

HYPOTHESIS

THE NEWSLETTER OF THE RESEARCH SECTION OF MLA

Message From the Chair

by Ruth Fenske, Ph.D.

First, I would like to congratulate two active members of the section, Julie McGowan and Jocelyn Rankin, who were elected to the MLA Board of Directors. Elizabeth Wood, our candidate for the MLA Nominating Committee was elected to the Nominating Committee, as were members Virginia Bowden, Dixie Alford Jones, Joanne Marshall, and Debra Rand. What better way to keep research in the forefront of MLA than to have members of the section serving in leadership positions at the association level.

If you have read your January *Bulletin of the Medical Library Association* carefully, you will have noticed that Michael Homan featured suggestions from the Research Section in his editorial. The eight suggestions for changes in *Bulletin* editorial practice were drawn up by the Research Policy Implementation Task Force and were presented to the Editorial Board by the Research Section in 1996. The suggestions were discussed at two meetings of the Editorial Board and by an ad hoc task force. In an interview on February 15, 1999, Michael Homan provided further details about the responses to our suggestions:

■ In response to our suggestion to “expand acceptance criteria to give priority to research articles,” a sentence was added to the Information for Authors instructions saying manuscripts that “extend the knowledge base through research ...” are welcome.

■ Our suggestion to “spotlight one excellent research article per issue” was taken to mean highlighting a research article by physical placement in each issue and by adding special editorial comment. As was reported, the suggestion was rejected because it would be difficult to select just one worthy article per issue. Also, *Bulletin* policy and practice dictate prominent placement of the Janet Doe lecture, the Leiter lecture, and the Brandon/Hill lists. It was thought research should be spotlighted in the Comment, Editorial, and Letters to the Editor sections. My impression was that we were asking that an effort be made to publish at least one excellent research article in each issue. Michael Homan does not feel there has been a lack of research-oriented articles in the *Bulletin* and he believes that almost every issue has contained something of research interest.

■ Our suggestion to use an icon or symbol to identify research papers in the Table of Contents was rejected because it might create the impression that research papers are favored over other papers. The *Journal of the American Medical Informatics Association* does indicate the different types of articles in its Table of Contents without favoring one over the other. Michael Homan pointed out that the new policy of requiring structured abstracts for research papers will serve to point out research articles, because the abstract will be in a different format.

■ The next suggestion was to “list all authors on research papers” and “increase the number of illustrations acceptable in research papers.” Both were adopted. Also, maximum length for both articles and brief communications was increased.

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Message, from page 1

■ Regarding our suggestion about structured abstracts, the *Bulletin* has decided to require them for all research papers, as mentioned above.

■ In regard to publishing abstracts of the annual meeting in the *Bulletin*, there was concern that there be a consistent forum for peer review and quality control of the abstracts. Currently each MLA section reviews abstracts for potential contributed papers and makes selections. There is no standard procedure for review of proposals for contributed papers, such as does the American Medical Informatics Association with its National Committee Peer Review of all contributed papers. The *Bulletin* Editorial Board is not up to adding this to their duties. Even if the peer review and quality issues were solved, publication of abstracts would increase the size and cost of the *Bulletin*. Publication in electronic format might be possible.

■ The Editorial Board indicated that it is not interested in publishing our literature review column in the *Bulletin*, because it does not have archival value. They would be willing to publish substantive reviews of literature on a topic, written by experts. Editorial Board members and the Editor felt that a literature review series would place the research in context and be a significant contribution to the literature of health sciences librarianship. I pointed out that the literature review column serves a current awareness function. Michael Homan said that it had reminded some of Bill Beatty's long-time column entitled Journal Notes, in which he enumerated recent articles of interest to medical librarians which had been published in other journals.

■ The *Bulletin* indicated it would welcome submission of a group of manuscripts from our 1998 post-conference symposium, co-sponsored by the American Medical Informatics Association.

We are grateful that some of our suggestions were adopted, and we will continue to work with the Editorial Board to improve the research content of the *Bulletin*.

