

Technology-Driven Research Methodology ***(Web, Search Engines, Databases, OPAC, End Note, Nota Bene and Bible Programs)***

Introduction

Despite our belief that print-centered media is neither going away or is even going to become obsolete any time soon, there are advances in technology that enables the researcher to be more *effective* and *efficient* in their work. We noted in the last section that traditional print sources are only as current as the research and publication date of the particular item. The major advance that technology has provided in research is to bring the “currency” of research up to the minute and to enable the researcher to access an enormous amount of information quickly. This section will introduce the student to the world of technology-driven research.

In 1995 Sun Microsystems reported that there were 27,000 individual web sites available for public access. They also reported that at that time the number of sites was doubling every 53 days. In January 2002 another industry survey reported that there were over 198 million individual web sites worldwide that provided access to over five billion pages of information.¹ When you consider that multiple thousands of web pages simply cease to exist each year, the overall growth of the Internet is almost beyond comprehension.

The amount of information that is available to anyone with Internet access is almost beyond comprehension, and is very often beyond practical use. The management of this volume of information is a vital concern to the researcher as they seek to (1) gather the best information available; and (2) gather that information in the most time efficient manner possible. A searching strategy will enable the researcher to forage their way through the jungle of data and acquire useful information.

An Illustration: Clarence Marshall and the 1949 New York Yankees

- Step One:
- Step Two:
- Step Three:
- Step Four:
- Step Five and Beyond:

Understanding Boolean Logic and Search Strategy

While the old adage, ‘you don’t have to be a mechanic to drive a car,’ is true; it is also true that with any technology or equipment some basic knowledge is necessary. A working knowledge of the parameters or limitations of the equipment along with a little bit of “how does it work” information will enable the user to more effectively operate the equipment or utilize the technology. Search engines in computer databases all (at least all the good ones) use a system for searching called *Boolean Logic*. While it sounds difficult and arcane, once you understand the basics of the system it is fairly simple to use.

All of the web-based databases, online search engines, OPAC’s use some form of the basic Boolean system, so understanding this material will make the process a little less mysterious to you.

¹ This does not include government, industry, and other private sites that are only available on an “intranet” or by means of password or some other kind of coded access.

Boolean Logic

Boolean logic takes its name from British mathematician George Boole (1815-1864). He developed a system of logic designed to produce better search results by formulating precise queries. He called it the *calculus of thought*. From his writings, we have derived Boolean logic and its operators: AND, OR, and NOT, which we use to link words and phrases for more precise queries.

The Boolean Operators

The Operator: AND

The Boolean operator AND narrows your search by retrieving only documents that contain every one of the keywords you enter. The more terms you enter, the narrower your search becomes.

- Example: eschatology AND premillennialism
- Example: eschatology AND premillennialism AND dispensationalism

Note that the lower case letters are used *purposely*. If you use lower case letters you will get results with both upper and lower case answers. If you use upper case, you will only get answers with upper case results.

The Operator: OR

The Boolean OR expands your search by returning documents in which either or both keywords appear. Since the OR operator is usually used for keywords that are similar or synonymous, the more keywords you enter, the more documents you will retrieve.

- Example: church OR synagogue
- Example: church OR synagogue OR assembly

The Operator: NOT or AND NOT

The Boolean NOT or AND NOT limits your search by returning only your first keyword but not the second, even if the first word appears in that document, too.

- Example: calvin AND NOT reformed
- Example: premillennial AND NOT dispensational

Nesting with Boolean Operators

Nesting, or enclosing Boolean searches in parenthesis, is an effective way to combine several search statements into one search statement. Use parentheses to separate keywords when you are using more than one operator and three or more keywords.

- Example: (calvin OR luther) AND NOT (melancthon OR servetius)

For best results, always enclose OR statements in parentheses.

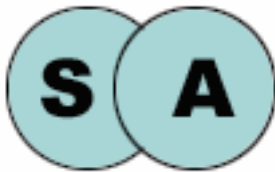
Additional Boolean Operators

There are several additional implied operators that you can also use:

- The symbol + replaces AND in many systems.
- The symbol – replaced OR in many systems.
- Enclosing a phrase in “ “ will force a search for words appearing in the exact order as you have typed.

Examples of Search Results in the TMS OPAC

If we use the keywords “sin” and “Augustine” we can see how the various results will return using the Boolean Operators.



