THE TEST OF INTEGRITY:

HOW TRADITIONAL PERIODICALS STACK UP TO THEIR ONLINE COUNTERPARTS

by
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A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science
in Library Science

Chapel Hill, North Carolina

April, 1999

Approved by:

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Advisor

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Sarah E. Gehring. The Test of Integrity: How Traditional Periodicals Stack up to their Online Counterparts. A Master's paper for the M.S. in L.S. degree. April, 1999. 67 pages. Advisor: Evelyn H. Daniel.

This study examines the differences between the electronic and print versions of two periodicals: *Time* and *U.S. News and World Report*. Three versions of each periodical were reviewed: traditional print, World Wide Web (Internet) and a database (Lexis-Nexis). Sample searches were selected for a four week period (January 4, 1999; January 18, 1999; February 1, 1999; and February 15, 1999.) Information about the location, graphics provided, and content were analyzed in order to determine which format is superior for different purposes. Results were as follows: Fewer content errors were found in *Time* for all of the different versions. Information about graphics were superior in Lexis-Nexis. *U.S. News and World Report* was superior for locating in the print and World Wide Web. The quality of the graphics were superior only on the World Wide Web. The study raises librarians' awareness about omissions, deletion information, location and changes in title, graphics and pictures that occur when a periodical is accessed in different formats. Tables, a bibliography, and a literature review are provided.

Headings: Information Systems – Evaluation

               Newspaper Libraries

               Information Systems – Special subjects – News

               Database Searching -- Evaluation

Introduction

In today's burgeoning environment of electronic sources, there is much discussion over which type of source is the "best " to use. Types of sources can be defined as traditional sources like print or electronic like databases or the World Wide Web. There are many ways to define the word "best", including the efficiency, the searchablity, what type of errors occur, and if the information is in its' entirety correct. Everyday, librarians have to make decisions relating to where information can be found in the most efficient way, whether they are looking for an article in a periodical or newspaper, or consulting an online source.

This study is an attempt to answer the following question: How do the print, graphical online (World Wide Web) and text-based versions (Lexis-Nexis) of *Time* and *U.S. News and World Report* differ with respect to 1) method of information location, 2) graphics, and 3) the frequency of content error. Both periodicals are used on a regular basis in special libraries, as evidenced by their listing at numbers 13 and 27 respectively of the top fifty magazines at the home page of American Journalism Review, http://www.ajr.org (accessed November 1, 1998). They will be resources a librarian would consider as a part of a news library collection.

Information about the location, the graphics provided and the frequency of errors are three important issues that must be addressed when considering which format may be

superior. Librarians must be concerned with these issues because of the importance of

saving time when searching for a particular article. This study will assist librarians and

news researchers by classifying how long it takes a user to find an article depending on the

format, if the entire article with all of the graphics available. The number and kinds of

errors that may occur are also reported. By performing a study on which source type is

the "best" to use, one can see how well these publications have adapted to an electronic

environment.

Literature Review

To provide background on the issues of location, graphics and the quality of content, four concepts need to be addressed from the literature: 1) How news librarians use electronic resources to complete their task. 2) How time involved is important in finding a source, as well as the location of a source as viewed by the information professional. 3) How important graphics are to the news librarian. 4) How important the quality of content is and can be tested for electronic sources. The sources below represent a comprehensive selection of articles that cover these concepts.

News Librarians Use of Electronic Resources

Lany McDonald in 1984 surveyed newspapers to learn about database use. Her results indicate that the database most subscribed to by newspapers at that time was Lexis-Nexis, followed by Dialog (McDonald 1984, 14). Ebbs addressed the question of who controls the databases used in newspapers. She found that in most newspapers the library controlled them. The majority of respondents in the study also noted positive statements about the benefits of database use for research (Ebbs 1998, 3).

Later surveys describe the actual use of databases within a news organization. An article by Hansen, et al describes the results of a study of reporters and the sources they used to complete a story (Hansen, Ward, Conners, and Neuzil 1994, 561-572). The authors include an extensive bibliography about studies examines the practices used in

newspapers when researching stories. It also includes studies about the use of technology

in the news industry (Ebbs 1998, 4).