1999 Research, Development & Demonstration Project Grant Awarded

Congratulations to Catherine Graber who has been chosen to receive MLA's 1999 Research, Development and Demonstration Project Grant! The grant provides support for research, development and demonstration projects that will help to promote excellence in the health sciences librarianship and information science field. Through her project, "Survey of Health Sciences Faculty Use of Library Computer Systems," she intends to survey the information-seeking behavior of health sciences faculty members, especially with regard to the faculty members' readiness to switch from paper to electronic information formats. Catherine and the other winners of this year's MLA scholarships, awards and grants will be honored at the Awards Luncheon and Ceremony, Monday, May 17th during MLA '99, in Chicago.

Food for thought ...

"Not everything that can be counted counts, and not everything that counts can be counted."

... Albert Einstein



"I have yet to see any problem, however complicated, which, when looked at in the right way, did not become still more complicated."

... Poul Anderson, *New Scientist*, 1969

HYPOTHESIS. The Newsletter of the Research Section of MLA

<http://gain.mercer.edu/mla/research/hypothesis.html>

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Officers & Executive Committee, 1998-1999

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		Elizabeth Wood

MLA '99 Research Program at a Glance

... submitted by Gary D. Byrd, Ph.D.



Friday, May 14th, 8:00 AM-5:00 PM

Full-Day Course

#700. *Research Methods for the Health Sciences Librarian*

Friday, May 14th, 8:00 AM-Noon

Half-Day Course

#711. *Granted! NLM Grants Demystified*

Saturday, May 15th, 8:00 AM-5:00 PM

Full-Day Course

#732. *Conducting Oral History Projects*

Saturday, May 15th, 8:00 AM-Noon

Half-Day Course

#753. *EBHC. Evidence-Based Librarianship*

Sunday, May 16th, Noon-2:00 PM

Chapter Sharing Roundtables Luncheon

#16. *Research*

Sunday, May 16th, 4:00-5:30 PM

Program Session I, Invited Speakers

A Medical Informatics Research Agenda for the Next Century

Monday, May 17th, 2:00-3:30 PM

Informal Meeting & Program

Planning and Evaluating Outreach

Monday, May 17th, 4:00-5:30 PM

Program Session II, Invited Speakers

Research Process Panel: Expert Advice to Help Make the Research Process Less Tense

Tuesday, May 18th, 10:30 AM-Noon

Program Session III, Contributed Papers

Evidence Based Medicine: Implications for the Health Sciences Librarian and Other Health Professionals

Reports of Informatics Research Results: Understanding our Present to Help Create a More Perfect Future

Tuesday, May 18th, 12:30-2:00 PM

Research Section Business Meeting

Tuesday, May 18th, 2:30-4:00 PM

Program Session III, Contributed Papers

Collaborating Today for a Better Tomorrow: Reports of Collaborative Research Crossing Disciplines, Institutions and Associations

Wednesday, May 19th, 1:00-5:00 PM

Half-Day Course

#764. *EBHC. Understanding Meta-Analysis*



Tracing the Development of Critical Evaluation Skills with the Use of the Internet



Phyllis Blumberg received her Ph.D. in Educational Psychology from the University of Pittsburgh in 1976. She has developed problem-based curricula in three different universities for medical and allied health students including her present position at MCP Hahnemann University. Currently she is the Associate Dean of Educational Affairs in the School of Public Health. She has published extensively in the areas of problem-based learning, student evaluation and program evaluation.



JoAnne Sparks is currently the Associate Dean, Resource Management at the W.W. Hagerty Library at Drexel University. She is responsible for overall collection management and technology efforts.

Introduction

Professionals need to make scientific decisions based upon accurate and current information coming from empirical research. They need the ability to critically evaluate from all sources and assimilate it (evidence-based practice). The development of these critical evaluation skills in professional students in a public health program is the background for this project.

The objectives of the project were twofold: to document changing uses of the Internet in Public Health graduate students, and to trace development of searching methods and critical evaluative criteria in these students' use of the Internet.

Setting/Subjects

The subjects were first year students in a Master's Degree Program in Public Health enrolled in a problem-based learning (PBL) curriculum. Students were expected to access information resources on their own to address student-derived learning issues. The PBL format is basically a small group setting where faculty serve as facilitators or tutors who guide but do not instruct the group. The problem or case provides the context while learning issues (objectives) drive the learning process. These objectives are the basis for the group's information needs.

