Lab Two

Science and the Popular Media

(Informal write-up)

OBJECTIVES

- Be able to list major challenges of communicating science in the popular media.
- Know how to use basic library research methods for finding environmental science reference materials.
- Be able to describe and critique a major environmental science controversy reported in popular print media.
- Be able to evaluate critically environmental reporting.

KEY CONCEPTS & TERMS

- ✓ Research
- ✓ Peer review

TIME REQUIRED: 1/2 to 1 hour in class, 1 hour in the library or computer lab.

INTRODUCTION

A critical component of environmental science is to identify, locate, and retrieve scientific information—the process of **research.** Research is essential to help you find a topic or narrow down the topic. A critical step to successful research is to identify and evaluate other studies that have been conducted because their results can assist you in formulating a hypothesis and designing an experiment.

Based on your research, you must evaluate the validity of the information source that you plan to use in an academic assignment. Print sources (e.g., books and articles found in the library) traditionally go through an editorial process that involves editors and fact-checkers verifying the information. The most reliable information is from peer-reviewed journals. **Peer review** is a process used for checking and verifying the work performed by one's equals—peers—to ensure that it meets specific academic criteria. However, with the Internet, peer review is still generally not the case except for online versions of peer-reviewed journals. Anyone with a computer and access to the Internet can post information or publish a Web site. Thus, there is no guarantee the information is accurate or true. Therefore, exercise caution and employ skepticism when using information from Web sites to conduct research. However, you should also be cautious with print media. Using a book from 1985 as your primary source for a research paper on the status of global oil production is bound to lead to erroneous conclusions and a poor grade. Or sole reliance

on a book published by the Coal Coalition or Greenpeace for your paper on the future of fossil fuels is likely to skew your conclusions. In both of these examples, these books may serve as appropriate supporting references, but only when combined with more current or neutral-position sources.

For most people, the popular media is the primary source of information on scientific breakthroughs and environmental issues. The media publishes stories that are newsworthy, which is not the same as important. The media also focuses on **frontier science** (results from an undeveloped field of study that are not widely tested or accepted) because such "breakthroughs" make good news stories—they are newsworthy. Although newspapers and TV may be valuable sources of information, news stories can generate confusion by using bureaucratic terminology unfamiliar to the public, by introducing biases, and often by flagrantly appealing to the reader's emotions rather than his or her intelligence. Moreover, newspaper reporters and editors (known as communication gatekeepers) generally are not trained scientists, but journalists, which can affect their ability to distill and report science accurately.

Environmental issues tend to be emotionally charged because they can influence human or animal health and welfare and can have significant economic impacts. Controversy makes interesting reading—it may be profitable to inflate or focus on the extremes as a way to charge an issue and make controversies seem greater than they are. Journalists may also give both sides of an issue equal weight even if they do not have equal evidence. Consumers of public information need to be critical thinkers. This is especially true when the basic science is so young (try looking for Environmental Science as a term in 19th century literature).

The purpose of this lab is to evaluate the role that the popular media plays in presenting environmental information and in promoting environmental awareness. Specifically, we will focus on the positive and negative contributions of popular print media.

MATERIALS

No special materials are needed for this lab.

TASKS

- As a class, you will generate a list of current and recent environmental controversies.
- Individually, you will select one of the controversies to research in the popular media by finding two newspaper articles (at least one has to be a local/regional newspaper and the other a national newspaper—the Wall Street Journal, New York Times, Los Angeles Times, Washington Post, USA Today, etc.) and two news magazine articles (e.g., Newsweek, Time, U.S. News & World Report). Find print versions of the articles; if you obtain them from Web sites, be sure that you have access to whatever photographs, figures, and tables were in the original story because they are important components.
- Evaluate the positive and negative contributions of the media coverage. Focus on the media's ability to impart the information necessary for the public to make properly informed decisions on environmental issues. Be sure to assess the ultimate source of the information, recognizing that the information may be biased because of vested (biased) or emotional interests. Your ability to evaluate information is a key to completely understanding environmental concerns.
- Submit a typed report that answers the following questions. Be sure to turn in copies of the articles or supply the links to the articles online.

QUESTIONS

1. What is your topic?

For each article:

2. What are the titles of your four articles? (Be sure to provide the complete and proper citations. See Part I for proper citation format or use one recommended by your instructor.)
3. What are the qualifications and expertise of each reporter? Just use the article to answer this without doing any independent research on the Internet. Did you infer this or was it stated in the article or byline (as in J. Smith has an M.S. in molecular biology)?
4. What are the qualifications/expertise of the expert opinions/sources cited or quoted (do this for each person or organization)?
5. Summarize and discuss the manner and degree to which vested interests (e.g., economics, jobs, health) or emotional interests are discussed in *each* article.
6. Discuss the use of photographs, tables, figures, and other graphics. Were they accurate or do they seem to distort information? What was the source? Did they support the thesis of the article?
7. Could you tell the writers' attitudes toward the issue? How?
8. Did the articles in any way change your perception of the issue? Why or why not?
9. What changes would you recommend to these articles to improve the communication of scientific information?

Overall

10. What do you think is needed for the public to have a better understanding of this issue? How can we use good communication to help people take more responsibility for their own understanding of this issue?