Scherzo Usability Test Report:
Testing a FRBR Search Interface for Music

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Executive Summary

Scherzo is a search interface designed to allow searches against a FRBR-ized set of music records from the holdings of Indiana University.[1] The records were converted from MARC records used in Indiana University's OPAC (IUCAT).[2] This analysis compared Scherzo to IUCAT based on a set of tasks performed by participants in each system. The goals for this analysis were to see if one system performed more efficiently and effectively for participants and whether or not the FRBR-ized relationships proved beneficial.

While the FRBRization of musical works did not prove to be directly helpful for participants when completing tasks, aspects of Scherzo, some of which are connected to the FRBRized data, made it more intuitive and easier to use for finding scores and recordings. The following features all showed improvements over IUCAT:

- More details showing on the search results screen
- Ability to see browsing categories (for narrowing results or simply for context)
- Explicit focus on music content
- Specificity provided in the search form
- Ability to use the browser Back button and no login necessary
- More accessible structure of HTML headings to work through search results

The FRBRized MARC records afforded some gains in pulling out and relating names, instrumentation, and dates for the browsing facets but in order for the works to be supportive for evaluating search results, a different approach will be needed to provide work information in a way that is useful to users. Overall, the biggest advantage of Scherzo over IUCAT seen from this test was the ability to find and identify results quickly using people's names.

Introduction

The Variations/FRBR grant proposal specifies that the new FRBRized discovery interface will be assessed "by performing task-based user studies comparing discovery for music materials in the FRBRized Variations system with the previous version of Variations, traditional OPACs, and current music discovery software."[3] This report details an evaluation conducted to compare Scherzo, the discovery end-user interface developed to search against the FRBRized data of Variations, with IUCAT, Indiana University's online library catalog.

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[1] http://vfrbr.info/scherzo

[2] http://www.iucat.iu.edu

[3] Indiana University Digital Library Program. "Variations as a Testbed for the FRBR Conceptual Model." http://www.dlib.indiana.edu/projects/vfrbr/projectDoc/admin/Narrative.pdf

Methodology

The user-centered task-based analysis involved 13 participants – 8 graduate students and 5 undergraduates from the Indiana University Jacobs School of Music. Sessions were conducted individually. Participants were shown an Information Sheet, explaining the process for the session. (See Appendix A – Information Sheet) Then they were asked to complete a short survey about IUCAT and Variations usage and how they begin looking for music. These questions helped inform the development team about how often online research tools from Indiana University are used in comparison to all online research tools available. (See Appendix B – Pre-tasks Survey) The participants were then asked to complete five tasks, each in Scherzo and IUCAT. (See Appendix C – Task List) The tasks were constructed based on use cases developed over time from field studies, logs analysis, and observations/interviews of students, faculty, and staff within the School of Music. These use cases and tasks reflect common needs that users have when looking for scores and recordings while at IU.

Participants tried the same task on each system, alternating the first system used with each new task. The initial system used on Task 1 was also alternated between participants, to prevent results from being effected by any particular usage pattern. Video, audio, and screen capture were recorded to establish task times and paths taken. One participant was blind and offered to evaluate Scherzo for accessibility using screen reading tools on the participant's personal laptop. This participant followed the same protocol as the other participants, but no video, audio, or screen capture data was recorded for this participant's specific paths and task times. Information was gathered regarding accessibility of Scherzo in comparison to IUCAT, but this participant's data was not included with the 12 participants who were recorded.

Participants were asked follow-up questions after completing the tasks to gauge opinions regarding Scherzo and IUCAT and determine the usefulness of information provided in Scherzo. (See Appendix D – Follow-up Questions) Finally, participants were each given $20 compensation.

Quantitative Findings

In the survey, overall reported use of IUCAT was stronger than Variations (Fig. 1). This is not unexpected, given that the current implementation of Variations only provides access to a player for listening to music and creating bookmarks. Variations previously included a search but that functionality was disabled before the start of the 2010-11 academic year. Since Variations can no longer be used for discovery, IUCAT or other discovery tools (such as lists on course web sites or from the instructor) are the only methods to arrive at Variations.
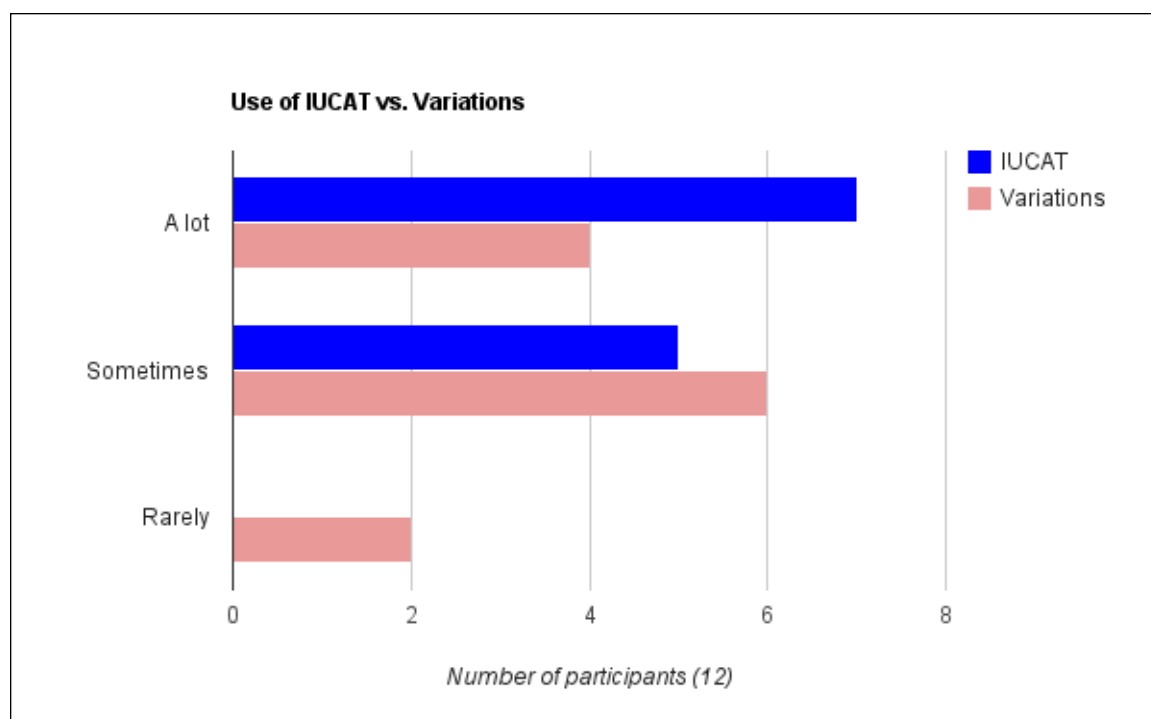
Figure 1. Reported Usage of IUCAT and Variations

Six of the eight graduate students reported using IUCAT "A lot" while only one of the four undergraduate students reported the same use of IUCAT. Four of the eight graduate students reported using Variations "A lot" compared to none of the four undergraduates. Neither system appeared to be used frequently by the undergraduate participants.
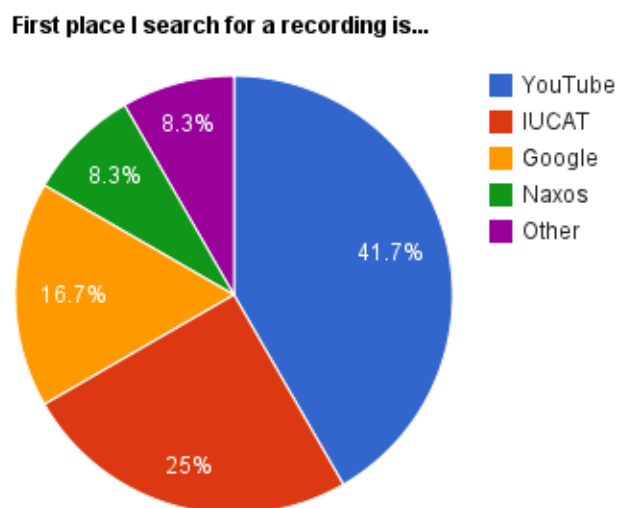

Figure 2. Where people search for recordings

The top reported methods for finding a recording (Fig. 2) included YouTube (4 graduates, 2 undergraduates) and IUCAT (3 graduates, 1 undergraduate). Google and Naxos Music Library were also mentioned. When asked to rate themselves on a scale of 1 (Novice) to 5 (Expert) for finding music online, participants generally thought they were pretty good (rated themselves 3 or 4). In summary, participants thought of themselves as fairly web savvy when searching for music online and were somewhat familiar with the tools available at Indiana University for finding and listening to music.