Method and Procedure

The participants in this study were 24 first-year students in a M.P.H. degree program (one student dropped out of school during the year). On a take-home exam students were asked to list their most helpful resources, justify why they were most helpful and to critically evaluate these resources.

Students completed the exam question two times, eight weeks into first semester and at the midpoint of second semester. The answers were graded excellent, pass, marginal pass, unsatisfactory. Limited feedback was given about shortcomings of answers in the first set.

The written answers were analyzed and coded for types of resources used and how frequently used. A content analysis was performed on answers relating to Internet use including the categories of search methods and critical evaluation criteria employed by the student. Two independent readers read and analyzed all of the answers.

Results

On the first semester exams, 24/25 (96%) students stated the Internet was their most helpful resource. They described it as quick, very accessible and containing a huge amount of information. One student described his experience: “In five seconds, I had more information at my fingertips than I could read in a year. I was so awestruck at the information available that I often used it as my only resource not because I was too lazy to look elsewhere, but because I could not pull myself away from the little icons referring me to other information. I was finally surfing the net, and it seemed to have no limits.”

By the midpoint of the second semester, 23/24 (96%) students still used the Internet but none still felt it was their most useful source. Each had very specific uses for the Internet, but did not use it as a general source to meet all of their information questions. All students applied evaluative criteria to their use of the Internet: “During the first semester I realized I could find almost any point of view ... this aspect made me realize the Web was not always the most reliable source of information. I now consider site quality when assessing Internet information.”

Discussion

The students changed their perceptions of the Internet as well as their uses of it. They started out as typical undergraduate students who surfed the net widely and became quite selective and critical in their Web reading as the year progressed. Some change can be attributed to educational demands placed on graduate students in PBL program. Also the depth of information needed increased over time. Additionally, the usefulness of the Internet varies with discipline studied. During the first semester epidemiology and biostatistics were emphasized. By the midpoint of the second semester the emphasis shifted to the behavioral sciences.

Conclusion

When the students started the MPH program few employed critical evaluation skills in evaluating information obtained from the Internet. By the second semester, the majority of students demonstrated an understanding of evidence-based practice, and applied its principles to their Internet research.

Editor’s Note: *Phyllis Blumberg, Ph.D. and JoAnne Sparks received a Research Section award for Best Research Paper at the 1998 Annual Medical Library Association Meeting for their presentation entitled: “Tracing the Development of Critical Evaluation Skills with the Use of the Internet.”*

*Phyllis and JoAnne have collaborated more than once over the years. Initially they met at Rush University in Chicago where Phyllis directed the Alternative Curriculum, a problem-based program in the Medical School, and JoAnne was Reference Manager in the Library. JoAnne worked with Phyllis and her PBL students to develop a successful case-based approach for teaching online searching skills to medical students. At MCP Hahnemann University JoAnne and Phyllis developed a library and information skills curriculum for the School of Public Health. Their MLA presentation and project described in this issue has also been written up as a formal research article which will be published in a forthcoming issue of the **Bulletin of the Medical Library Association**. For more information, contact Jo Anne at W. W. Hagerty Library of Drexel University, 33rd & Market Sts., Philadelphia, PA 19104-2875 (215-895-2758 or sparks@post.drexel.edu).*

Member News



In November, **ANDREA BALL** switched from being a Reference Librarian at the University of Pittsburgh HSL System to an NLM Library/Informatics Fellow at Oregon Health Sciences University. This is the first year this type of fellowship is being offered, and she’s the first Fellow at OHSU. This is not a post-doctoral fellowship, but rather a program designed for librarians who are interested in medical informatics. For the next year she’ll be taking informatics courses, working on projects, and conducting research. Andrea reports that while she hasn’t made any definite decisions on research topics, she is certainly leaning towards library-based projects (perhaps in the area of consumer/patient health information seeking-behaviors). In the meantime, she’s continuing and expanding her work with Bill Hersh and the CliniWeb project (<http://www.ohsu.edu/clinweb/>). For more information, contact Andrea at 503-494-0534 or balla@ohsu.edu.

