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WHAT'S UP, DOC?

Approaching Medicine as a Cultural Institution in the Technical Communication Classroom by Studying the Discourses of Standard and Alternative Cancer Treatments

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INTRODUCTION

Scientific and technical communication has, over the past few years, been witness to a call for research more culturally informed (see, for example, Longo 1998 and Herndl 1993b). This type of research takes into account—and indeed regards as primary—the notion that science is, more than anything else, a powerful cultural institution that has profound and real effects on individuals. Indeed, Herndl (1993a), for one, states that “cultural studies assumes that no undertaking, including science, is autonomous and that any discourse is inherently ideological.” Discussing a branch of biology as a specific example of a scientific cultural institution, he adds, “cultural critics might ask how evolutionary biology participates in the whole political and social process of organizing life and legitimizing knowledge and power” (66). In addition, this research recognizes the cultural institution of science operates discursively, thus complicating largely service course-oriented notions of scientific and technical communication as being driven by documents and Web sites analyzed or produced in isolation. Because culturally informed research recognizes texts as a manifestation of cultural institutions and because we as scientific and technical communicators are by and large keenly aware of this connection, we are both well qualified and well positioned to study the discourse of science and to use those analyses to comment on how science functions in the society at large. In fact, we are even ethically obligated to do so, given that science has such a significant impact on our lives and those of students.

Although some attention has been given to the need for and conduct of culturally informed research in institutions and organizations in

which scientific and technical communication takes place, less work has been done on its pedagogical counterpart.¹ However, although she discusses research methodology rather than pedagogy, Longo (1998) has provided some insight into how such a pedagogy might be modeled: she states that researchers in technical communication need to use cultural studies research strategies “to illuminate technical writing issues . . . such as effects of institutional relationships and expanded notions of culture . . . as well as the cultural power of knowledge” (54). For us as instructors of technical and scientific communication to fulfill our missions of highlighting the importance and the effects of scientific discourse and teaching students how to analyze and produce this discourse effectively, we must use ideas such as Herndl’s and Longo’s and develop innovative pedagogies to ensure that students understand that science is—like education, government, religion, the market, and the media, as our colleagues who teach in first-year writing programs have shown us—a cultural construct that impacts students (and us) significantly and repeatedly. Science reflects and reinforces cultural biases, and it operates on the basis of negotiation and persuasion within specific ideological contexts. Students need to understand the wherefore and the why of these biases and contexts so that they can work with and within them as informed participants, be that as professional scientific and technical communicators or as private citizens. Armed with such an understanding, it is my hope that students can *read* science-related texts with a clearer awareness of what is going on between the lines, figures, tables, and other elements and *produce* science-related texts that stand an improved likelihood of accomplishing their rhetorical objectives.

In this chapter, I demonstrate how the discourse of medicine, a branch of the cultural institution of science that not only profoundly shapes individual consciousness but also may soon, as a result of the Human Genome Project, actually *create* it as well, can be used in introductory scientific and technical communication classes, as well as medical writing courses, to help students understand that the cultural institution of medicine operates with specific (but not necessarily always consistent) economic, political, and social agendas that help to form all our subjectivities. I accomplish this by first demonstrating how I would attempt to convince students that medicine is a cultural institution that operates discursively and that has an impact on identity. I then explain how I have asked my undergraduate students, using a set of four questions

I derived from work in cultural studies and in rhetoric and technical communication, to characterize the cultural institution of medicine as a result of their interaction with discourses on standard and alternative cancer treatments. My goal in this research was to determine whether the characterizations differ on the basis of the type of discourse that the students engaged and, if so, why these differences occurred.²

Whether a difference appears or not, the more complex understanding of medicine that results from the awareness gained by comparing standard and alternative cancer discourses will, I believe, enable students to take more ownership of their health and that of others close to them, to stand a better chance of succeeding professionally as writers, editors, and designers because they understand more broadly the purpose and potential implications of their work and to effect meaningful change in the cultural institution of medicine as a whole by, for example, critiquing and improving existing genres and suggesting and developing new ones when the rhetorical situation demands it. Whether producing or analyzing texts, the ability to engage medicine more meaningfully at both a personal and an institutional level as a result of cultural-context awareness would, in turn, make possible the ability to engage the broader institution of science more successfully (for instance, to ask questions such as “Who paid for this research?” and “Who benefits from its conclusions?”). Indeed, in our life experience, many profound legislative, judicial, and corporate decisions are made on the basis of scientific research, ranging from gauging the effectiveness of college entrance exams such as the SAT to diagnosing a child with attention deficit disorder. Because Western culture is so utterly dependent on science, students must possess a critical consciousness of these institutions to participate fully in the workings of society.