Success and failure determinations for tasks were based on a graded scale where *success* indicates one search conducted and correct answer clearly identified; *success with difficulty* indicates multiple searches conducted and correct answer clearly identified. *Incorrect result interpreted as correct* indicates a single search or multiple searches were conducted but an incorrect answer was clearly identified; *fail* indicates single search or multiple searches were conducted but no answer clearly identified. Figures 3 and 4 show the success/fail rates per task for IUCAT and Scherzo.
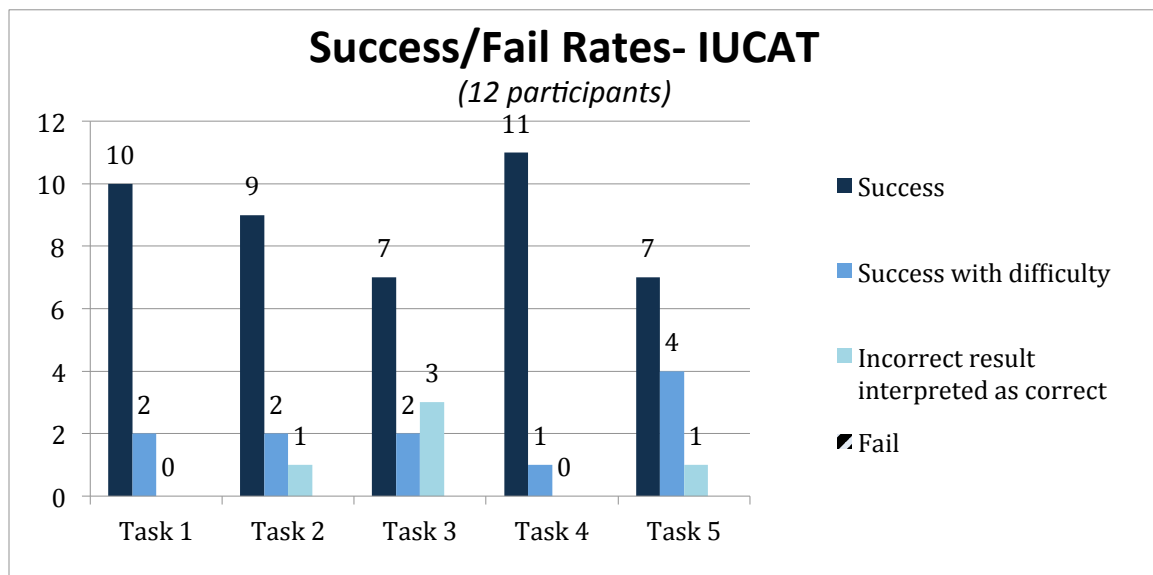

Figure 3. IUCAT Success Rates

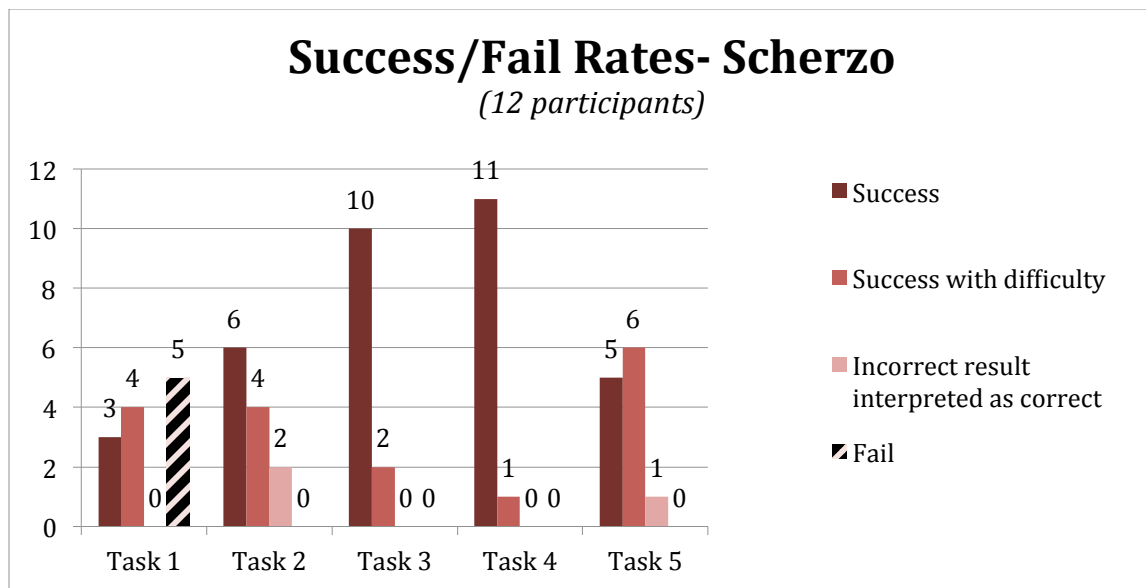**Success/Fail Rates- Scherzo**
(12 participants)

Figure 4. Scherzo Success Rates

Most tasks were completed, although some tasks were easier to complete successfully in IUCAT and task 3 was easier to complete in Scherzo. IUCAT, Indiana University's online library catalog, is a system known to participants. Scherzo, on the other hand, was a brand new system. This session was each participant's first time using it. Additionally, the first task for Scherzo involved searching for Herbie Hancock's album *My Point of View*. In the FRBRized data used by Scherzo, Herbie Hancock was not indicated as a performer on the album but as a producer, a fact which makes his name part of a list of "other contributors" in Scherzo and not actually indexed as a name associated with that album. Many participants expected to be able to locate the album using Hancock's name as a search term and gave up on finding the album when searches including his name did not produce results.

Task 3, finding a list of Stephen Hough recordings, proved more successful using Scherzo than IUCAT. The level of detail provided in Scherzo on the search results page meant the needed information was available from the search results listing. (See Appendix E, Figs. 14 and 18 for visual comparison) Less guessing was involved, fewer visits were made to individual record details, and correct answers (recordings with Stephen Hough on piano) were found more often.