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ALEXANDRIA DIMITROFF recently spent four months in Russia as a Fulbright Senior Scholar. She shares some special reflections and insights with her Research Section colleagues:

“My proposal was to teach a semester long course on electronic retrieval. In addition, my sponsors mentioned a short course in health sciences information retrieval. While Fulbright does not currently sponsor research grants to Russia, they do allow for enough discretionary time for scholars to work on research while there. My plan was to look at various automation activities in Russian medical libraries. Mine was a very straightforward proposal and I left in late August assuming I’d be teaching at Moscow State University of Culture one day a week with additional workshop-type courses scheduled throughout the fall.

What I found when I got there was a bit different: my course had not been put on the schedule so I was asked to lecture to students in three different classes (both undergraduate and graduate). In addition, they asked that I spend more time lecturing on Internet access and resources than “online” (I was planning on using CD-ROM databases). So I reworked all of my teaching materials and learned to prepare lectures and exercises week by week. Not only did the library science faculty change topics, but the very schedule changed with little (or no) notice. For example, one day all classes were canceled so that students could attend a political demonstration, but no one bothered to tell me until after I arrived at the university - a one hour commute. This was, to say the least, very frustrating! But working with some wonderful faculty members and some enthusiastic and charming students made up for it.

Russians are going through yet another traumatic change in their country - the economic collapse of last August has had a profound effect on the lives of students and faculty. Wages are late, or not paid at all, their currency is worth less than a third of what it was last summer, and people lose their jobs with no notice (25% of the faculty at the university were fired in late September). Despite these hardships, my students and colleagues continued to meet their responsibilities and commitments.

I planned on surveying medical libraries while there. While teaching had its frustrations, I still managed to get it done. Getting the cooperation I needed to collect survey data from medical librarians was not as successful. In addition to the current “crisis,” Russians have a tendency to be a tad distrustful, especially of foreigners. (This I was told by my Russian sponsor; I generally found all librarians I met to be warm, engaging and extremely interested in hearing about how librarians in the U.S. do their job.)

I attended a conference of administrators from regional state medical libraries, where I was asked to present a talk on technology in U.S. medical libraries. The audience was enthusiastic and had many questions, the number one being “How much do medical librarians in the U.S. earn?” I asked them if they would be willing to complete a brief questionnaire and they enthusiastically said yes. I had the questionnaire translated that evening and distributed it the next day. The response rate was, to say the least disappointing! After a follow-up request during the three-day meeting and the verbal encouragement of the director of the state library (equivalent to NLM), more questionnaires were returned. Not as many as I would have liked, but enough to get at least a snap shot picture of current automation activities in Russian medical libraries. Their number one concern is, not surprisingly, money.

My experience in the Fulbright program was rewarding, both personally and professionally. I would encourage any librarian with an interest in international issues to apply. I was told numerous times by my program officer that not enough LIS proposals are received - it is a very “fundable” area right now. For LIS projects (research, in countries other than Russia, as well as lecturing) a Ph.D. is not required. Many non-LIS professionals are submitting proposals (and some are getting funded!) that should have been submitted by LIS professionals. For example, at the pre-departure orientation in Washington, a history faculty member was picking my brain about what to include in his “Internet Resources for History and Archives” course. If anyone would like to talk to me about how I structured my proposal or any other questions about my experiences in the Fulbright program, please contact me (dimitrof@csd.uwm.edu). While going to a “re-developing” country in the midst of an economic crisis may not be everyone’s idea of fun, it certainly was rewarding and truly an experience of a lifetime.”

In the Fall 1997 issue of *Hypothesis* (Volume 11, number 3, pp 4-7), **JON ELDRIDGE** shared his thoughts on evidence-based librarianship. He has developed those ideas into a continuing education course which will be offered for the first time at the MLA Annual Meeting in Chicago. The course features a seminar format, and was designed with Research Section members’ interests in mind. Participants will focus upon adapting evidence-based medicine and evidence-based health care approaches to the conditions found in health sciences librarianship. Enrollment is limited to a maximum of 30 participants. Jon suggests that background experience or formal training in empirical research methods will probably increase participants’ benefits from taking this CE course. Contact him directly via e-mail jeldredge@salud.unm.edu (subject: EBL CE Course) or phone 505-272-0654 if you have any questions.

GROSS M. The imposed query: implications for library service evaluation. *Ref User Serv Q* 1998 Spr;37(3):290-299.