SHOW ME THE THEORY: CONVINCING STUDENTS THAT MEDICINE OPERATES AS A DISCURSIVELY GOVERNED CULTURAL INSTITUTION

Medical discourse affects students directly. College students are often asked, in the form of surveys, about health concerns considered important to them: alcohol and drug use, physical health, psychological health, and sexual attitudes (Sax 1997). In addition, college health centers and wellness programs use the Web extensively to provide health-related information and promote prevention practices (see Fulop and Varzandeh 1996, for example). That medicine is a powerful cultural

institution there can be little doubt, and I would try to persuade students to agree by introducing some cultural studies terms and figures as follows. By cultural institution, I mean that medicine can be understood, for example, as an Althusserian ideological state apparatus. Althusser (1971) defines such entities as “a certain number of realities which present themselves to the immediate observer in the form of distinct and specialized institutions” (143). Althusser does not include medicine in his list of ideological state apparatuses, but it certainly meets the criteria he establishes for them. Indeed, medicine produces a product—health—and, simultaneously, reproduces the means and conditions of its production (128), in that, even as it finds a cure or treatment for some condition or disease, another previously unknown ailment has likely been identified to challenge researchers and clinicians anew.³

As do all cultural institutions, medicine affects individuals (see Berlin 1996 and George and Shoos 1992 for a discussion about how, by way of signifying practices,⁴ cultural institutions such as media and the market achieve this impact). That is, it significantly influences subjectivity, and, of course, in the classroom I would emphasize student subjectivity. Perhaps no better way can be found to demonstrate this subjectivity than by briefly examining with students the Human Genome Project, which is the largest scientific undertaking of our time. Similar to those who worked on the development of the atomic bomb in the 1940s and early 1950s or on the Apollo missions of the 1960s, scientists working on the Human Genome Project often see themselves as part of a grand, noble endeavor that will inalterably change the way people understand science and medicine. Myers (1990) has demonstrated how the gene has become a cultural icon that people look to as a source of, among other things, individual identity. Because icons can be understood as “a sign in which there is a relationship of resemblance between signifier and signified” (Myers 53), one can argue that we are reaching the point in Western society in which we are defined by our DNA (see such recent films as *Gattaca*—a film relatively popular with students, I’ve found—for examples of how this idea plays out in popular culture). DNA dictates physical characteristics, such as hair and eye color and genetic susceptibility to disease, and may, according to some, substantially contribute to personality traits as well. Thus, the ability to manipulate DNA at will has the potential to profoundly shape and even create identity, starting with selecting a gender and moving on from there.

In addition to impacting individuals directly, cultural institutions operate discursively, and the cultural institution of medicine is no exception. Within technical and scientific communication, Lutz and Fuller (1998) have focused specifically on the discursive operations of the cultural institutions of "orthodox" and alternative medicine; they explore how the discourses of alternative and complementary medicine work "through language to gain credibility against, through, and around" the more stable and entrenched institution of orthodox medicine. I would introduce students to these two distinct institutions of medicine. On a more practical level, I would also share with students research such as Koski's (1997), which states that between twenty-five and forty percent of the stories in daily newspapers are health-related. Of even greater importance for students, of course, is the Internet, which is replete with health-related sites. Even in 1997, the popular search engine site Yahoo! listed some 15,000 health-related sites; as of May 2002, that number had risen to over 21,500.

I would ask students to consider that medical information is often couched in scientific terms and is thus able to "partake of the cultural power residing in scientific knowledge" (Longo 1998, 59). Indeed, even Foucault (1977b) contends, "'Truth' is centered on the form of scientific discourse and the institutions which produce it" (73). Because it is often obtained during a time of crisis, many people want to believe that the medical information they procure is true and reliable; when this information is presented within a scientific context, it is more likely not to be questioned critically. Such trust can create problems that can be illustrated for students. The authority with which medical information is vested contributed a great deal, for example, to the ongoing controversy over mammography, which pits a National Cancer Institute-sponsored panel of oncologists against radiologists in a bitter dispute over the necessity of mammography for women in their forties. Essentially, the oncologists found that there was no proven long-term survival benefit gained by mammography screenings of women between the ages of forty and fifty. In fact, the oncologists added that an annual mammography for these women may actually have drawbacks.⁵ The oncologists recommended that women begin mammography at age fifty. The radiologists, who, it must be pointed out, benefited significantly from providing annual mammography to women forty years of age and over, fiercely contested this conclusion and pointed to their studies, which

demonstrated that women who started annual mammography screenings at age forty were much more likely to detect cancer early, when it is most treatable. Especially exasperating to followers of this controversy was the fact that both of the groups involved in the mammography controversy had mountains of “scientific” evidence to back up their claims. I would ask students whom they would believe. Indeed, many people did not have a legitimate mechanism to evaluate the competing conclusions. As a result, many women—not to mention their physicians—were unsure whom to believe: these competing discourses had the all-too-real effect of causing confusion and anxiety over an extremely important and personal medical decision.