Searching for “sin” OR “Augustine” as entries in the subject field receives 619 results in the TMS OPAC



Searching for “sin” AND “Augustine” as entries in the subject field, receives 6 results in the TMS OPAC



Searching for “sin NOT “Augustine” as entries in the subject field receives 465 results in the TMS OPAC

Internet Search Engines

As we have seen the most general method to search for information is the “search engine.” There are multiple dozens of search engines available for use. There are several things to remember about these search engines:

- There is no “best” search engine that allows for the exclusion of other engines.
- No single search engine contains all of the available web page content.
- The information in the search engine is only as useful and current as the person who originally entered the information.
- The search feature on your web browser is perhaps the weakest means of actual searching.
- Most Search Engines now are located on pages which serve as web “portals” that is the company wants you to do all of your web access through their page. This gives them a commercial presence. That is if you see their ads, use their email system, etc., they can generate revenue. This isn’t particularly a problem but you should be aware of the system.
- “Free” listings on a search page are able to list only the most basic information in the search engine. Only those who pay some price for listing their site will get more “access points”² listed.

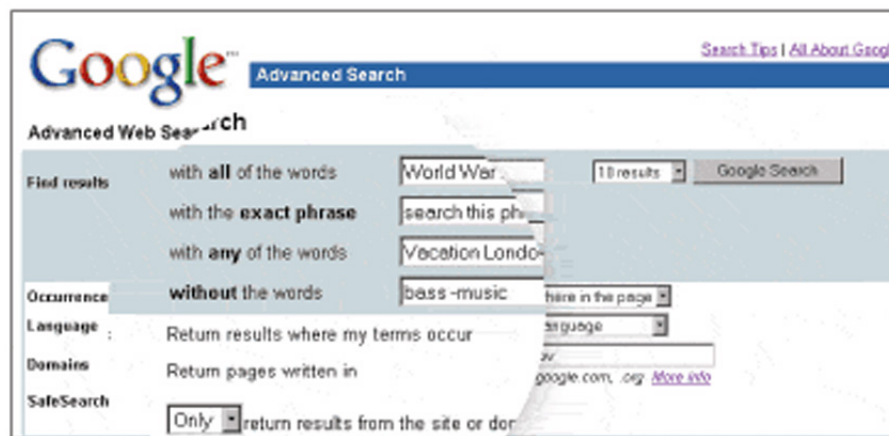
² By ‘access point’ we mean the point of contact between your search and the material you are search for. The more “access points” that have been made available for a site within a search engine, the better chance you have of actually finding that site. A site with a free listing may only list the actual URL and five to seven keywords.

On the Seminary web site (www.tms.edu) we have listed a series of the better search engines in our *Links* page (http://www.tms.edu/link_searcheng.asp). Those search engines are as follows:

Alta Vista	Dogpile	Excite	Go.com
Google	Goshen	GoTo.com	Hot Bot
iWon.com	Lycos	Magellan	Meta Crawler
Northern Light	Web Crawler		

An Example of Search Engines: Google

The functionality of all search engines is roughly the same. If you become familiar with one of the standard search engines you will typically be able to navigate through the others. To illustrate we will use one of the more popular and useful engines: *Google* (www.google.com).



Google has a "Preference" page. Here, even before a search, you can select certain preferences for your searching episode. For instance you can set the search (either basic or advanced) to eliminate certain languages that you cannot read; that is, if you don't read Norwegian then it makes little sense to have your search include web pages in that language. In 2002 48% of the existing web sites are in English while the rest are divided among other languages.

Google has a "Basic Search" page. The basic page simply allows for the entrance of a word or phrase. *Google* will then take that entrance and search for pages where that word or any part of the phrase might appear.

Google also has an "Advanced Search" Page. In the Advanced Search page there are a number of delimiters that can be activated. Those include phraseology (inclusive and exclusive) factors, language, date, and file format type, web site type (e.g. you can either specify or eliminate particular sites or type of site [.com; .org; .gov; etc.]). See the attached explanation of the *Advanced Search Page* and its features.

For the most part the "Basic" search will suffice. Remember that unlike the *Library of Congress Classification System*, a person who creates a web page may or may not use standard terms to outline or identify their page(s).

If your search word doesn't match the keywords that the site creator entered you may not find that particular site.

When you are performing a search use a variety of words and terms to complete your search. For instance if you are searching for material on Calvinism, use John Calvin, Calvinistic, and other related terms.

