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Fall 2006

CD-ROM Assessment:
The Rebecca Project

I. INTRODUCTION

A. The Avery Fisher Center Collection
This is an assessment of the interactive multimedia CD-ROM, *The Rebecca Project*
(TRP), held in the circulating audiovisual collection of the Avery Fisher Center for Music
and Media at Bobst Library. The Avery Fisher Center (AFC) is a library that holds a
large collection of audio and video recordings and related materials. With listening and
viewing carrels, researchers are able to study the AFC's collection of videotapes,
audiotape, DVDs, CDs and CD-ROMs.

According to Gloria Rohmann, Head of AFC, the Center has one of the largest
collections of CD-ROMs, with over 300 titles. For most, or all, of the CD-ROM titles,
AFC purchased a copy either from the producer or distributor. AFC began actively
collecting CD-ROMs in 1993 and continues to buy copies today—less frequently,
however. The subject matter covers a wide range of topics. Some of the main areas of
focus include science, nursing, medical and music CD-ROMs.

B. *The Rebecca Project*—Overview of Content and Production
The Rebecca Project, an interactive multimedia CD-ROM, is a critical examination of
Alfred Hitchcock's 1940 film, *Rebecca*, based on Daphne du Maurier's best-selling
novel. The graphics, sound design, digital video and programming were designed by
Greg Easley under the direction of Lauren Rabinovitz, professor of Communications and
American Studies at the University of Iowa. The CD-ROM was published by Rutgers
University Press and funded by a computer-based education grant in 1994[1]. *The Rebecca
Project* file itself is named "TRP 2.0," which leads me to believe that this may be a
second edition. However, what edition it is, or how many previous editions there were, is
not specified either on the CD or in the booklet.

Designed as an in-depth scholarly critique of a single film, *The Rebecca Project*
combines hypertext critical essays, QuickTime movie clips and various still images to
allow users to examine *Rebecca* from historical, feminist and aesthetic perspective. The
CD-ROM includes content that we might now expect to be included in DVD extras—
production stills, an original theatrical trailer, biographies and original press materials. In

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[1] Anonymous, "Taking a Second Look," *The Journal*, http://thejournal.com/articles/13364_10 (accessed
November 17, 2006).

addition, scholarly essays and historical and biographical information are linked with stills and video clips to give users a guided tour, discussing topics such as auteurship, genre study, feminist theory, queer theory, American studies and the film industry. Throughout the CD-ROM, users are also able to take notes in the "Note Taker," which can then be printed or saved to the computer.

II. BASIC ASSESSMENT

A. Content Appraisal
The Rebecca Project is widely considered the first interactive multimedia CD-ROM in the area of cinema studies[2]. Part of its significance comes from the fact that it is among the earliest examples of interactive media in this area of study at a time when CD-ROMs were approaching the height of their popularity. The CD-ROM also includes rarely seen footage and still images such as early publicity materials and images of du Maurier and her life in parts of England and France. *The Rebecca Project* also brings together works of well-respected scholars such as Tania Modleski and Mary Ann Doane. Outside of a classroom, users are able to see various critical perspectives illustrated by video clips on the same screen. The overall design is easy to navigate, and it is a great example of how producers envisioned CD-ROMs to be an important learning/teaching tool. In addition, *The Rebecca Project* received honors by the Invision Awards presented by NewMedia Magazine—an award to recognize excellence and innovative achievement in new media applications[3]. It was also named in *MacUser Magazine*'s as one of the top 50 CD-ROMs of 1996[4]. This recognition may account for the CD-ROM's wide distribution, in that a search on OCLC shows over 50 institutions holding a copy.

B. Terms of Agreement
There is no written agreement between the Avery Fisher Center, Lauren Rabinovitz or Rutgers University concerning copyright, licensing or specific uses, such as duplication or exhibition. AFC purchased a copy of *The Rebecca Project* as part of the Center's main activities as a lending library for scholarship and research. Therefore, it can be presumed that ownership of the copyright has not exchanged hands. Under the terms of Fair Use, AFC is allowed to make duplications for research purposes and for archival

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[2] Singer, Ben, "Hypermedia as a Scholarly Tool," *Cinema Journal*. 34, No. 3, Spring 1995. Via JSTOR, http://ezproxy.library.nyu.edu:2063/view/00097101/ap040083/04a00090/0?searchUrl=http%3a/www.jstor. org/search/BasicResults%3fhp%3d25%26si%3d1%26Query%3d%2522rebecca%2bproject%2522%2bcd% 2brabinovitz&frame=noframe&currentResult=00097101%2bap040083%2b04a00090%2b0%2c0E&userID =807a952a@nyu.edu/01cc99332800501b194ec&dpi=3&config=jstor.