Tasks 4 and 5 proved to be equally successful/difficult in both Scherzo and IUCAT. Both systems were able to provide easy access to the required musical score for *Don Quixote*. Similarly, both systems were somewhat difficult to use to determine names of individual performers on a recording, IUCAT, because the list of performers tend to be in a large block of text with other information, and Scherzo, because names of individuals are not associated with any particular role, so performers and conductors are listed together, not distinguished in any way. (See Appendix E, Figs. 15 and 19 for visual comparison)
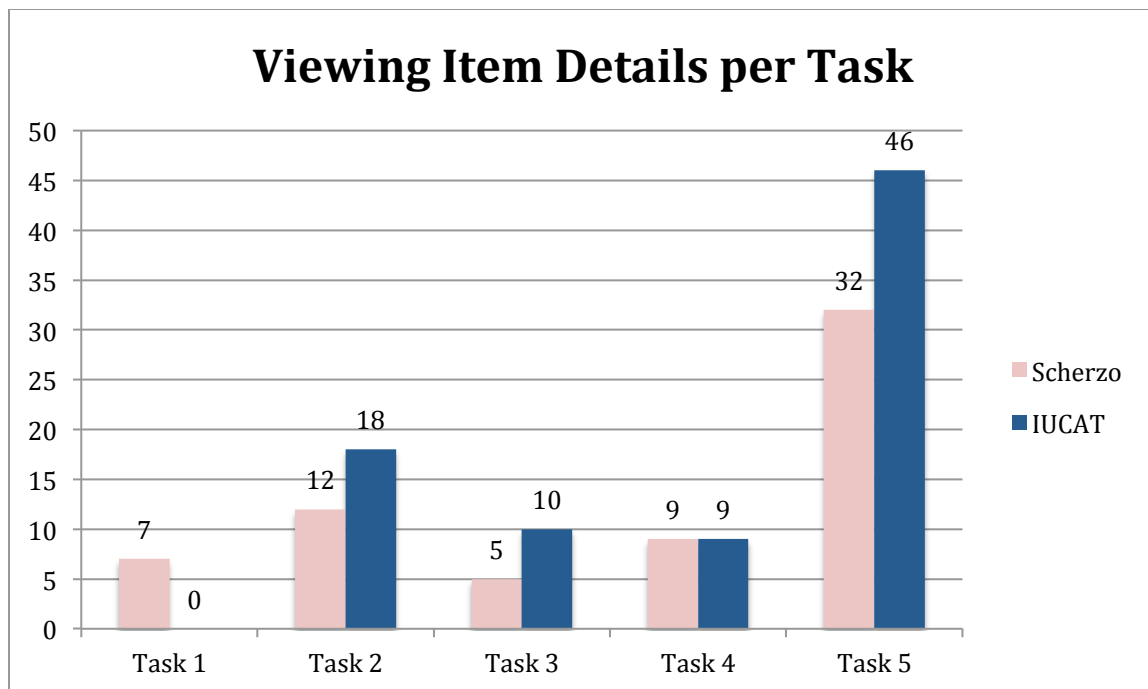
Figure 5. Frequency of Viewing Item Details

Scherzo tended to provide more information on the search results page, meaning participants overall did not enter the item record in Scherzo as often as they did in IUCAT (Fig. 5). Task 1 (Herbie Hancock's *My Point of View*) was an exception to this rule.

Eleven of the twelve participants logged into IUCAT to conduct searches. This extra step is unneccessary for the tasks being performed but has become part of using IUCAT for most of these participants. (See Appendix E, Fig. 16 for IUCAT home page) Additionally, once a partcipant was inside IUCAT viewing search results, using the browser's Back button often prompted an alert from the browser asking if the browser can resend or repeat previous actions. Each time this happened, the participant had to click through or cancel before being able to go back to the previous screen. The preferred navigation method in IUCAT is to use a "Go Back" link provided in IUCAT's menu, but that link was only sometimes used by participants. (See Appendix E, Fig. 18 for search results in IUCAT) Scherzo does not require a login and does not hinder use of the browser's Back button, providing an improved user experience over IUCAT. No evidence in terms of task performance showed this to be an advantage of Scherzo over IUCAT, but some participants in the follow-up interview cited a preference to use Scherzo because it does not include the intermediate steps of logging in or using a special navigation link instead of the browser's Back button.
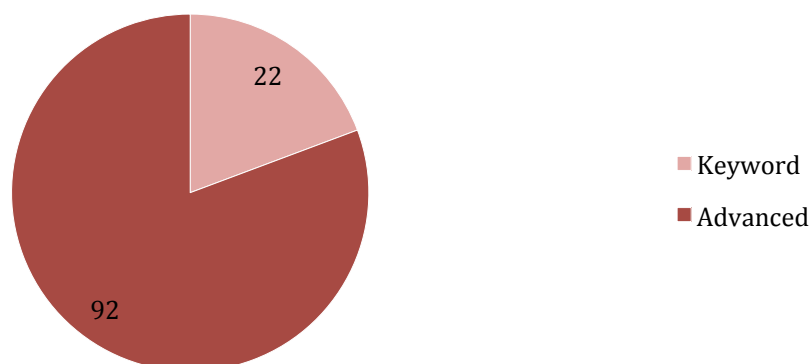
Figure 6. Use of keyword and advanced search in Scherzo

Advanced (fielded) Search was used more than four times as often as Keyword Search in Scherzo. When asked in follow-up interviews (detailed in the Qualitative Findings section below), most participants stated that Advanced Search should be the default search form instead of Keyword. (See Appendix E, Figs. 12 and 13) Most participants used Keyword Search for Task 1 (Herbie Hancock's *My Point of View*) since Keyword Search is set as the default search and, if they failed or had difficulty, switched over to Advanced Search and did not return to Keyword Search after the initial task. The possibility of participants recommending Advanced Search as the default over Keyword Search because of difficulty with Task 1 is examined next.

Figure 7. Use of keyword field on advanced search tab in Scherzo

Keyword searching can encompass any variety of search terms. Within Advanced Search in Scherzo, however, participants included keyword searches along with other identified fields in the search form (Fig. 7). Even though Task 1 proved

difficult in Scherzo's Keyword Search, the keyword field was not abandoned in Advanced Search but used in addition to other identified fields. So participants preferring Advanced Search as the default over Keyword Search were not simply reacting to the failure of Task 1 to work well in the Keyword Search form. Multiple fields in the Advanced Search form (including keyword) are preferred to the single search box of Keyword Search.

Scherzo- Advanced Search Fields (Overall Use)
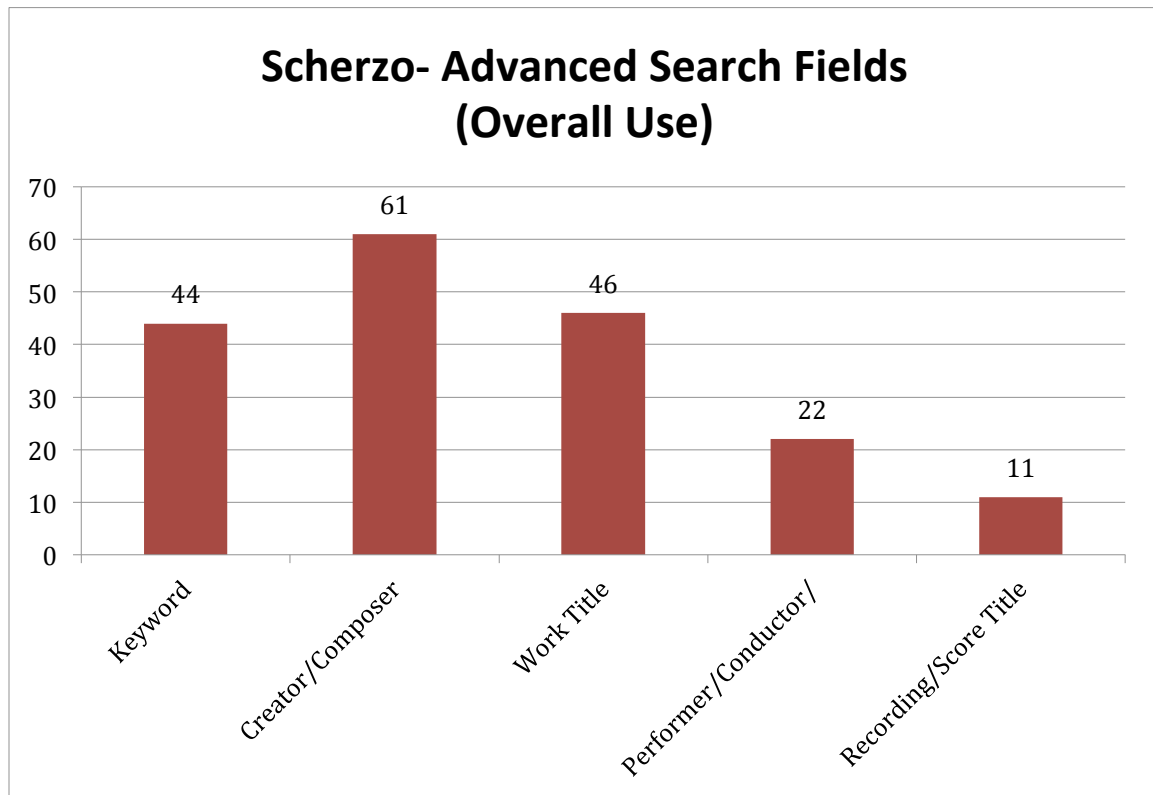
Figure 8. Use of advanced search fields in Scherzo