Final Points on Search Engines and Searching:

1. Use a variety of Search Engines to perform your searches. Again, remember, not every Search Engine has the same scope of coverage.
2. Use the ‘Bookmark’ or ‘Favorites’ feature in your Web browser to organize your search results.
3. When you arrive at a page, be aware of links that that page may have that will take you to other useful information.
4. Don’t forget that if you find what seems to be important information it may be helpful to either print the page or save the page as an HTML file in your computer so you can retrieve it again. Remember if the host of the page is an individual your information may only be a late payment away from oblivion.³

A Brief Word About the Macintosh OS

For those who use Macintosh, you have the ability to search several search engines at the same time with a search feature called *Sherlock*. *Sherlock* is a powerful searching program within Macintosh OS. *Sherlock* also will index your computer files and allow for quite powerful searching of your own files. *Sherlock* will search words and phrases and will return results with a *Relevance Rating*. A Relevance Rating indicates how likely the site matches the search you have made. Several Search Engines have a relevance indicator; however, *Sherlock*’s is one of the more reliable. Macintosh, in their new OS 10.3 has also recently developed their own web browser, called Safari with both *Google* and *Sherlock* built-in. To date Windows has not developed an equivalent to *Sherlock*.



Important Web Sites and Resources

There are several important resources for Biblical and theological studies on the Internet. Books that list sites are often thorough, but again, because of the unstable nature of the Internet and format changes within a site

³ Typically sites hosted at an educational institution (.edu) or governmental sites (.gov) are stable, that is, they don’t disappear. Commercial sites (.com) or non-profit sites (.org) are “usually” stable. If you find information on a site from a personal page within a web portal like Yahoo, Excite, AOL, etc., you should always save the information. Those sites are the least stable on the Internet.

itself⁴, books listing sites are often out of date even before they are published. Currently, most of the standard evangelical publishers will not even accept a manuscript related to the Internet or web sites for this very reason.

That being said, there is one reference work that you should have:

Durusau, Patrick. *High Places in Cyberspace: A Guide to Biblical and Religious Studies, Classics, and Archaeological Resources on the Internet*. Atlanta, Georgia: Scholar's Press, 1996; Second edition, 1998.

This work is exclusively dedicated to a listing of sites dealing with those subjects listed in the title. This work was produced under the auspices of *Scholar's Press* and the *Society of Biblical Literature*. In addition to a regular reprinting of new listings, the plan is to also maintain regular updates on their web page at: <http://scholar.cc.emory.edu/scripts/highplaces.html>. The author also gives a good introductory discussion of the Internet and electronic research in general.

Before you begin a long search for material on your own you will save yourself a great deal of time if you avail yourself of those web sites which are reference sources for sites related to Biblical and theological studies. *The Master's Seminary* maintains a large listing of sites and breaks them down by category (www.tms.edu/links.asp). Reference sites that list links are very useful, and several besides the seminary also have annotations that alert you as to what you may find.

Basic Web Bibliographic Resources

The following sites are for "Web Bibliographies." These sites generally do not take you immediately to sources of full-text resources, but list and provide links to sites where items can be found. Again, not everything on each one of these sites may be doctrinally sound, but most are good sources of information. The "gateway" to online resources at The Master's Seminary is through our library page at <http://www.tms.edu/libsplash.asp>. Starting at this page you can access the TMS OPAC system and the OCLC "First Search" System.

The Master's Seminary Online (links) <http://www.tms.edu/links.asp>

We maintain this large set of links, primarily designed for research and informational needs. It is updated and checked on a regular basis.

Phil Johnson's Bookmark's <http://www.gty.org/~phil/bookmarks.htm>

Phil Johnson is the Executive Director of Grace to You and also maintains several web pages. His list of links is mainly in the area of theology. He lists all manner of material and categorizes it in terms of "good theology," "bad theology," "really bad theology," and "really, really bad theology." He annotates the links with his own comments and keeps it updated fairly well.

The Lambert Dolphin Library <http://www.best.com/~dolphin/asstbib.shtml>

This is perhaps the most extensive set of links on the web for Biblical and Theological studies. It is also somewhat eclectic covering a lot of other subject. Well worth referring to.

Finding God in Cyberspace <http://users.ox.ac.uk/~mikef/fgic/contents.htm>

This is one of the most thorough and up-to-date sites for the various Internet resources. Maintained by John Gresham, head of Information Services at John Paul II Library, Franciscan University of Steubenville. This site should be a first-stop as you learn more about the resources on the web.