[3] Static and Motion News, http://www.static-motion.com/pr_news/pr_invision_1999.html (accessed 11/17/06). The article reads, "The NewMedia Invision Awards are presented by NewMedia Magazine, the leading publication for reviewing and rating development tools for new media and online professionals, and Softbank Comdex, which produces an expansive program of more than 30 trade shows and conferences worldwide to meet the growing needs of the global information technology marketplace. The awards program was launched in 1993 to identify and promote excellence in the application of new media."

[4] Biography for Greg Easley, "Transformations of the Book," An International Conference, October 24-25, 1997, http://web.mit.edu/m-I-t/conferences/book/speakers.html (accessed 11-17-06).

preservation[5]. If Avery Fisher wants to use *The Rebecca Project* for any purpose other than scholarly or critical research—highly unlikely—agreements would have to be made with the CD-ROMs copyright owner as well as all the third-party copyright owners of the individual elements of the work (i.e. the authors of the critical essays, the copyright owner of *Rebecca* and all the additional images, footage and designs).

C. Physical and Environmental Conditions
1. Current Macro- and Micro- Environments
Currently, all the CD-ROMs are stored in the Avery Fisher Center where there is no temperature or humidity control. The temperature and relative humidity are not monitored on a regular basis. It is likely that there are significant fluctuations in temperature and humidity due to seasonal changes, reaching extremes that are detrimental to all the materials in AFC. Furthermore, the CD-ROMs are housed in plastic jewel cases, stored upright in metal compact shelving. In this shelving area, there is some ventilation and little or no light.

According to Gloria Rohmann, circulation of the CD-ROM collection is very infrequent, and none of the materials are viewed/played on a regular basis. Therefore, the CD-ROM collection is not subject to the same amount of use—or abuse—as other materials in AFC, such as the videotapes or DVDs.

2. Physical Assessment of the CD-ROM
Upon physical examination, there does not appear to be any signs of deterioration or damage to the CD-ROM. On the disc itself, there are no scratches, particulates or signs of delamination. The original paper booklet and cover are in the jewel case and remain intact. The jewel case itself, does have some wear—scratches and dirt.

D. Organization and Cataloging
All the CD-ROMs are stored together on compact shelving. Each item is given its own call number—a prefix, XMM, followed by a number. The call numbers were assigned to the items when they were acquired by the department. For each item, a full catalogue record is created, using MARC format, and entered into NYU's "Bobcat" online database. All related booklets and relevant package materials are stored in a separate area, but they are cross-referenced in the Bobcat records.

While most of AFC's audiovisual materials are not allowed to leave the library—the library has sufficient equipment for playback of all of its holdings—AFC does, however, allow users to check out the CD-ROMs for one week. The reason for allowing users to check out the CD-ROMs is because it is difficult for AFC to maintain all the equipment needed to playback every CD-ROM properly. For the time being, AFC does maintain four "legacy" computers, kept specifically for CD-ROM playback. The lack of sufficient equipment or software, however, is a major preservation issue for this collection, which will be discussed later in this report.

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[5] "Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works," http://www.copyright.gov/1201 (accessed 12/03/06).

III. TECHNOLOGICAL SPECIFICATIONS AND TESTING

A. Operational Requirements
The following are the system requirements explained in both the CD-ROM booklet and the Bobcat catalog record:

- Macintosh or compatible with a 25MHz 68030 processor (33MHz 68040 processor or PowerMac recommended);
- System 7.1 or later;
- 6MB free memory (8MB recommended);
- 14 in. monitor capable of displaying 256 colors (8-bit color);
- double-speed CD-ROM drive

In addition, installation software is included on the CD-ROM, and the user must follow the associated instructions in order to run the disc. The installation files are made up of fonts used for *The Rebecca Project* and QuickTime 2.1 files with QuickTime PowerPlug and QuickTime Musical Instruments.

B. Testing
In this section, I will discuss the various experiences I had using this CD-ROM on different computers and different operating systems. For *The Rebecca Project*, the CD-ROM is based on Macintosh technology, and, thus, the relevant tests discussed here are with Macintosh/Apple computers[6]. Furthermore, these tests were conducted only on the computers in the Avery Fisher Center, and therefore, running *TRP* is subject to the software and hardware that Avery Fisher has already installed on its computers.