The way in which Advanced Search fields were used in Scherzo showed that people, creator/composer in particular, were an important search criteria for finding desired scores and recordings (Fig. 8). Creator/Composer or the other person field, Performer/Conductor/Arranger/Editor, was used in nearly all tasks by almost all participants. The tasks (see Appendix C) all mention a name – either creator/composer, performer/conductor/arranger/editor, or other contributor – and were created based on years of observations, search logs analysis, and interviews with people looking for music online at Indiana University. But not all tasks involved creator/composer, the field used by far the most in the Advanced Search form.

There was an assumption among the development team that works would be a window for organizing and narrowing results in a way that users searching for scores and recordings would find useful. One of the main ideas behind FRBR is that the work, or the intellectual entity that is produced by people and is packaged in many forms, is the core information – Scherzo's interface reflected that

organization.[4] (See Appendix E, Fig. 14 for Scherzo's search results page.) But the participants tended to latch onto a person's name and search for that name in a particular role. The reasons for this are not completely clear and further discussion follows, but it is worth bearing this finding in mind. Additionally, from the search results page, *work* results were clicked only 14 times in comparison to items in *recordings & scores*, which were clicked 65 times. Regardless of how the FRBRized data is organized on the back end, the interface needs to reflect the way users want to search, and that might not mean with search results organized by work.

Average # of Paths Taken

[Bar chart showing Average # of Paths Taken for IUCAT (light blue) and Scherzo (dark red) across Task 1 through Task 5. Y-axis ranges from 0 to 4.]

Task	IUCAT	Scherzo
Task 1	1.4	3.42
Task 2	1.67	1.67
Task 3	1.16	1.67
Task 4	1.08	1.4
Task 5	1.16	1.4
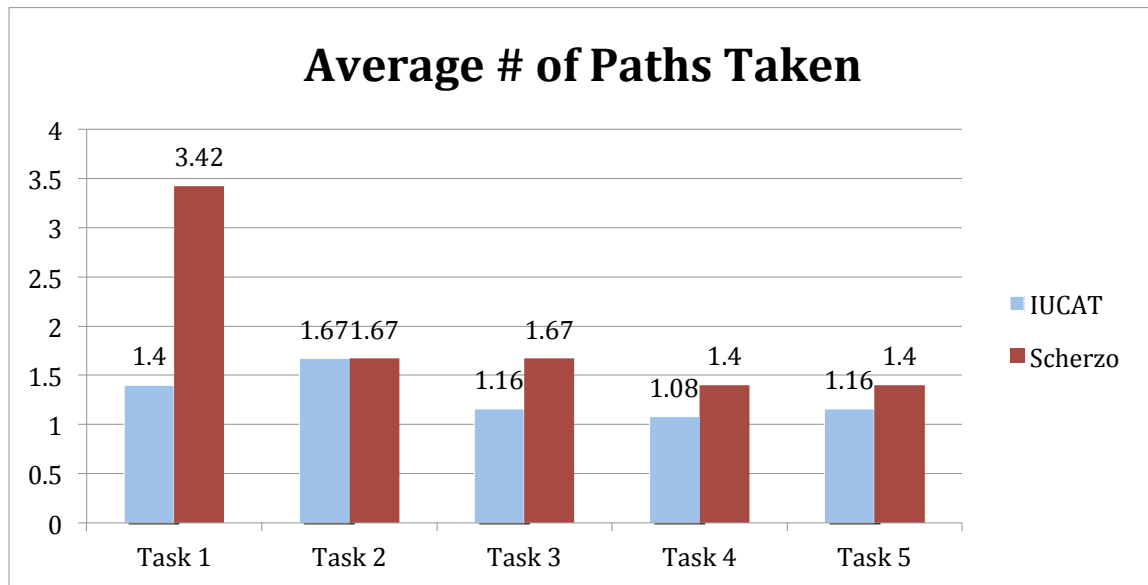
Figure 9. Average number of paths taken per task

In averaging the number of paths taken for each task in IUCAT and Scherzo (i.e., the number of links clicked for narrowing searches, viewing item records, going back and forth between results lists and item record views), the difficulty of Task 1 in Scherzo becomes easier to see (Fig. 9). Aside from that initial task, however, the average number of paths taken for the other four tasks do not differ greatly. Neither IUCAT nor Scherzo outperformed in terms of the number of paths used to complete these tasks. Another way to consider this outcome is that Scherzo did not prove to be better than IUCAT by reducing the number of paths but it also did not prove to be worse.

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[4] IFLA Study Group on the Functional Requirements for Bibliographic Records. "Entities." *Functional Requirements for Bibliographic Records: Final Report.* Munich: K.G. Saur, 1998, http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf

Average Time per Task (S=Scherzo, I=IUCAT)

Task	Scherzo (S)	IUCAT (I)
T1	3:12	1:42
T2	2:17	2:07
T3	2:10	2:01
T4	1:41	1:31
T5	3:10	3:41
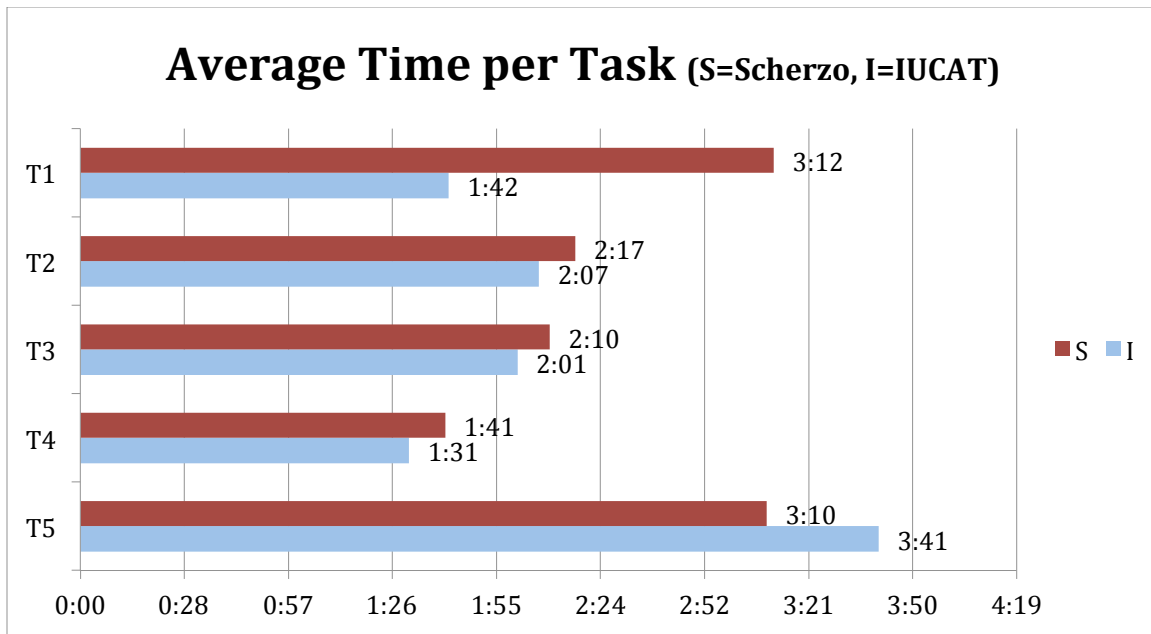
Figure 10. Average time per task

Similarly, the average time per task did not prove to be substantially better for IUCAT or Scherzo (Fig. 10). Task 1's average time for Scherzo shows the same evidence of difficulty as the average number of paths taken, but the other average task times are very close together. Completing the tasks seemed to take just as much time in Scherzo, a new system to the participants, as it did in IUCAT, a familiar system to the participants.