⁴ For instance, when The Master's Seminary web pages were changed to a new format (.asp or active server page) the old pages and links that ended in .html or .htm simply ceased to exist. All of the search engines that list the old seminary pages are now out of date. The data is still there, but the old search engine listings will no longer take you there.

The Society of Biblical Literature

<http://sbl-site-org>

This site has a great deal of information (some of which is in this syllabus with permission) on style, fair use issues, publishing and the definitive list of abbreviations for scholarly papers.

Review of Biblical Literature

<http://www.bookreviews.org/>

The Review of Biblical Literature (RBL), founded by the [Society of Biblical Literature](#), presents reviews of books in biblical studies and related fields. Appearing in this digital form and in print, RBL is comprehensive, international, and timely. RBL includes reviews of various topical studies, multi-author volumes, reference works, commentaries, dictionaries, bible translations, software, and other resources for the classroom and research. Multiple and contrasting reviews are often presented. The material reviewed and our reviewers come from varied academic, social, and religious perspectives. RBL produces reviews of the most recent titles in biblical studies, using the technology of the Internet and allowing readers to stay current with the freshest trends in the field.

The Master's Seminary OPAC System

In 1998 The Master's Seminary converted its library catalogue from the old "card catalogue" system to an Online Public Access Catalogue (OPAC). Our system is the Voyager system from Endeavor Information Systems. As opposed to the older card system where one often had to make three hand searches (author, title and subject) to find resources, one result at a time; the OPAC enables the researcher to search the entire library with a single search via a number of different searching criteria.

On the seminary web page (www.tms.edu/libsplash.asp) we have created a "portal" to the OPAC system to facilitate access and explain the various features available. The page looks like this:



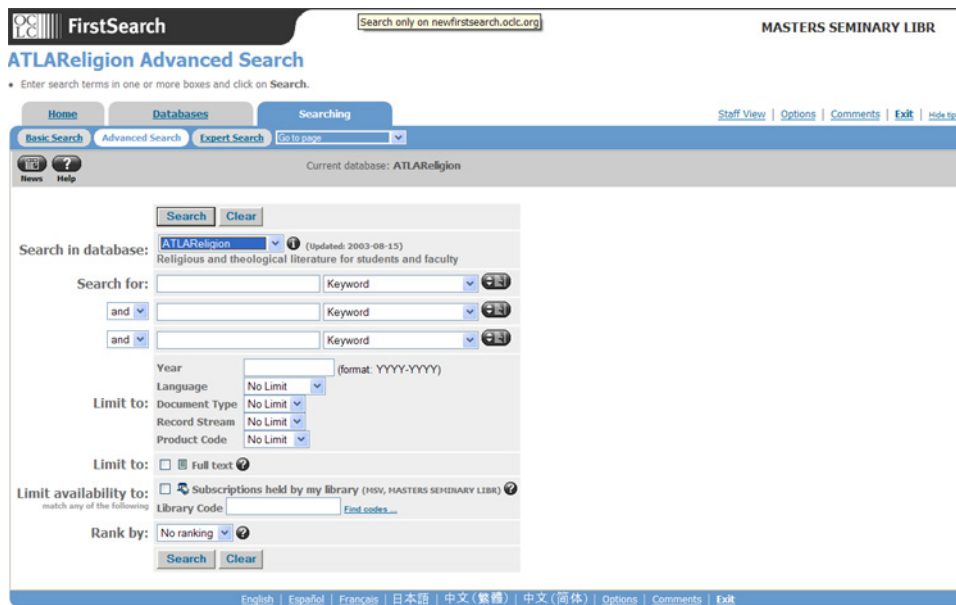
The links in the middle section take you to the various features of the OPAC itself, while the links in the right sidebar take you to different database options both within and outside of the seminary web site. This page also lists upcoming news and notes about the library (below not shown here) and the library hours (left sidebar also not shown). Normally, the best results for searching are going to be found in the "Advanced Search" page, which looks like this:



The seminary OPAC operates on the same basic principles of Boolean Logic that we previously have discussed. There are two layers of Boolean operators built into the advanced search. The typical “and”, “or”, and “not” as well as handling each line as “all of these,” “as a phrase,” and “any of these.” Additionally, you can set search limits for type of material, language of the work, date, etc. Additionally, both the seminary and college libraries can be search either together or separately.⁵

First Search

First Search is a database portal operated by OCLC. From this page (available only on-campus) the student can access nearly two-dozen different databases. It has the advantage of having all of the databases using the same interface for searching as seen below:



The primary databases that the seminary student will utilize will be the ATLA Religion Index One and Two (also the ATLA ATLAS program, which provides full text articles of a number of journals is also available through this service); World-Cat, which is a listing of over 60 million records of libraries across the United States; and Book Review, which provides an index of book review sources often not covered in the ATLA

⁵ Please note that *The Master's College* library uses the *Dewey Decimal System* for its holdings call numbers.