1. MAC OS 8.5
The Rebecca Project performed the best on the MAC 8.5 operating system. From my experience, there were no complications with running the applications; the texts and graphics appeared "normal" given the 8-bit, 265 color scheme in which the CD-ROM was produced; all the moving image clips played with no complications (the low quality of the images, however, are likely due to the small file size); the links worked well and navigation was quick to respond. The only link I was not able to access was the "Credits" link that was on a closing page when I quit the application. For this "Credits" link, I was not able to find out what was on the page, and I could not determine why I was not able to open it.

2. MAC OS 9.1
There were various complications that arose when I ran *The Rebecca Project* on the MAC 9.1 operating system. The look, color and navigation appeared to be working well—or at least similar to how it looked on the OS 8.5. Overall, it ran rather smoothly, and I was able to view the moving image clips when there is a direct link. The images, moving image clips and text were more pixilated—slightly—which was likely partly due to the larger monitor and higher-quality graphics of the newer computer.

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[6] It should be mentioned here that I did attempt to run the CD-ROM on my own Windows XP computer, but this proved unsuccessful.

Some of the more noticeable problems came with the text. First of all, certain symbols did not appear on the OS 9.1 as they did on the OS 8.5. For example, the diamond "bullet" that appears occasionally in the text in the OS 8.5 test shows up as a "u" in the OS 9.1 test. In addition to this minor problem, the text appears larger in the OS 9.1 test than it does in the OS 8.5 test. As a result, in some pages, the text on the bottom line gets cut off because it is too big for the space the programmer allowed when he created it.

There was also one major problem with playing the moving image clips in a particular section of the CD-ROM. In the section called "The Screening Room," users are able to access from a drop down menu any moving image clip used in the CD-ROM. For example, if a user wished to view "Leigh Test," he/she could highlight the clip from the list and watch Vivian Leigh's screen test without having to search through all the sections in the body of the CD-ROM to find it. On the OS 9.1 test, this function did not work. Moreover, I could not open the individual QuickTime files for the moving image clips—when not running *The Rebecca Project* program—like I could with the OS 8.5 test. I believe this problem has to do with the particular QuickTime player installed on this computer, which was QuickTime 5.0.2 version. However, I could not determine this for sure.

3. MAC OS X
I was not able to run *The Rebecca Project* on the MAC OS X operating system. When I put in the CD-ROM and attempted to install the software, a note appeared explaining that the computer would now run the Macintosh "Classic" system. However, when the computer attempted to do this, another note appeared saying that OS System 9 would need to be installed in order for Classic to run. Therefore, I was not able to playback *TRP* file. When I looked through the individual files, however, I was able to view the individual QuickTime file moving image clips—unlike in the OS 9.1 test. In this case, viewing the moving image clips with the QuickTime 7.0.0 version was successful. However, I was not able to see any of the text or images.

C. Examination of Production Elements and History
The Rebecca Project was created on a Mac with the PowerPC processor chip that was introduced to Macintosh computers in 1994, a much faster technology than its predecessor. *The Rebecca Project* was produced in 1994-95 using SuperCard. SuperCard is a hypermedia, CD-ROM authoring tool used to create and deliver interactive multimedia[7]. It is used to develop custom programs, traditionally, for the Macintosh system (later versions are PC-compatible beginning in 1995). Introduced in 1989 by Silicon Beach software, SuperCard was considered an extension—or more advanced version—of HyperCard, allowing for color and better graphics[8]. It is based on

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[7] SuperCard, www.supercard.us (accessed 11/18/06).
[8] Lewis, Peter H. "Personal Computers; Adding Tools to the Kit." *New York Times*. New York, Jan. 31, 1989, pg. C8, via
http://ezproxy.library.nyu.edu:2082/pqdweb?index=33&did=960807981&SrchMode=1&sid=2&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1165471448&clientId=9269 (accessed 11/30/06).

the same "stack" technology as HyperCard. By 1994, SuperCard's developers had changed hands twice and was then owned by Allegiant Technologies[9]. It is under this name, Allegiant Technologies, that *The Rebecca Project* was produced. Although the CD-ROM does not say specifically, *TRP* was most likely created using SuperCard 2.0, which was introduced in 1994 and the first version native to the PowerPC processor[10]. While SuperCard 2.0 is native to PowerPC, it was designed to also run on 68KB-based Macs as well. QuickTime capabilities were introduced in the previous version, SuperCard 1.7[11]. At present, SuperCard is owned and developed by Solutions Etcetera, which recently came out with a newer version of SuperCard, 4.6, that is native to Intel-based computers and compatible with PowerPC processors.