AN APPLICATION: STANDARD AND ALTERNATIVE CANCER DISCOURSES

I asked students in my undergraduate, 200-level technical and scientific editing course, who major in technical and scientific communication, English, speech communication, media arts and design, or chemistry, to examine discourses representative of standard and alternative or complementary cancer treatments as part of a discussion of editing Web sites for development of ethos. I consider discourse about a standard cancer treatment to be representative of the cultural institution of Western medicine, while I consider discourse about a nontraditional (at least from a Western perspective) cancer treatment to be representative of the cultural institution of alternative and complementary medicine.⁶ For an example of standard cancer treatment, I chose Web-based lung cancer treatment information provided via the National Cancer Institute’s (NCI’s) CancerNet.⁷ Part of the federally funded National Institutes of Health in Bethesda, Maryland, the NCI is regarded as the world leader in conducting and supporting cancer research, treating cancer, and supplying information about cancer to patients, their families, the general public, and health professionals. This lung cancer treatment information on the NCI Web site displays characteristics typical of traditional Western medical discourse: it is written in third-person passive voice, it is presented as factual, and no narrative is used. Instead, focus is on the “disease” or “cancer cells.”

As an example of the discourse of alternative cancer treatment, I chose a Web site⁸ that advertised and advocated the use of Tian Xian liquid, developed in China by Wang Zhen Guo, for the treatment of lung cancer. I consider the discourse of this Web site to be “alternative” or

“complementary” because it is an “intervention not taught widely in U.S. medical schools or generally available in U.S. hospitals” (Eisenberg quoted in Lutz and Fuller 1998). In addition, the site contains—and in fact highlights—elements not characteristic of traditional Western medical discourse, such as testimonials and an award gallery. The Tian Xian liquid itself is described as “an alternative dietary food supplement to help destroy, control and inhibit Cancer by strengthening the body’s immune system”; the liquid consists of essences of roots and stems of various herbs and plants such as ginseng (see <http://www.tianxian.com/english/ingredients.shtml>).

I chose cancer because it is an especially well-known condition, or set of conditions, that receives a great deal of public support in the form of, for example, tax dollars. (Indeed, for fiscal year 2001, NCI has asked for \$3.5 billion [<http://www.nci.nih.gov/legis/fy2001.html>].) Although comparatively few children or adolescents are stricken with cancer, many students know of an older relative or family friend who has battled the disease. In addition to (or perhaps because of) its being widespread, I chose cancer because a large number of alternative and complementary therapies are practiced to treat the disease. A great deal of information on alternative and complementary treatments is readily available; one large-scale study found that nine percent of cancer patients use these therapies instead of or in addition to conventional treatments (Lerner and Kennedy 1992). These therapies have received widespread attention and mixed reviews; although treatments such as laetrile have generally been dismissed by the mainstream medical community, a 1997 National Institutes of Health consensus conference endorsed the use of acupuncture to treat side effects of chemotherapy (see <http://cancernet.nci.nih.gov/>).

I chose Web sites rather than print sources for two reasons: first, students are, of course, much more likely to use the Web for research than they are to use print sources. Second, and less obvious, I think that it is oftentimes easier to gain information about the organizational context in which the information is presented (and hence answer the questions more completely) from a Web site than from a print source. For example, a student looking at the NCI site on the treatment of non-small cell lung cancer can easily move to other screens that contain information about the National Cancer Institute; however, a print copy of the same information obtained via the NCI’s CancerFax service allows no such opportunity.

I developed a set of four questions to ask students about each Web site. These questions grow out of (a) composition-based work in cultural studies, such as that by Berlin (1996), and (b) work that ties together rhetoric and technical and scientific communication, such as that by Ornatowski (1997) and Halloran (1978). The questions (discussed elsewhere in more detail) are based on the following cultural-studies premises:

- Institutions, operating discursively, impact individual consciousness and action significantly
- Individuals, in their daily lives, attempt to make sense of multiple and competing discourses produced by these institutions.
- Individuals ascribe a level of credibility to the institutions on the basis of the perceived quality of the discourses and on the basis of previous experience with such institutions, if any.