John Piety examines the difficulty in remembering that print sources are still

available. He points out the differences between the long written reports found in print

sources compared to the one paragraph summaries found on the Web (Piety 1997, 88).

The comprehensiveness of coverage must be recognized when trying to judge whether the

print or the World Wide Web format is superior.

Time and Location of Sources

Numerous articles in the literature concern finding information on the Web.   The

following is a brief synopsis of those articles:

Kitty Bennett argues that there is so much information out there that it is often

difficult to find the correct answer (Bennett 1995). She states that "reporters are fond of

suggesting keywords to plug into the universal, monster database of information" (Bennett

1995, 7). In an understated way she discusses the amount of time and the hard work it

takes to locate the right information, especially in the electronic age.

Among the articles about online searching on the Web, Michael Jesse breaks down

the four big database providers -- Lexis-Nexis, Dialog, DataTimes, and DowJones -- and

describes the differences between the traditional ways of searching and new considerations

when using the database from the World Wide Web (Jesse 1997).

Steven J. Vaughan-Nichols provides a number of tips that would help a researcher

in finding accurate information faster. He discusses the importance of knowing the

different search engines and catalogs, and the subject being searched. He also points out

that the user should expect limitations, realize there is an overload of data, ask questions instead of phrases, use boolean operators, and do graphics searching (Vaughan-Nichols 1997). Vaughan-Nichols also provides a number of Websites that assist users in finding detailed information.

Many writers have brought up questions concerning print sources and information organization vis a vis the Web. Chuck Koutnik examines the elimination of print sources compared to the Web. He concludes that Web sources are strong in some categories of reference questions, however, they can not be used to answer all types of questions (Koutnik 1997). He points out that the Web is "extremely reliable for finding up-to-date information unavailable elsewhere" (Koutnik 1997, 428). He also points out that the "time it takes to navigate the Web through many self-interest sites will for a long time make it easier and quicker to pick up a dog-eared World Almanac for many reference questions instead" (Koutnik 1997, 429).

Stephanie C. Ardito discusses a number of areas in which the Web is a good place to search and the advantages of searching there. She also includes why the traditional sources should be used. She says that, "...professional searchers face challenges as they organize and retrieve the world's information" (Ardito 1998, 57). Her article balances the traditional ways of searching and the use of electronic sources discussing the pros and cons, including time and location.

Among the numerous articles concerning how to locate articles from online databases, Raya Fidel focuses on the decision made by a researcher concerning whether or not to search by a descriptor, textword or both (Fidel 1992). She states that "the decision

about what type of search term to use depends on the specific situation" (Fidel 1992, 1)

and concludes by saying "both textwords and descriptors are necessary for quality

searching" (Fidel 1992, 8).

Graphics and Their Importance

Only a few articles in the literature focus on graphics and their use in electronic

sources compared to traditional sources. Thomas B. Hickey compares online journals to

traditional print journals and states that one of the differences is the extensive use of color

graphics in online materials (Hickey 1995, 529). He observes that graphics used to be a

novelty, but that it is becoming the norm. He also argues that with online journals one is

able to customize the articles and that the user has some control over the articles both

in how they are printed and how they are viewed on the screen (Hickey 1995, 530).

Electronic Quality and Testing

Many articles address the issue of quality control of electronic resources. The

following focus mainly on special libraries, except for the first article discussed from the

viewpoint of an academic library. Carole J. Richter and Threasa L. Wesley provide a good

definition about what constitutes quality control in their comparison of two indexes for

academic libraries to determine which is "best" for the user (Richter and Wesley 1996).

One system was a CD-ROM product and the other system an Internet one.   They

concluded that there was no clear answer regarding product superiority; A user must

consider all aspects of the system together to make a decision about quality control and

then to be flexible when making a decision (Richter and Wesley 1996, 67).

The following articles focus more on special libraries and their use of commercial

databases. M. and W. Rittberger introduce the idea of evaluating database quality by separating the steps used in the database record (Rittberger and Rittberger 1997, 25). They break down the steps involved with creating a database to try and find where the errors occur. The method involved in the study is what made the results interesting.