Qualitative Findings

During the follow-up interview, participants were asked to compare their Scherzo and IUCAT search experiences. Seven of the twelve participants remarked on the "clarity" or "specificity" of Scherzo's results. While five participants described Scherzo as "difficult to use at first," they often attributed that to a prior familiarity with IUCAT. Five participants did complain that Scherzo either "failed to return any results" or else "returned fewer results" than one typically gets from a comparable search in IUCAT. However, Scherzo results were perceived as comparatively more relevant and this prompted complaints about IUCAT from five participants as well.

Eleven participants said they would use Scherzo if it were available. The seven participants who offered further explanation said that their choice to use Scherzo would depend "on what they were searching for," "on whether Scherzo was easy to access" or "on whether an initial IUCAT search failed". There were five participants who explained their preference for Scherzo with expressions like "ease," "convenience," "relevance," and "specificity."

At least two participants remarked that the Advanced Search fields in Scherzo were more useful than IUCAT's search fields, being fewer in number and more relevant. Eleven participants said they would prefer to have the Advanced Search by default. The one participant who preferred Keyword Search mentioned being able to use logical "shortcuts," i.e., AND and OR, to specify search criteria. Other participants cited "the ability to better specify search criteria" and "a greater likelihood of getting relevant results" for preferring Advanced Search. Some further ways of expressing these notions included: the ability to "weed out non-hits," being "simple but getting good results," being able to "narrow initial results," and "increasing the chance of success."

At least ten of the twelve participants seemed to understand the purpose of the sidebar facets. (See Appendix E, Fig. 14 for Scherzo sidebar facets) Two participants failed initially to take notice of the faceted browsing feature. Two participants did not appreciate the faceted browsing feature as an improvement of any significance over IUCAT and suggested that facets were "redundant" or that there were too many of them. Most of the remaining participants did seem to appreciate the utility of facets for narrowing an initial set of search results in useful ways, however, saying things like "pretty effective," "I love that," "very useful," "fabulous," and "great feature."

Fewer participants were able to understand the purpose of *works* results. Indeed, most were "confused at first" and, in the end, only about eight of the twelve participants were able to fully grasp the meaning or potential utility of *works* results. For at least four participants, their confusion derived from ambiguity between the two types of results, which led most to treat *works* results, initially, as if they represented additional *recordings & scores* results. Another participant was unable to decide whether *works* represented results by or about a given composer for whom she had searched. However, once the significance of the *works* results had been grasped, some participants were quick to express their approval, saying things like: "wonderful feature," "good tool," "kind of nice," "convenient," and "you can't do that in IUCAT."

When asked for further comments about their experiences using Scherzo, three participants remarked that they found the purpose of the *works* results difficult to decipher. One participant thought that the *works* listing was unnecessary given the specificity of Advanced Search. Suggestions for making the utility of *works* results clearer or more relevant included: using a more descriptive instructive label for the *works* results; including works in the sidebar along with the other facets; only showing *works* results via a "Focus by Work" link; showing what *works* results represent by briefly listing the *recordings & scores* results for the first few. Again, positive remarks about Scherzo highlighted its ease and specificity (to musical recordings and scores) with words like "simple," "convenient," "fantastic," "efficient," and "big time saver."

Accessibility Findings

The blind participant who compared Scherzo to IUCAT has been a student at Indiana University in the School of Music for multiple years. This student is familiar with IUCAT and Variations and has previously evaluated Variations for accessibility using screen reading software.

Overall, Scherzo proved to be more accessible than IUCAT. The initial search form in Scherzo had an unlabeled button for submitting, making the form difficult to use with a screen reader, but the search results included more detailed headings than are available in IUCAT. Each search result listed was also a heading, making the list of results easier to scan than IUCAT.

In terms of the tasks, this participant had mixed results, much like the other participants. Task 1 was easily successful in IUCAT and confusing in Scherzo. The correct result was reached but the task was not complete since the item was not confirmed and the Variations link was not identified. Task 2 was successful in Scherzo but not in IUCAT. The Media Format option in IUCAT is in a second form below the search form and was not used by this participant, making it more difficult to locate scores. The participant also explained that, being blind, scores were not something often sought via IUCAT or any other online system. IUCAT offers a shortcut to find recordings available online by using "http" as an additional keyword search term. The second form containing Media Format is not something that has to be used to locate sound recordings, possibly explaining why this participant did not know about that option.

Task 3 was successful with difficulty in both IUCAT and Scherzo. The initial search in IUCAT included results for music as well as biology when searching against "stephen hough" and "http" as keywords. After adding "piano" as a keyword, the result set was satisfactory to the participant. In Scherzo, the keyword search for "stephen hough piano" returned 26 works and 10 results. The participant was confused by the *works* results because recordings were the desired items. After conducting the search a second time, however, the participant thought that the heading for the *recordings & scores* section, which was visible the second time, did not come through the first time. Seeing the heading for the *recordings & scores* section made the results clearer.

Task 4 was equally easy for the participant in both IUCAT and Scherzo. Task 5 was also successful in IUCAT and Scherzo. Interestingly, once Task 5 was completed in IUCAT the participant used the knowledge of the violinists' names to narrow down results using the sidebar facet in Scherzo. One violinist's recording was found this way. The second violinist required checking against IUCAT's catalog record from the item details view in Scherzo to verify that person was a violinist on the recording.

In the follow-up interview, the participant thought that Scherzo was faster for finding items and liked the ability to limit by work and narrow by people's names. The *works* section was understandable to the participant. The participant was of the opinion that the goal of searching was to find recordings and scores – those are the results that provide something to use (listen to or obtain). In order to emphasize that goal, the participant thought the HTML headings on the page should be reorganized so that the *recordings & scores* section is a higher HTML heading than the *works* and the sidebar facets. This brings up an interesting concept in terms of accessibility. If a page is visually constructed so the main content that should have the highest heading is not the "front-and-center" focal point of the page, then the heading hierarchy often will be out of sync with what is expected from a screen reader point-of-view as well. This lends credence to the idea that the search results page should be redesigned to better emphasize the *recordings & scores* results while still providing the sidebar facets and *works* results in a supporting role.

Discussion

Quantitative findings show that IUCAT and Scherzo rate fairly evenly in time per task (efficiency) and paths taken per task (effectiveness). The fact that time required and paths taken between IUCAT and Scherzo prove to be roughly equivalent does not mean, however, that the systems provided equivalent user experiences. The qualitative findings showed that participants would use Scherzo again, even though it was an unfamiliar system and proved difficult to use to complete one of the five tasks. IUCAT requires too many specialized searching techniques and extra steps (adding "http" as keyword to retrieve online recordings, selecting "Musical Score" or "Sound Recording" from a Format drop-down menu below the search boxes, logging in, using the "Go Back" link instead of the browser's Back button). Scherzo can offer searching for musical scores and recordings at Indiana University without all of that overhead.