While SuperCard is not as well known as HyperCard, reviews often consider SuperCard's functions to be superior to HyperCard—particularly in its hypertext capabilities and graphics. These particular functions are critical to the construction of *The Rebecca Project* because of the significant amount of text, and the links between them, in the program. However, text and fonts may not translate well across operating systems, as evidenced by my tests on different computers.

Still images are also an important element to the program—illustrating *Rebecca*'s cinematic analysis and its production history. In the Production History section in particular, dozens of images are used to show how *Rebecca* was marketed in newspapers and magazines around the country. According to a 1995 review of SuperCard, users had the choice of importing pictures as PICT or TIFF files, which can be in 24- or 8-bit images[12]. Unfortunately, I was not able to determine what types of files the images are as these files are possibly "hidden" in the CD-ROM.

The moving image files, however, are not "hidden," and they were created in QuickTime version 2.1. By 1994, QuickTime was available for Macintosh and PC computers—SuperCard was not. For *The Rebecca Project*, a closer examination into the individual moving image files will be needed to determine the file formats of the audio and video "wrapped" in QuickTime. All of the moving images were not of the highest quality, and they were also highly compressed given that most, or all, of the QuickTime file sizes are under 1MB.

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[9] Vadlamudi, Pardhu. "Allegiant updates SuperCard for Macs, plans for Windows." *InfoWorld*. San Mateo: Jan. 9, 1995. Vol. 17, Iss. 2; pg 16, via http://ezproxy.library.nyu.edu:2082/pqdweb?index=19&did=4705862&SrchMode=1&sid=2&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1165471786&clientId=9269 (accessed 11/30/06).

[10] Ibid.

[11] Ibid.

[12] Tessler, Franklin N, and Harjit Singh. "SuperCard 1.7.1." *Macworld*. San Francisco: Feb 1995. Vol 12, Iss. 2; pg 68, via http://ezproxy.library.nyu.edu:2082/pqdweb?index=18&did=8956852&SrchMode=1&sid=1&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1165474632&clientId=9269 (accessed 11/30/06).

D. Preservation Issues

There are a number of issues to consider here. The physical medium is always subject to damage or deterioration, especially since the CD-ROM has not been stored in optimum conditions since AFC acquired it. Particularly, the fluctuations in temperature and un-controlled heat and humidity will likely be damaging to all the audiovisual material in the long run. We must also consider the physicality of the computers themselves. While AFC has managed to maintain these computers to date, they are also subject to the same environmental conditions—dust in particular. The internal processes also cause wear to the equipment.

Aside from the physicality of the CD-ROM and computers, the reading of digital files has proven to be complicated, varied and not suitable for long-term preservation. To understand the difficulties that come with preserving digital information, we must examine the files themselves and the software used to create them and interpret them.

First of all, all of *The Rebecca Project* was created in proprietary technologies—QuickTime and SuperCard were both made for Macintosh computers and operating systems. Versions of QuickTime and SuperCard are specific to the time the CD-ROM was created and, therefore, are developed within the framework of technology that was available at the time. This framework includes processor capabilities, hyperlink developments, file formats and specifications, image quality, etc., specific to 1994 and 1995.

Compatibility between versions of QuickTime and SuperCard is one essential element for newer computers to read *The Rebecca Project*. QuickTime is a widely adopted file format that continues to be backwards compatible. As I saw with the test on the Mac OS X, I was still able to view the individual QuickTime files even though *TRP* program was not running. However, the problem with being able to view the QuickTime files on the OS 9.1 may indicate some complication with compatibility, though I cannot determine this for sure. While there is always the risk of not being able to read QuickTime files in the future, it is not as endangered as SuperCard software.

SuperCard is an authoring tool that continues to be developed and supported today. As stated earlier, the company that owns SuperCard, Solutions Etcetera, provides support for both Intel-based and PowerPC-based computers. (Whether or not they are able to migrate older Mac-only files to PC-compatible files is undetermined at this point.) However, SuperCard is still not a very popular authoring tool. Furthermore, given the history of SuperCard changing developers over the years—SuperCard was bought and sold by at least five companies since its development in 1989—long-term development and support is highly questionable[13].