Peter Jácsó wrote two articles addressing database errors (Jácsó 1993). In the first he addresses "errors of omission," -- errors that occur when the user erroneously makes the assumption that the information will be there (i.e., document type or language code) and it is not (Jácsó 1993, 38). In the second article he address "errors of commission," – errors of inaccuracies and inconsistencies (Jácsó 1993, 30). In both articles he provides a number of methods to discover these types of errors.

Finally, Anne P. Mintz that calls for stringent quality control measures on the part of commercial database providers (Ebb 1998, 7). She suggests that the database providers include a FIXIT command, which could be implemented by a user when an error is noticed in a database (Ebbs 1998, 7).

Methodology

General Information

This study compared the print version of selected articles from two weekly periodicals to the same articles and periodicals accessed online through the World Wide Web (Internet) and through one commercial database, Lexis-Nexis. The periodicals, *Time,* and *U.S. News and World Report*, were chosen for the study as they are considered two of the most heavily used periodicals in news libraries. In a listing of the top fifty magazines produced by <u>American Journalism Review</u> at http://ajr.newslink.org/mtopus.html (accessed November 1, 1998) they were listed numbers thirteen and twenty-seven, respectively. They represent high use for many readers and are especially important for people interested in news-related subjects.

The World Wide Web was chosen because researchers are relying on it more and more frequently, (Jesse 1997, 6) in part because it is inexpensive and relatively quick to access. Many use it for ready reference information and often find it easier to search then the print version because it is formatted for the average end-user.

Lexis-Nexis was chosen because it is considered one of the "big four" databases among news librarians, (The other three are Dialog, DowJones, and DataTimes) (Ebbs 1998, 8). Lexis-Nexis also indexes both periodicals in full text, making it a prime source of information for the study.

Specifics of the Study

Four publications of the two periodicals from the following dates: January 4, 1999; January 18, 1999; February 1, 1999; and February 15, 1999 were studied. The dates were chosen because they represented equal intervals of a two-month period. Articles were randomly selected from the Table of Contents of the print version of the periodicals. The extra material provided in the World Wide Web version will not be included in this study, although, of course, the added value might be a consideration. Every third article was chosen if the article was over 700 words in length. The researcher performing the study made the decision on the word length by visually scanning the article and knowing how many columns (approximately 3) in a magazine equal 700 words. The sample of 43 articles, covered different subjects addressed in the magazine, and was representative of the periodicals subject coverage.

Print Version

The Table of Contents was used to locate the articles in the print editions. This was although occasionally difficult as the title of an article was sometimes different than the title in the Table of Contents. Data collected included the number of subject headings for each article provided by the periodical, whether the title was different than the one printed in the periodical's Table of Contents, and whether there were page numbers on the first page of the article. This data was entered in a Microsoft® Excel spreadsheet. The graphics were also examined in the print versions. Errors having to do with missing data in the graphics, captions and other errors relating to the graphics were entered in the spreadsheet, too. The frequency of content error was examined by

reading the article for confusing information and spelling errors. If the article being

addressed was the cover article featured by the periodical, then the cover title was

compared to the actual article title. All of this information was noted in the spreadsheet.

World Wide Web Searching

The method of locating the articles on the World Wide Web focused on the official

web sites for each periodical namely, http://cgi.pathfinder.com/time (accessed November

1, 1998) for *Time* and http://www.usnews.com/usnews/home.htm (accessed November 1,

1998) for *U.S. News and World Report*.   The URL was typed directly on the address line

in the browser. After arriving at the official home page of the periodical, a methodical

search was done to determine how to find the article without using a search engine. The

screen-viewed Table of Contents and any underlying links were examined. In some cases

the researcher had to link to "This Week's Issue." If this occurred, each page was

examined again in the same way in which the home page was examined; any screen-

viewed Tables of Contents and underlying lines were examined, until the full article had

been found. The number of pages needed to access the article and the amount of time to

arrive at the article as well as the title on the Web Contents page were noted on a

spreadsheet. The number of links needed to access and read the article in its entirety were

also noted. A second search was done on the home page using the sites search engine, if

available. The keywords for the search consisted of major keywords from the title of the

article. A final search was done using the search engine by using keywords developed by

the researcher after reading the article. Keywords were chosen from the lead and

concluding paragraphs. For each search the results were listed in the spreadsheet.