The finding that people as a search criteria might be more of a focus for participant searches than any other criteria matches a theme that has actually been present all along in search patterns for finding sound recordings and musical scores: names of people are crucial to finding the proper recording or score. Both the logs analysis and observations/interviews when search was available in Variations[5,6], as well as an internal search interface assessment conducted early in Scherzo's development, show a preference for using people's names to find a desired recording or score. The early Scherzo search interface only had one search form that did not include a

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[5] Hardesty, Juliet L. "Current Variations Search Observations/Interviews Study (April 2009): Executive Summary." http://www.dlib.indiana.edu/projects/vfrbr/projectDoc/usability/observationInterview/executiveSummary.html

[6] Hardesty, Juliet L. "Current Variations Search Logs Analysis Study (April 2009): Executive Summary." http://www.dlib.indiana.edu/projects/vfrbr/projectDoc/usability/logsAnalysis/executiveSummary.html

keyword field but did include creator/composer, work title, performer/conductor, and recording/score title fields. The participants who tried this early version devised their own queries so searches conducted were not based on any prescribed tasks or scenarios. Of the 66 searches conducted by 7 participants in that study (3 faculty members, 3 graduate students, and 1 undergraduate student from the School of Music), only 5 searches did not involve either a creator/composer and/or a performer/conductor search term.

Considering the preference participants stated to have the Advanced Search form, with its multiple search fields, available by default instead of the single search box of the Keyword Search form, the question follows: why is a multi-field search preferred for Scherzo but not for other search services like YouTube or Google? Participant statements shed some light on this question – many stated the preference for Advanced Search so they could be more precise in their searches. The Advanced Search form also provides context to show what kind of information is available in Scherzo. Google and YouTube tend to encompass "everything" so searching is wide open to any type of content. Scherzo is a smaller, specialized search interface and users know that it does not have everything. Providing a single search box as if any search will come up with results is something that participants recognized would not work. Providing a keyword field as part of the Advanced Search form gives users a shortcut for entering searches. Instead of picking one of the specific fields, they can see what fields are possible and enter appropriate terms in the top Keyword field without needing to select a particular field in the form. Keyword on its own, however, is not enough to allow users to search with confidence.

While FRBRization of data on the back end enabled relationships to be created between works and manifestations, people, instrumentations, and dates, works were not a comfortable viewpoint for participants searching for scores and recordings. Searching by person or narrowing by person – and not just by person but also by creator/composer or by performer/conductor – proved beneficial and rewarding to participants. Searching for a person's name in a role and then seeing that name on the search results page associated with a score or recording (even without the identified role) solidified that searches were returning the desired results. Future directions to explore for Scherzo should include a consideration of the focus, from the end user perspective, for finding musical scores and recordings online.

Recommendations

Based on the quantitative and qualitative usability findings as well as the accessibility findings, the following are recommendations for changes that should be made to Scherzo as well as features that should be kept (or not lost) in future revisions of this discovery interface.

Recommendations to Keep

1. **Details in search results** – Lists of contents, people, and links for online access on the search results page in Scherzo provided definite benefits over IUCAT and should remain in place on the search results page. The more information that can be provided for individual results on the search results page, the less time is needed for clicking into item records to review individual results.

2. **It's just a web site; no login required** – Keeping Scherzo open and searchable without requiring a login is essential to keeping the tool relevant and easily usable. Letting the browser functions be used as intended (the Back button, for instance) also keeps users from becoming frustrated.

3. **Facets for browsing** - Even though the sidebar facets on the search results page were not used much during the tasks, they provide context and the qualitative assessment revealed that participants thought they were helpful.

4. **HTML headings for search results** – Accessibility was another area where Scherzo performed better than IUCAT. The headings for the sections of the search results page and the headings for each *recordings & scores* result were specifically noted as being easier to navigate than IUCAT.

Recommendations to Change

1. **Make Advanced Search the default search** – Participants stated and showed a clear preference for Advanced Search (with its multiple fields) over Keyword Search (with its single field), so Advanced Search should be the default and, possibly, only search form. Advanced Search includes a keyword field already so Keyword Search could actually be removed completely, leaving only one search form with keyword, creator/composer, work title, performer/conductor/arranger/editor, and recording/score title. The keyword field can be emphasized over the other field options by making it a larger field with front and center presence and the other fields can be normally sized form fields below the keyword field. This leaves all search options in place but simplifies the searching process by not forcing users to make a decision about how to search before beginning a search.

2. **Consider putting facet list on home page** – Being able to see how many items are available for a person, an instrumentation, a date, etc., right from the beginning gives more context in a way that is different from offering all available search fields. Offering all available search fields from the beginning lets users know how they can access the content. Showing available facets with numbers gives the user confidence that the system will have something s/he can use. Offering facets from the beginning might also make the facets more relevant and useful to users after arriving at the search results page.

3. **Emphasize people's names and roles** – People seem to be the deciding factor on whether or not a result is the desired item. To support this, the sidebar facets should list Creator/Composer and then Performer/Conductor/Arranger/Editor as the first 2 facets. Additionally,

any role information that is available to show with a person's name should be listed on both the search results page as well as on the item details page for each result. Reducing the number of facets listed in each category to the top five results will also allow more types of facets to be immediately visible.

4. **Make Scherzo available** – Right now, Scherzo is not integrated as a tool within the Music Library. Most students, faculty, and staff in the School of Music are not aware that is available to use. Nearly all participants said Scherzo would be useful to them if they had easy access to it, so it should be pushed out as much as possible. This will also help to improve Scherzo over time, as more users will provide more feedback.

5. **Need value for "Submit" button on search form** – Accessibility testing showed that the Submit button on the search form (Keyword and Advanced) was not labeled. A "value" attribute provides information to screen reader users about the purpose of the button. These users otherwise do not have the visual cue to see that the button is associated with all of the form fields on the search page and has the functionality to submit all of those fields.

6. **Redesign search results page to emphasize Recordings & Scores** – Participants were confused by the *works* section of the results page and did not actively use the sidebar facets. Focus was generally on the *recordings & scores* section. Accessibility testing also suggested that the headings for these three areas needed to be adjusted so *recordings & scores* was the top heading level hierarchically and the sidebar facets and works were subheadings. These findings suggest changing the visual layout so *recordings & scores* results are visually and hierarchically the main content on the search results page.

What does this mean for works? One possibility is to remove the *works* section and, instead, show an aid in the *recordings & scores* header that either offers to narrow results by the work title or sort results by the work title. Another option is to keep the sections as they are and add the number of *recordings & scores* results next to each *works* result in the *works* section. If this option is implemented, the heading hierarchy should be changed to reflect the *recordings & scores* section as hierarchically higher than works and facets. Figure 11 shows a proposed redesign adding result numbers for recordings and scores next to each work result.

Figure 11. Proposed redesign of Scherzo results page

Appendix A. Information Sheet

Digital Library Program (DLP) Variations/FRBR Search Interface Evaluation - Information Sheet

You are invited to try Scherzo, a new search system under development for Variations, Indiana University's Digital Music Library. The purpose for this evaluation is to determine how well Scherzo assists participants in completing common music searching tasks in comparison to IUCAT (Indiana University's Online Library Catalog).

INFORMATION

Today you will try a set of tasks using Scherzo and IUCAT. Scherzo provides information about digitized and non-digitized sound recordings and scores as well as access to digitized sound recordings available at Indiana University. IUCAT is Indiana University's online library catalog. Please be aware that we are not testing your ability to conduct searches; we are interested in learning what works and doesn't work in Scherzo. If you encounter any difficulties we need to know about them in order to improve the performance of Scherzo.