An imposed query is one which is externally motivated, such as a student doing an assignment or a lab assistant asking a question in behalf of the leader of the lab. Other queries are self-generated, arising from the questioner's own need to know.

Gross maintains that "both service provision and service evaluation have been performed on the assumption that questions are self-generated." Effectiveness of the reference librarian depends on the interchange between questioner and agent before the agent comes to the reference librarian. Also, a librarian is more likely to succeed in answering an imposed query if the question is for concrete information. The librarian's direct knowledge of the imposer is another factor. Agents usually cannot determine if a question has been answered.

User studies may be confused if the user is an agent, as may output measures. An agent may have a different evaluation of relevance than does the person who imposed the question.

Although this is not a research study, per se, it provides food for thought and points to areas for future research.

HARLESS DW, ALLEN FR. Using the contingent valuation method to measure patron benefits of reference desk service in an academic library. *Coll Res Libr* 1999 Jan;60(1):56-69.

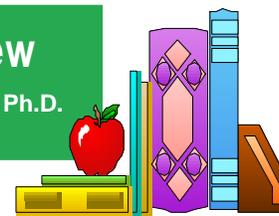
Written by an economist and a librarian, the authors use a technique of environmental economics to estimate the economic value users associate with reference desk service in an academic library. "Use value" indicates the value of services to those who actually use the service. "Option value" is value placed by potential users who have the option of using the services, even if (s)he may never use the service. It is measured by the potential user's maximum willingness to pay for access to the service, without knowing if (s)he will actually use the service.

Contingent valuation involves the construction of a hypothetical market for the good (service) in question. Harless and Allen surveyed, via interview, a random sample of students and faculty at Virginia Commonwealth University. Students were shown a card on which costs for various university services were listed and were asked to indicate on the card how much they would be willing to pay to maintain current reference hours, to increase hours by 18 per week, and to increase hours by 36 per week. Faculty were asked similar questions.

Estimates of the direct costs of providing reference desk service were made. Results are that university faculty and students value current services at 3.5 times the cost. They valued increasing hours by 18 at 4.9 times costs and increasing hours by 36 at 2.6 times the cost.

Literature Review

Prepared by Ruth E. Fenske, Ph.D.



This study presents some interesting ideas about why it might create goodwill among users and potential users to offer services somewhat beyond what is actually used.

BENSMAN SJ, WILDER SJ. Scientific and technical serials holdings optimization in an inefficient market: a LSU serials redesign project exercise. *Libr Resour Techn Serv* 1998 Jul;42(3):147-242.

The purpose of this very long article is to "analyze the structure of the library market for scientific and technical (ST) serials." It is followed by three pages of reflections by the second author, in which he talks about the primary findings and the implications of the findings for library and university administrators faced with coping with rising scientific and technical serials costs.

They sketch out and test a scenario in which faculty in elite university programs publish in a small group of journals published by U.S. associations. Other scientists, in turn, tend to cite the articles of the elite faculty. There is a high correlation between faculty ratings of value and citation rate. Hence, value is concentrated in a small group of journals published by U.S. associations. At the other end of the scale are high cost, commercial journals published in foreign countries, which are considered to be of little value. Few titles appear both in the high value and high cost lists. By cancelling high cost, low value titles, universities can save a great deal of money without harming the quality of the collection.

The authors then demonstrate that 75% of the faculty's perceived value could be met by adding 118 titles and canceling 343, for a net savings of \$140,527. The savings would have been even more had the test library not already done massive cancellations earlier.

This research certainly points to an obvious way for universities whose faculty value the elite core of U.S. association journals to make wise cancellations. Patterns of value may be different in clinical medicine.

WOOD FB, CID VH, SIEGEL ER. Evaluating Internet end-to-end performance. *J Am Med Inform Assoc* 1998 Nov/Dec;5(6):528-545.

The purpose of this practical research study, done by.nlm, was to evaluate performance of the Internet for delivery of biomedical information resources.

Three methods of testing were used. Three hundred forty-seven user tests, with a total of 3733 measurements

see Literature, page 8

were conducted at sixteen locations, including two done at the homes of medical librarians. Times to download front pages of NLM Web sites and to do searches were recorded. There was wide variability in response times. As would be expected, sites with higher bandwidth and faster computers had faster response. The overall problem rate was about 1%.