The graphics of each article were examined and compared to the print version along the following parameters: 1) Is new information present? 2) Are graphics interactive? 3) Do they contain more or less information than the print version? Each graphic was listed in the spreadsheet categorized by different aspects.

The article was read aloud by the researcher while an assistant followed along with the print version. This enabled the researcher to isolate the frequency of content error and list it in the spreadsheet.

Database Searching

The method of article location on the database, Lexis-Nexis, focused on the command search line. Before typing anything in the command line the researcher chose, the library database NEWS. Once entering that library, either the file TIME or the file USNEWS was examined. Two searches were executed: For each search the keywords were the same ones used in the World Wide Web search:

1. The search line was DATE is _____ and the keywords from the title of the article with each word separated by the connector and. If further clarification was needed a Modify command was executed. Once the number of articles was narrowed down to under ten, a cite command was issued and the correct article was chosen and; 2. The search line was the DATE is command and keywords about the subject of the article separated by the connector and. The Modify command was done only if further clarification was needed by the system. Once the number of articles was narrowed down to under ten a cite command was issued and the correct article was chosen. If anything was out of the ordinary it was listed on the spreadsheet.

Since there are no graphics available in the text-based Lexis-Nexis version, the article was read to see if the lack of graphics lead to confusing information. If a statement was present designating the omission of graphics, it was noted on the spreadsheet.

The article was read aloud while an assistant followed along with the print version. Any errors were noted on the Excel spreadsheet. The types of errors will be addressed in the "Comparison" section.

How the Comparison Was Completed

In all the articles, the title, body of the article, byline, and graphical information (if any) were examined. All elements were analyzed on the spreadsheets. These tables may be found in Appendix A.

The **method of location** for the articles was listed on a spreadsheet in the following manner:

For the *print version* the following aspects were examined:

- The page number from the Table of Contents;

- If there were page numbers on the first page of the article;

- Number of subject headings the researcher examined;

- If the title from the Table of Contents was different than the actual article.

For the *World Wide Web (the Internet)* the following components were studied:

- Amount of time in minutes and seconds it took to find the article;

- Title on the Web Contents page;

- Number of pages accessed to reach the article;

- Where on the screen the article was located;

- The keywords used to find the article by title;

- The keywords used to find the article by subject;

- Number of links to read the full article.

For the *database, Lexis-Nexis* the following components were studied:

- If the keywords for the title were the same as those in the World Wide Web version;

- If not, what keywords worked;

- The number of articles found with the keywords;

- If the keywords for the subject were the same as those in the World Wide Web version;

- If not, what keywords worked;

- The number of articles found with the keywords;

- Anything out of the ordinary.

The **graphics** for the articles were listed in the following manner:

For the *print version* the following components were studied:

- Number of graphics in the article;

- Type of graphic (chart, photo, etc.);

- Whether there was any incomplete or confusing data.

For the *World Wide Web (Internet)* version the following components were studied:

- Number of graphics in the article;

- Type of graphic (chart, photo, etc.);

- If the graphic was different from that in the print version;

- If it differed from the print version and if so, how.

For the *database, Lexis-Nexis* version the following components were studied:

- If there was a statement about lack of graphics;

- Since there were no graphics, whether the article was confusing;

- If it was confusing, in what way.

The **frequency of content error** were noted in an Excel spreadsheet under the following:

For the *print version* the following components were studied:

- Was the cover title different from that of the actual title of the article?

- If so, what was the difference?

- What type of error was present (further explained below);

- Where the error occurred in the document;

- Description of the error.

For the *World Wide Web (Internet)* version the following components were studied:

- What type of error was present;

- Where the error occurred in the document;

- Description of the error.