You will first be asked to complete a short survey on your previous experiences researching online for music. You will then be asked to complete tasks for 5 scenarios presented to you. As you complete these tasks, please try to talk out loud about what you are viewing and clicking on the screen. This will help us know what is and is not working for you as you conduct your searches.

With your permission, a recording of your screen actions along with voice (you and the facilitator talking) and video (your face looking at the screen) will be captured to help us establish time and specific action sequences for each task. There will be up to 2 note-takers present to record your experience. **Please let us know if you prefer not to be recorded.**

After the tasks are completed, you will be briefly interviewed to review what you have experienced and express your opinions about Scherzo. Both positive and negative feedback are helpful so please let us know what you think!

The expected duration of this study is no more than 1 hour.

BENEFITS

As a participant in today's evaluation of Scherzo, you are participating directly in the design process of Variations. The Digital Library Program and the Variations Development Team thank you for your participation.

CONFIDENTIALITY

The recording and session notes from this evaluation will be used to improve the design and functionality of Scherzo. Therefore, these notes will be shared with the developers of Variations. All data will be kept confidential and will be reported

anonymously (your name will not be tied to anything you say or do today).

COMPENSATION

You will receive $20 for participating today. You will need to sign a Payment Acknowledgement Form in order to receive payment (we need your acknowledgement of payment so that we can be reimbursed). This form will be kept in a separate location from the recording and session notes and will not be connected to any of your responses. If you withdraw from the evaluation prior to its completion, you will still receive the same level of compensation.

CONTACT

If you have questions at any time about this evaluation or the procedures, feel free to ask. You may also contact: Julie Hardesty, at Digital Library Program, Indiana University-Wells Library, 1320 East 10th Street, Room W-501, Bloomington, Indiana 47405, 812-855-3710 and jlhardes@indiana.edu

PARTICIPATION

Your participation in this evaluation is voluntary; you may refuse to participate without penalty. If you decide to participate, you may withdraw from the evaluation at anytime without penalty and without loss of benefits to which you are otherwise entitled.

March 30, 2011

Appendix B: Pre-Tasks Survey

Digital Library Program Variations/FRBR Search Interface Evaluation

The following are 5 questions regarding your previous experiences researching online for music. Please answer as many as you can. Your responses will be recorded anonymously.

How often do you use IUCAT?

○ A lot

○ Sometimes

○ Rarely

○ Never

How often do you use Variations?

○ A lot

○ Sometimes

○ Rarely

○ Never

What is your relationship to Indiana University?

○ Graduate student

○ Undergraduate student

○ Other: [   ]

How would you rate yourself at finding music online (choose one)?

	1	2	3	4	5	
Novice	○	○	○	○	○	Expert

If you're looking for a recording of a specific piece by a specific performer, which of the following approaches are you most likely to take first?

○ Google it

○ Search YouTube

○ Search using IUCAT

○ Search iTunes

○ Other: [   ]

(Submit)

Powered by Google Docs

Appendix C: Task Lists

Task List (IUCAT first)

1. While you work on a class assignment, you want to listen to Herbie Hancock's album, *My Point of View*.
    a. Locate the recording in IUCAT and click on the Variations link.
    b. Locate the recording in Scherzo and click on the Variations link.
2. You're a violinist and for your lesson, your teacher wants you to work on Prokofiev's first violin concerto, the version edited by David Oistrakh. You decide to see if you can find a copy in the music library.
    a. Using Scherzo, see if the library has a copy, and if it's not checked out, write down the call number.
    b. Using IUCAT, see if the library has a copy, and if it's not checked out, write down the call number.
3. You are a pianist looking for recordings with Stephen Hough on piano.
    a. Using IUCAT, find a list of these recordings.
    b. Using Scherzo, find a list of these recordings.
4. You're a ballet accompanist and need a copy of the piano reduction of the ballet *Don Quixote* by Minkus.
    a. Use Scherzo to see if the music library has one.
    b. Use IUCAT to see if the music library has one.
5. You're a violinist and will be performing Shostakovich's first violin concerto. You want to compare two recordings by two violinists.
    a. Using IUCAT, find and write down the name of the two violinists you will be comparing.
    b. Using Scherzo, see if you can find two violinists (can be the same or different).

Appendix D: Follow-up Questions

1. What did you think of this experience today?
   a. How do you feel about Scherzo?
   b. How do you feel about IUCAT?
2. If this system was available through the IU School of Music, how likely would you be to use it? (wouldn't use it) 1 - 5 (it's all I would use)
   a. Why?
      i. In Scherzo, would you rather have Keyword Search or Advanced Search be the first one you see? Why?
      ii. In Scherzo, tell me about major areas of the page - what is shown in each area and why?
3. Do you have any other comments?

Appendix E: Scherzo & IUCAT Screen Shots

Figure 12. Scherzo - keyword search form

Figure 13. Scherzo - advanced search form (fielded search)

Figure 14. Search results for Advanced Search of "beethoven" as creator/composer and "Both" as Media Format

Figure 15. Scherzo - item record view for sound recording *Songs*
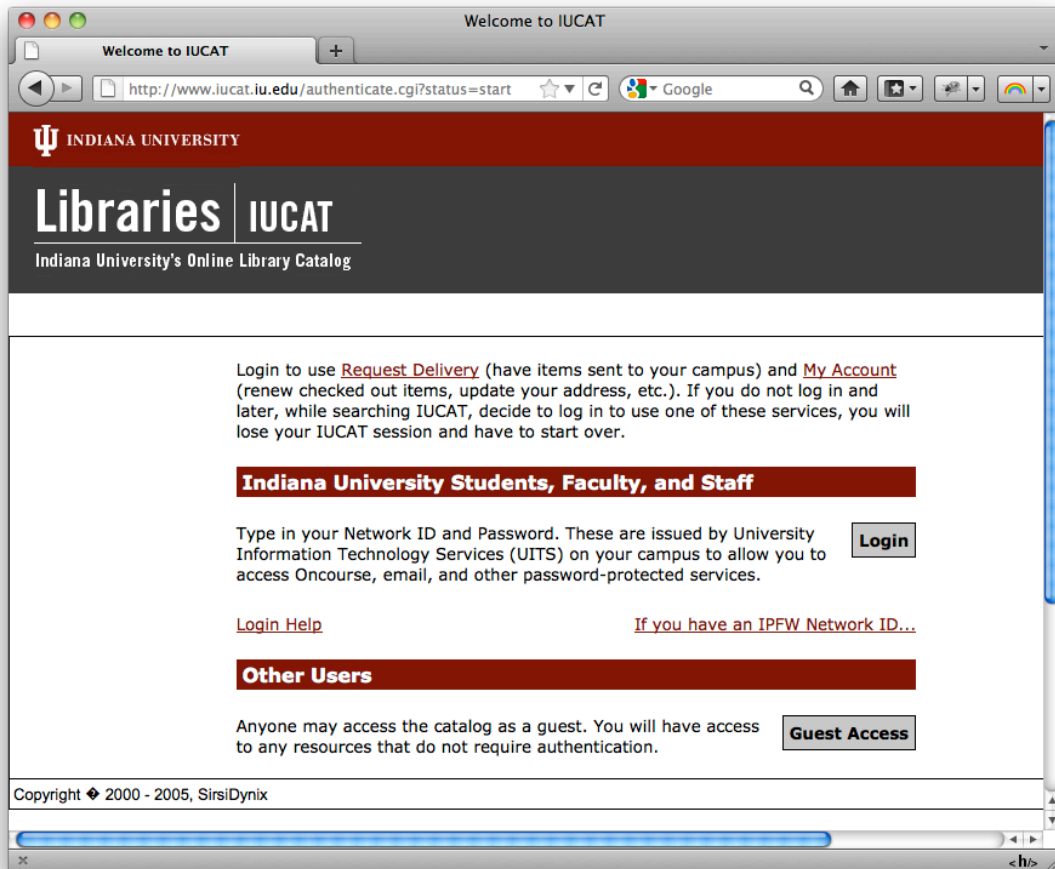
Figure 16. IUCAT - home page