Technical testing of the Internet path between NLM and five user terminals was conducted by computer. Bulk transfer capacity, round-trip time, network routing, and packet loss were assessed.

The third set of tests looked at Internet paths between NLM and web servers at user locations, using the same measures for testing. Eight sites were successfully tested. Five other sites were partially tested. Six NLM international affiliate sites were also tested. Bulk transfer capacity was clearly a function of time and day of week.

In the discussion and conclusions, the authors point to a need for testing response from the user to NLM, as well from NLM to the user, as they did here. They indicate that their results can be used locally as a basis for comparison and for documentation of local problems. Reducing the size of web pages and the graphic components would reduce response times. Even high bandwidth connections may be slow in peak hours. Building in excess transmission capacity would help minimize delays.

TSAY MY. Library journal use and citation half-life in medical science. *J Am Soc Inform Sci* 1998 Dec;49(14):1283-1292.

The purpose of this study was to look at the relationship between in-house use half-life and citation half-life. Half-life refers to the number of years required to encompass 50% of all uses or 50% of all citations to that title. Use was measured by reshelving counts for six months at the library of the Veterans General Hospital (VGH) in Taipei. VGH does teaching, research, and patient care. Citation half-life was based on ISI's Science Citation Index Journal Citation Reports (JCR). The 835 journals listed in JCR and held by VGH were included in the study.

Initially this study appears to give interesting and useful results, telling us that mean citation half-life is 6.28 years and mean use half-life is 3.28 years. Later the author uses a t-test to show this is a significant difference. Differences for half-lives of clinical, life sciences, combination, and other are presented and there is a special discussion of titles with half-lives of ten years or more.

It is in this latter discussion that the author points out that longer running titles tend to have longer citation half-lives, because a longer time span of material is available to be cited. It also develops that journals whose titles changed are treated as different titles for the purpose of analysis than the former title. Hence, titles no longer published, some not published for many years, are mixed in with those currently published. In my opinion, not controlling for length of publication span and including titles not currently under

subscription, confound the results to the point that any result based on aggregate data is useless. Considering that this study was published in a reputable journal, perhaps I simply am not thinking clearly about the deficiencies I see here.

BARRY CL. Document representations and clues to document relevance. *J Am Soc Inform Sci* 1998 Dec;49(14):1293-1303.

HIGGINS M. Meta-information, (sic) and time: factors in human decision making. *J Am Soc Inform Sci* 1999 Feb;50(2):132-139.

Carol Barry looks at the extent to which various document representations (i.e. descriptive cataloging, notes, abstracts, indexing terms, and full text) contain clues to relevance. Clues to relevance were information content of the retrieved document, reference content (does it have a bibliography or footnotes?), and twenty-one other relevance criteria, including source quality, source reputation/visibility, source novelty, and relationship with author.

Subjects were eighteen faculty and graduate students who were asked to circle any portion of the document representation that prompted a desire to pursue the document and to cross out portions that had the opposite effect. Follow-up interviews were conducted. In addition to area of the document representation marked, remarks about the retrieved document in general (e.g. date, length, format) and remarks about the intellectual source (source traits) of the retrieved document were recorded.

Looking just at source trait results, users tended to use the bibliographic citation to determine the source traits. Knowing the source enabled prediction of content relevance, quality, clarity, and perspective. Ability to make such predictions depended on the user's knowledge.

Margaret Higgins points out that information professionals need to be aware of source credibility in their role as gatekeepers of information. She looks at the effects of source credibility on decision making under both time-constrained and non time-constrained situations. Subjects were upper-level undergraduates in a college of business. The task was to evaluate applicants to graduate school in business. Some had references from well-known universities and some from lesser-known universities. Applicants were presented in pairs. Subjects had to indicate which applicant they would admit and the strength of their preference. The experiment was repeated with decisions made under severe time pressure. The results were that both source and time influenced both the admission decision and the level of preference. Time constraints lessened the effect of source credibility and seemed to cause raters to be less definite about their levels of preference. She speculates that under time constraints raters may have turned to a quick assessment of grades rather than taking the time to evaluate the relative credibility of the references. She suggests further study looking at information professionals' correct and incorrect use of source credibility when evaluating information. Are we appropriately influenced by the name behind the information we acquire and disseminate?