For the *database, Lexis-Nexis* version the following components were studied:

- What type of error was present;

- Where the error occurred in the document;

- Description of the error.

Ebbs's (1998) categorized the types of errors she found follows:

- Missing information -- part of the story is incomplete;

- Changed information -- wording has changed;

- Additional Information -- more information in the online version than in the print version.

- Missing Story -- a story appeared in print but was not available online.

- Typo -- a typographical error online.

- Factual -- a factual error online, -- used when a story's online information differs from that of the print article.

Results

The three types of formats, print, World Wide Web, and database, were analyzed by location, graphics and content error. The information found is presented under each format type. The following is a summary table that provides the relative advantages between the different formats:

		Time			*U.S. News and World Report*	
	Print	**WWW**	**Lexis**	**Print**	**WWW**	**Lexis**
Location						
Page #	__			+		
Search Title		__	Even		+	Even
Search Subject		__	Even		+	Even
Graphics	Even	__	+	Even	+	__
Content Error	Even	+	+	Even	__	__

Print Format

The location of the articles in the print format was examined 1) For presence of the page number on the article, 2) Difference of title from that used in the Table of Contents,

and 3) Number of subject headings under which the article was placed on the table of contents. Of the 43 articles in the study, the page number was on the article in 37 (or 86%) of the sample. For the six articles (14%) without page numbers, four (66%) were from *Time* and two (33%) from *U.S. News and World Report*. Four out of the six articles (66%) were longer and had more graphics and content than the articles with page numbers. However, other longer articles did include page numbers. A major problem concerning the page numbers being on the articles were the page numbers that occurred in *U.S. News and World Report*. For no apparent reason, the page numbers had supplements. For example, if an article began on page 6, the next page might be BC-6 instead of page 7. This occurred many times but was not noted by the researcher. However, it made finding the articles using the page numbers difficult because one expected page 7 to come after page 6 not page BC-6.

The title of the article on the table of contents was different in 72% of the articles studied. Ten out of the eleven articles where titles did not differ were from *U.S. News and World Report*. Titles of the two articles that were considered cover articles also differed from that of the actual article as was the table of contents title.

The number of subheadings in the table of contents for each article ranged from 0 to two. In all cases *Time* had one or two subheadings for its articles while *U.S. News and World Report*, in all cases, used no subheadings or only one to organize its articles.

The locations of the articles differed between the periodicals. The use of subheadings as well as the Table of Contents title versus the actual title can see this. Both of these aspects would affect a researcher attempting to find an article using the printed

periodical. The differences in the title would be a detriment unless the researcher

previously knew this, especially when skimming the table of contents for an article for

which only part of the title is known. Many times, the title used on the contents page

differed to such an extent that there were no words that were the same as that of the

actual title. That the cover title is different from the actual article would also be a problem

for a researcher or looking for the article. The cover title might catch the eye but then be

difficult to find. In this study this problem would only occur with *Time* since *U.S. News

and World Report* is consistent with the title of its cover stories. The number of

subheadings might only cause a problem if an article was not under a subheading that the

researcher thought it should have been. This would be especially important if there were

two subheadings because of the added detail necessary to look through.

The graphics in the print format mainly consisted of pictures, cartoons, and data

boxes. Of the 43 articles with graphics, eleven (25.6%) had confusing data relating to the

pictures in the article, six (14%) had confusing data relating to the cartoons, and three

(7%) had confusing data relating to the data boxes. Confusing data related to the pictures

included no caption for the article, the caption given was incomplete or blended into the

article, the picture did not relate to the article, or the caption was lengthy and confusing.

Confusing data related to the cartoons included no captions (because the cartoon is

supposed to be funny on its own) or confusion due to the subject matter presented in the

cartoon. Confusing data related to the data boxes consisted included lack of reference in

the article, too much data presented, or part of the information in the data box was

actually a quote and an integral part of the article.

Time had ten (23.2%) articles with problems and *U.S. News and World Report* had nine (20.9%). The errors appeared to have no relation to length of the articles or number or graphics. The errors occurred each time data was collected regardless of the subject matter or type of article of which the graphics were a part.

