Collection Methodology

During task-based user tests, data was collected using observation and the “thinking aloud” protocol.

Qualitative data collected include the following:

- Any unexpected steps taken by the participant during each task
- Any indications of frustration or satisfaction from the participant
- Any opinions of usability or aesthetics of the system expressed by the participant

6.5 Target Objectives

1. Determine user’s mental model of UC-eLinks, i.e., what he/she thinks will happen when he/she presses the UC-eLinks button.
2. Determine user’s impressions of the interaction flow when full text is available, but not through direct linking.
3. Determine user’s impressions of the direct linking interaction flow. Determine user’s opinions on how the direct linking frame does or does not mesh with his/her current model of UC-eLinks.
4. Determine user’s expectation and preference for what the link for getting to full text should look like. Determine whether or not a single, uniform link representation makes sense given the existence of the new direct linking frame.

Option 1: hyperlinked title of article
Option 2: hyperlinked UC-eLinks button
Option 3: hyperlinked UC-eLinks text label
Other options/labels?

5. Determine user’s attitude toward the UC-eLinks service menu window when the desired full text item is not available online.
6. Determine user’s preferred action(s) after reaching the direct linking window. Determine how the user verifies that this is the desired article.
7. Determine whether the user can find the “hidden” service options, such as Request.
8. Determine user’s opinion of the label for the UC-eLinks service menu link on the direct linking frame.
9. Determine user’s attitude towards the ability to choose vendors for a full text item.
10. Determine user’s likely action(s) if the promised full-text is not actually in place where it “should” be. Determine whether or not user can backtrack and reset their workflow.
11. Determine whether user has established a different mental model for UC-eLinks based on his/her interactions during the session. Determine user’s opinion on how well the new direct linking window fits into the system’s interaction flow.