Appendix E – Scherzo & IUCAT Screen Shots

Figure 17. IUCAT - basic search form
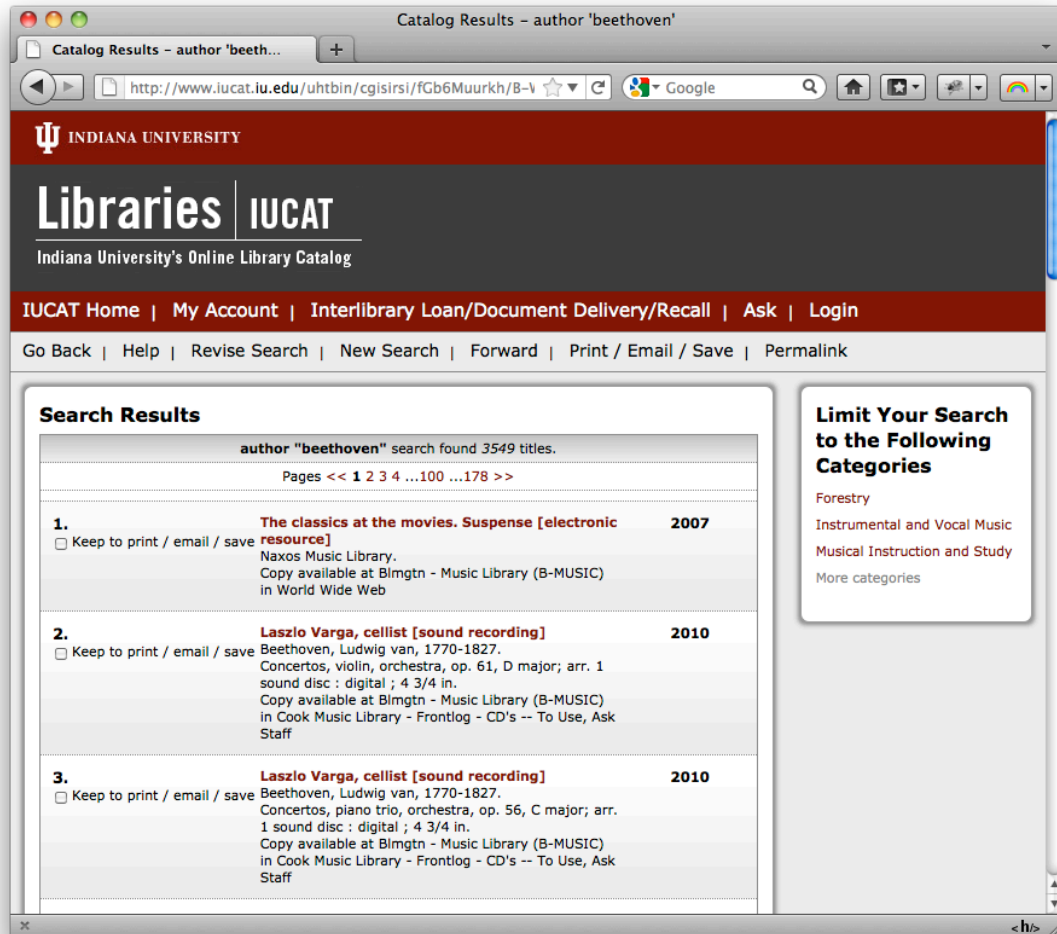
Appendix E – Scherzo & IUCAT Screen Shots

Figure 18. IUCAT – Search results for Basic Search of "beethoven" as author, "Sound Recordings" as Media Format, and "Blmgtn - Music Library (B-MUSIC)" as library.
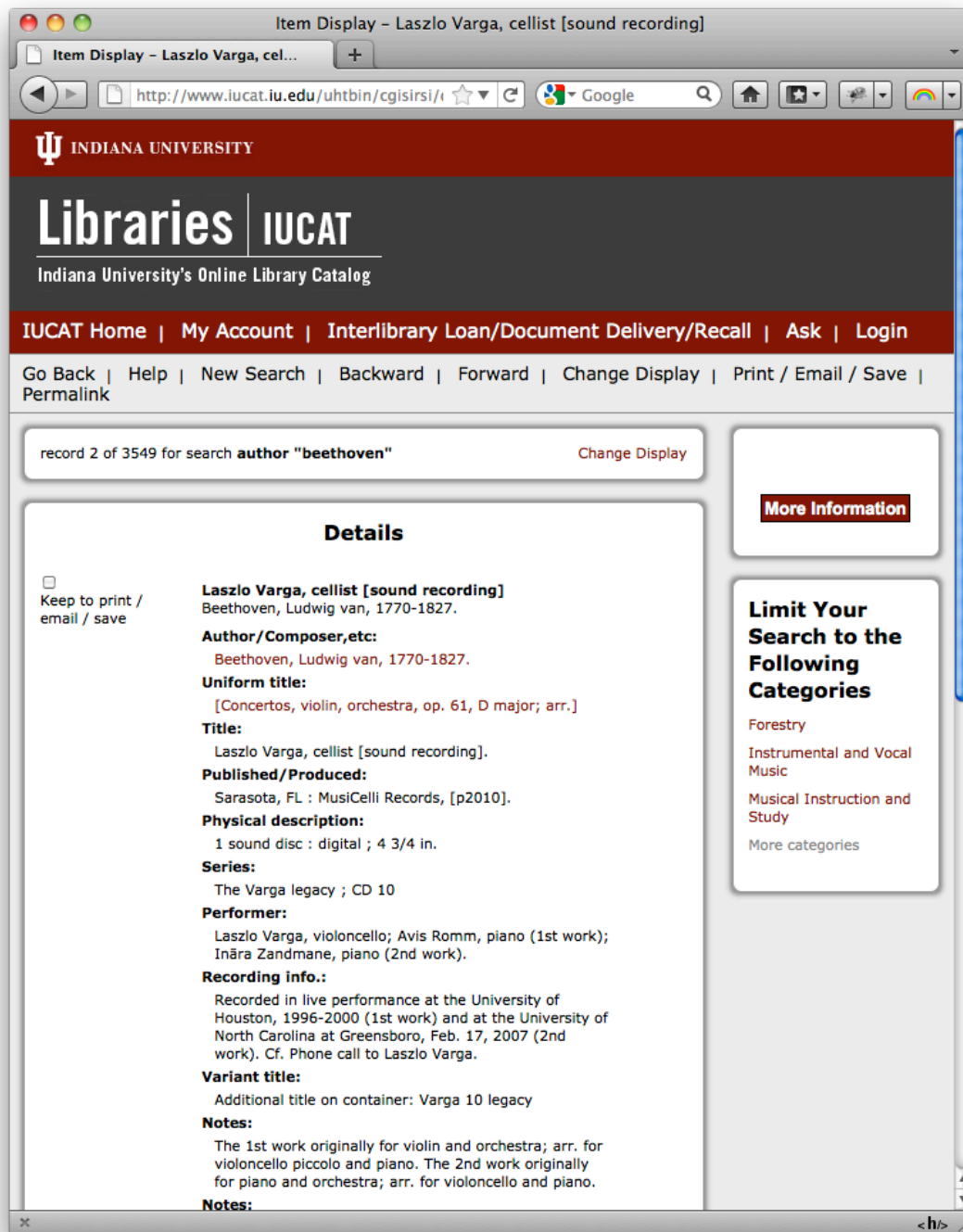
Appendix E – Scherzo & IUCAT Screen Shots

Figure 19. IUCAT – Item record view for *Laszio Varga, cellist.*