This could be a problem for a researcher using these periodicals because there is supplementary material available in the graphics. However, due to the confusing and incomplete data shown with this study, the data used by the researcher could be misinterpreted or used incorrectly. Since sometimes no captions were provided or other information about the graphics, information could be missed and the entire story not told. When no information is provided for a graphic, the picture can be misinterpreted especially if it is hard to understand why it is part of the story. Graphics are an element that editors need to recognize as sources of further information. Many times a picture or graphic will lure a person into reading an article, but if information is missing or incorrect, as evidenced by this study, the reader may come away from the article with misinformation.

Content error was not prevalent in the 43 articles studied. Only in six (14%) cases was the information confusing. Of those six, four contained confusing information. Two contained typographical or grammatical errors, which made the article difficult to read. However, these errors did not affect the meaning or structure of the article itself.

World Wide Web Format

The location of the articles on the Websites was very different depending on which periodical the researcher was studying. When locating articles on the *Time* Website, the first question is if the article is from the current issue of *Time* (the one on the newsstands)

or a past issue of the periodical. Looking for a current issue can bring disappointment.

Only a few randomly picked articles are included under the link for "From *Time* magazine"

for the current issue. However, a user is searching for past articles can go to the magazine

archive and choose a specific issue. (This is how the researcher located the articles for

this study.)   If a reader needed a specific article from the current issue of *Time,* there is a

good chance the article will not be present. *U.S. News and World Report,* on the other

hand, had the complete issue under the link for "This week's issue" even when the

magazine was still on the newsstands.

Once the correct issue was found, the location was analyzed by the amount of time

it took to find an article, the title of the article on the Web content page, where on the

screen the article was, the number of pages to get to the article, the number of links to

read the entire article, and if the article was found using specific keywords from the title

and the body of the article.

The amount of time to locate an article ranged from only 10 seconds to 2 minutes

and 10 seconds, with an average of 24.3 seconds. The first time the researcher searched

for an article on the World Wide Web was the most difficult, due to unfamiliarities with

the page layout. However, after the first week of data collection, the researcher learned

where certain articles were placed on the framework of the page and how the articles on

the Web corresponded to those on the printed table of contents, making further location of

articles faster and more efficient.

The title on the Web contents page differed dramatically from that of the printed

table of contents. Many times the title contained part of the subheading contained on the

printed contents page. For the majority, the title for the Web table of contents for the

Time articles were more likely to be similar or the same as the printed table of contents.

However, the *U.S. News and World Report* title was completely different from that of the

table of contents in the printed version. This is one reason it took a longer period of time

to find the articles from *U.S. News* on the Web then it did for *Time*. The difference in the

titles must be taken into consideration when looking for an article on the World Wide

Web.

The question of where on the computer screen the articles were found differed

depending on which periodical was being analyzed. For *Time,* the articles were in the

same order as found on the printed table of contents. They also had the same subject

headings. If, in some cases, there was an article that was considered a cover story, for

example "Men of the Year," it was placed at the top of the web page. However, the web

version of *Time* did not always have a story. The regular features were always found at

the bottom of the screen. This was the only difference from that of the printed table of

contents where the articles are intermingled with all of the features. However, this did not

cause a problem, and in most cases a person will not be looking for these regular feature

types of articles. Overall, they were relatively easy to find on the screen and the location

on the screen was always the same. The articles were always in the middle of the screen

(not in the ancillary frames) and were organized in the same order as the print version.

U.S. News and World Report, by contrast, used all parts of the screen. If an article

was a column or what was considered a regular feature it was found on the right side of

the frame. This is slightly similar to that of printed table of contents where the articles are

placed at the end of the table and always on the right side of the page. All of the other

articles, except what was considered the cover or main story, fell under subject headings

that were the same as the print. However, these articles were not always in the same

order as that of the printed table, therefore causing problems when trying to find the

article especially when combined with the differences in the title. When dealing with the

covers or main stories, which were present in every issue of the periodical, the articles

were always at the top of the Web page. However, if a number of articles were placed

together, (i.e. because it was a special report), links must be followed in order to find all of

the articles. They were not present on the main Web table of contents.