Other Computer Programs: End Note, Nota Bene, and a Word about Bible Programs

There are several different computer programs available that will aid the researcher in both the work of research and preparing the written product. The two that the seminary encourages students to consider are:

- Pro-Cite <http://www.endnote.com/>
- Nota Bene <http://www.notabene.com/>

End Note is a bibliographic database or more simply it is your own personal OPAC system. It enables you to search not only your own entries, but also allows you to search libraries around the world and then import the bibliographic records that you need. It will create a printed bibliography in any of the preset formats, or allows you to create your own style. This program is available in both Macintosh and Windows versions.

Nota Bene is a full-featured word processing program designed for Biblical and theological studies. The various language and font features are built into the program and operate seamlessly. There is an internal database feature and you can import the research work from *End Note* into the *Nota Bene* database for an individual paper. *Nota Bene* will format the footnotes after the Turabian style (or any one of several others) and can be modified for the special features of *The Master's Seminary*. This program is only available in the Windows version, but runs quite well on a Macintosh using Virtual PC (we recommend a G4 or better and Virtual PC for Windows XP).

Both of these programs have far too many features and uses to give a good demonstration in the class time we have for this material. Students are encouraged to download the demo versions of the programs and become familiar with them.

What About Bible Programs?

At one time there were nearly two-dozen different Bible related programs available. The marketplace has eliminated most of the inferior ones and the ones who were not supported by their companies have also dropped away. Now by "Bible Program" we are talking about computer programs that will allow you to do textual Bible study, that is study the text of Scripture both in an English translation, but more importantly in the original languages. A program that gives access to material *about* the Bible may be useful in its place, but it is not a *Bible program* as we are defining it.

Without going into all of the detail for each and every available program here are some key things to look for:

- Does it have the Gramcord Database? This is THE most important consideration when it comes to a Bible Program. The Gramcord database is the best source for study in the Greek and Hebrew texts.
- Does it have the ability to export to a word processing program?
- Does it utilize a relatively standard set of Greek and Hebrew fonts?
- Is the user interface clear and simple to use?
- Will it perform complex and advanced grammatical searches in the original languages?

There are of there other considerations as well, such as cost (most Bible programs are expensive) and how is it packaged (do you have to pay extra to unlock the modules that you actually need?). Additionally, what kind of student are you? Make sure you know why you need this program before you go out and invest a large amount of money. A large majority of students rarely utilize much more than about 50% of a programs capability.

Here are the two programs that we recommend for use:

- *Bible Works 6.0* for Windows <http://www.bibleworks.com/>
- *Accordance 6.9* for Macintosh <http://www.oaksoft.com/welcome/return.htm>

Of the two, *Accordance* for the Macintosh is the best Bible program on the market today, but it only works on the Macintosh platform. There is a Windows emulation program that will enable *Accordance* to operate on a Windows computer, but I have not been overly impressed with it so far.

What About Logos?

The *Logos* company (<http://www.logos.com/>) produces the best product on the market for viewing and searching the content of books. But of course, this isn't what makes a Bible program. The new Bible program they have produced is promising and they have some new features that will be available in 2006. *Logos* does have some attractive titles available, and they are often offered at a lower price than the print edition. They also work with *Galaxie Software* to produce the *Theological Journal CD*, which is a valuable tool. They have also produced a Macintosh version which should be available sometime in 2006.

Remember though with all these programs, the seminary guidelines are clear: in your papers you cannot cite an electronic version of a common work (e.g. *Word Biblical Commentary*, *MacArthur New Testament Commentary*, etc.) when the print edition is readily available. Also, the page numbers provided in the CD-ROM product, most of the time, do not correspond to the original print work.

Other Products

There are multiple dozens of other CD-ROM products available that may be helpful for different students. Mainly, these are comprised of electronic files of the collected works of different people (e.g., Spurgeon, Calvin, etc.) or large sets of public domain works (e.g., Schaff's *Church Father's*). The pricing on these varies, and the database programs that enable these files to be viewed are of varying quality.