Other things to consider include the image files, graphics and fonts. While *The Rebecca Project* does come with its "fonts" file/folder, the test for the Mac OS 9.1 indicates that

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[13] "A Brief History of SuperCard" SuperCard Resource, http://supercard.netfirms.com (accessed 11/16/06).

there may already be problems with translating the fonts to different operating systems. Links and navigation is also something to consider.

In addition, *TRP*'s discussion of "Authorship," or auteurship, points to an interesting fact about this CD-ROM. In the discussion, we learn that Hitchcock, du Maurier and David O. Selznick may all be considered the authors of the film production, *Rebecca*. Similarly, if we look at the production of *The Rebecca Project*, we might name both Rabinovitz and Easley as authors—Rabinovitz deciding on the editorial content and Easley managing the overall design. (Credits also name Robert McBurney as providing additional programming.) Whose vision might we look to in order to determine the authenticity of the work?

IV. RECOMMENDATIONS AND PRESERVATION STRATEGIES

For the CD-ROMs (or optical media in general), it is recommended that the environment be maintained at 70°F for 50% maximum RH[14]. If these optimal environmental conditions cannot be maintained by Avery Fisher's current facilities, then efforts should be made to monitor conditions and keep the temperature, and humidity in particular, close to these guidelines and *as stable as possible*. This is because dramatic fluctuations in temperature and humidity also contribute to accelerated deterioration and complications. In addition, the general environment should have little or no light. The areas should have good air circulation and be cleaned regularly for dust/particulates. Shelves should be metal with the bottom shelf raised off of the ground at least 3 - 4 inches. There must also be fire detection and suppression systems.

At present, AFC's facilities follow most of these guidelines, except the temperature and humidity conditions. For this, it is recommended that the library be monitored regularly and that de-humidifiers be brought into the area, particularly during the summer months when temperature and humidity go beyond recommended levels. In addition, the jewel cases should be changed to inert plastic, polypropylene CD/DVD containers or sleeves.

When it comes to how to preserve the digital work, it gets more complicated. There are different strategies when it comes to preserving digital works, which are outlined below. In addition, besides preserving the actual work itself, it is also important to keep any related material as to the technical requirements, content, design, function and development of *The Rebecca Project*. This includes the CD-ROM booklet and also contacting both Lauren Rabinovitz and Greg Easley to compile documentation regarding its construction.

Other strategies to consider (in no particular order), with a brief explanation of the advantages and disadvantages of each:

- Printing and recording *The Rebecca Project*

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[14] Image Permanence Institute Media Storage: Quick Reference

One possible method for preserving the digital work and keeping a visible record of *TRP* would be to print out screen images of the pages and/or videorecording the computer screen as it is being used. One of the main advantages of printing out screen images is that the resulting records are independent of the technological complications. Whereas new media is known only to have a shelf life for 10 to 15 years, paper is known to last for centuries if cared for properly. Videorecording the screen gives a better record of its navigation than screen prints, but it is not independent of playback equipment. However, one of the main disadvantages to these methods is that they do not allow for the user interactivity that is essential and inherent to the experience of *TRP* and CD-ROMs in general.

- Creating a web-based version and web capture
  Another method for prolonging—if not preserving—*The Rebecca Project* would be to convert the work into an HTML file and storing it on the web. This allows it to be stored and duplicated in multiple storage media, and it retains the overall design and interactive nature of the project. This would allow it to be captured and put into a web archive, such as those developed by the Library of Congress and the National Digital Information Infrastructure and Preservation Program (NDIIPP)[15]. However, development of this type of preservation is still in its earliest stages, and there are no conclusive studies to indicate that this is a long-term solution.

- Emulation of original software for TRP
  Another suggested method for preserving a digital work is to develop a technological technique to recreate, or emulate, a work's original software for future computers or technology that is currently unknown or not yet developed[16]. This would retain the design, interactivity and experience of a digital work as close to the original as possible, considering the rapidly evolving nature of digital technology. However, as in the web capture method, studies for this approach have only begun, and it is still too early to tell how feasible this method is for long-term preservation.

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[15] Library of Congress, National Digital Information Infrastructure and Preservation Program, http://www.digitalpreservation.gov/index.html.
[16] Rothenberg, Jeff. *Avoiding Technological Quicksand: Finding a Viable Foundation for Digital Preservation*. Council on Library and Information Resources: January 1998, via http://www.clir.org/PUBS/reports/rothenberg/contents.html (accessed 12/2/06).