The number of pages (two) needed to find the article was consistent except in the

case of a cover story or special report in *U.S. News and World Report*. In that case, there

was an extra link in order to find the article raising the number of links from the average of

two to that of three.

The one variable for which there was a clear distinction between the periodicals

was the number of links for the full article. In all of the cases *U.S. News and World

Report* required no additional links in order to read the entire article. The entire article

was on one screen. However, for *Time,* depending on the length of the article, links were

always needed to read the entire story. If the article was more than two and half printed

pages, from the screen, then there was a link to read the rest of the article. This would

make it difficult and time consuming if one was only looking for a specific part of an

article.

When searching for the articles using the search engines provided by the site there

were no definite answers. *Time* offered an option to search what they called Pathfinder, which is an inclusive search of *Time, Fortune,* and other *Time*, Inc. periodicals. However, this researcher only used the search *Time* option. Every article in *Time* was not found until the last data collection on February 15, 1999. In that data collection, in six out of the eight (75%) searches the article was found. However, the date of the article was incorrect. It was posted as January 14, 1999, on the search results page. The inconsistency involved in searching the database for *Time* would present problems for a researcher. He/She would not know for sure if the article could be found, or if the article would have the correct data. This would be especially problematic if the researcher had incomplete data, for example, only the date of the article. Regarding *U.S. News and World Report*, a majority of the time the article was found without any errors being present. One aspect that was very good with the search engines was that a researcher could specify what areas of the Web site they wanted to search. For this study all areas were chosen. The only time that it became difficult to find the article, or the article was not found, occurred when an error message came back that said the search engine was overloaded. This inconsistency, in not knowing in a given day, if the search engine would be overloaded in the reliability of the search engine, could cause a problem for the researcher.

The graphics from the print version were not present on the Web sites for the majority of articles. Graphics were lacking from 31 (72.1%) of the articles on the Web. Of the 12 (28%) that contained graphics, eight (25.8%) were wholly different from the graphics contained in the print version. These differences were the following: different

pictures, no captions, pictures missing, data boxes formatted differently, and missing data boxes. Of the 12 (28%) articles that contained graphics, only three were from *Time*. Many times, the graphics are an intricate part of an article, and by not having them present it is a detriment to the article and more importantly, the periodical itself.

One might assume that there would not be content error for the articles on the Web, because they would most likely be scanned into the Web site from the printed version. However, this was not always true, eight (18.6%) articles contained content errors. These errors consisted of changed, missing, or added information and typos. For *Time*, five articles had content error, accounting for 63% of the errors. Even though, *Time* had more content errors than *U.S. News and World Report* the type of error was less important. The researcher found missing information in *U.S. News and World Report* , including paragraph. The incorrect numbers might give a person misinformation. These errors affected the content of the article to a greater extent than the errors present in *Time*.

The results of this examination of the Websites of these periodicals boil down to the design and maintenance of the Websites themselves. *Time* does not have as good a Web site in regards to searching and viewing the on-screen information as *U.S. News* but has less errors in the content of the articles themselves. The editors of these journals need to make a decision about which is more important: being able to use the search engine and reading the entire article on one screen as in *U.S. News and World Report*, or having the entire article be correct in content as in *Time*. The best answer would be to combine the Web design from *U.S. News* and the person in charge of placing the articles on the pages for *Time* and then add someone who could work on the graphics for the articles.

However, since this is not the case, this study provides an explanation of the types of errors that might occur when viewing an article on the World Wide Web. If a person is aware of these problems, they then can compensate for them when looking for or reading an article.

Database Format

The articles were found on Lexis-Nexis using the same keywords used for the World Wide Web searching. However, in some cases keywords had to be added to reduce the number of hits and sometimes words had to be deleted for no apparent reason. Of the 43 articles studied, three (7.0%) searches had to be revised in order to find the correct article. For the search using the keywords from the title, the range of articles found under hits was from one to seven with the average being 2.069. For the search using keywords from the subject, the number of hits were either one or two with the model being one. One of the difficulties with the search was the date of the issue. For the first periodical from January 7, 1999, the date for the *Time* and *U.S. News and World Report* articles was December 28, 1998 because that week was a double issue. This would cause problems for a researcher if they did not know that an issue was considered a double issue and therefore only the first date would be input into Lexis-Nexis. Another problem would be the number of cites that were a result of the keywords using the title. This would increase the cost and time it would take for a researcher to find the articles. All of these issues would have to be taken into consideration when deciding to search Lexis-Nexis

In 100% of the 43 articles studied, there was a statement about the graphics in the

Lexis-Nexis output. There was also a clear distinction in the periodical being reviewed

concerning the graphics. *Time* did an extremely good job of explaining its graphics

without confusing information. It provided the caption, the photographer, and, in

brackets, any information that would help a reader in further understanding the graphic

from the article. The data boxes were also not a problem, always being present at the end

of the article. However, for *U.S. News and World Report*, almost every article had

confusing information about the graphics. The magazine did not provide further

information, as *Time* did. If there were no captions for a picture, the only information

given was the word, "picture." If there were numerous pictures with or without captions

for an article, all of the information was blended together making it extremely difficult to

find where information about one graphic ended and the next began. The data boxes were

not always present at the end of articles. At times, it seemed as if, it was decided that for,

Lexis-Nexis, the data box would be considered a separate article, while in the print table

of contents or in the World Wide Web format, the box was a part of the main article. This

made it difficult to determine if the entire article was present on Lexis-Nexis.

Out of the 43 articles studied nine (20.9%) had content errors. Of these nine only

two (22.2%) were from *Time*. The *Time* errors were minor, for example a missing quote

by a picture. However, the seven (77.8%) errors from *U.S. News and World Report* were

much more substantial. For example, one article had two kinds of missing information,

one kind of changed information and two typos. Other types of errors were missing

percent signs, missing paragraphs or parts of an article, and strange symbols in place of

numbers. These errors made the information from the articles from *U.S. News and World*

Report less reliable than that from *Time*. The expectation for mistakes is much higher from *U.S. News* and users must be made aware of this.

Overall, *Time* has an edge to *U.S. News and World Report* in the database format. A person can download *Time* the same day it is on the newsstand while for *U.S. News* one has to wait a couple of days before the information is available. The graphical information is superior in *Time* and the content errors are fewer in number and in substance. Even though many people might think there are no mistakes in Lexis-Nexis, this study shows that one must always be aware of what they are reading and its source.

Conclusion

This study examined the differences between the electronic and print versions of two weekly periodicals, *Time* and *U.S. News and World Report* focusing on location, graphics, and content error of articles in each format. Analyzing these variables provided data that demonstrated strengths and weaknesses in the three formats. The data enables a news librarian to understand the pros and cons among the different formats, and can assist in deciding which format would be the easiest, fastest, and most accurate way to get needed information.

Lexis-Nexis and the World Wide Web (Internet), two electronic sources widely used in news libraries, have become popular in searching for information. It is important to understand the limitations of Lexis-Nexis and the World Wide Web (Internet). This study shows some of these limitations.

This study should raise librarians' awareness about the omissions, deletions, and changes that often occur to content when the format changes. One can easily assert that accuracy is of great importance in a news library because these libraries stake their reputations on providing complete, accurate information to their clients. Having a heightened awareness of changes in content due to differences in format, can lead to a greater overall effectiveness and accuracy in a news library.

This study is also significant because it raises the awareness of librarians to the

amount of time it takes to locate a particular article. A librarian must think twice about what is really the quickest way to find an article, depending on what information is known about the article.

This study's results would also be important to end-users, such as reporters who are using electronic resources more and more. This is seen by the increase in the word "Internet" in U.S. newspapers. It was used only 68 times six years ago as compared to nearly 25,000 times in the first eight months of 1998 (Tenopir 1998, 32).

Appendix A

Tables of Results

Periodicals – Print Format

Periodicals – WWW Format

Periodicals – Lexis-Nexis Format

NOT AVAILABLE IN PDF FORMAT

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