The basic premise that links cultural studies with rhetoric—and, in this case, the rhetoric of medical discourse—is that cultural institutions operate discursively; thus, rhetoric plays an unmistakably critical role in the advancement of these institutions. Ornatowski (1997), in his chapter, “Technical Communication and Rhetoric,” explains that the discourses of science and technology are often used for, among other things, the following purposes:

- To coordinate the activities of groups and individuals
- To promote the progression of institutional tasks
- To control activities
- To monitor output
- To make an individual’s work advance the established objectives of an institution

I read these purposes as typical of those of any cultural institution’s discourse; indeed, they can be understood to correspond to Foucault’s (1977a) description in *The Order of Discourse* of the ways discourse is controlled. In this work, Foucault says that control of discourse is achieved by, among other things, the limitation of discourse by disciplines. Disciplinary discourse, says Foucault, must “address itself to a determinate plane of objects” and “be able to be inscribed on a certain theoretical horizon” to be considered “in the true” (1160). Discourse that does not meet these criteria is excluded from the discipline. The correspondence between Foucault’s description and Ornatowski’s five purposes then

plays out like this: the persons in power who control the content and flow of discourse in disciplines (which are, in the case of science and technology, cultural institutions) in turn use this discourse to perform Ornatowski's purposes. All five of these purposes are innately tied to the maintenance and, perhaps, expansion of cultural institutions through discourse, and they have the potential to affect individuals.

The four questions, which I piloted with students from two other courses,⁹ are as follows:

1. Which of the sites do you find to be more credible?
2. What specific features of the sites (rhetorical features such as textual and visual content, document design, and use of persuasive appeals) contribute to your conclusion?
3. What other experiences can you draw on from your life experiences that help you reach this conclusion?
4. What would you do to the sites as a Web editor to boost their credibility?

I sent students the questions and the URLs for the two sites in an email message and asked them to respond in kind.

RESPONSES FROM STUDENTS

Responses from students were revealing and centered primarily on issues of credibility. Credibility was, for the students, inextricably intertwined first with what they perceived as the mission of the two Web sites. Students stressed that the NCI Web site provided information, while the Tian Xian Web site tried to sell a product. (Indeed, one of the students characterized the difference as an audience issue, saying that the NCI site was targeted at "information gatherers," while the Tian Xian site was targeted at "somewhat superstitious people.") The perceived marketing mission of the Tian Xian site immediately caused many students to react negatively to the site; several students mentioned that the ".gov" extension associated with the NCI site URL gave it more credibility than the ".com" extension of the Tian Xian site URL. "The Tian Xian Liquid Web site," stated one student, "is provided by Green and Gold International Exports, which indicates that their interest is in solely making a profit." Another said that the Tian Xian site is "a commercialization for the fears of cancer victims, and may be nothing more than a pyramid sales scheme for a product." Similarly, one student claimed that Tian Xian was simply "an impulse buy for Web surfers" and that he was "suspicious" of the product.

Credibility was also tied closely to content. One student stated that she preferred the NCI site because it contained no shopping cart, as did the Tian Xian site, while another stated that she was impressed by the “skillful use of medical language” on the NCI site. The first student went on to say that he was “skeptical of anything [he sees] on a commercial site, because [he knows] that information such as statistics will get skewed in order to better influence customers.” Several students stated that the NCI site is more comprehensive because it contained information on cancer in different parts of the body, and they pointed out that contact information, complete with a toll-free telephone number, is provided as well. In addition, although some students found the Tian Xian text easier to understand than the NCI text, the fact that the NCI site contained a dictionary of terms tended to boost its credibility. Visually, some students complained that the Tian Xian site contained too many pictures and that many of these pictures were of poor quality. The proportion of pictures to text was apparently too high for several students and detracted from the ethos of the site; one said that the pictures were distracting.

The content of the two sites contributed directly to their tone. One student focused specifically on this issue, saying that the NCI site “is kind of reserved, like a wise old person, not shouting in your face [as the Tian Xian site does]. . . . The NCI page looks like . . . an encyclopedia page.” Several other students maintained that the NCI Web site was much more balanced in tone—presenting both positives and negatives of various treatments—than the Tian Xian Web site, which was described as “cheesy,” as looking similar to a “talk show,” and not listing “side effects.” The NCI site did receive its share of criticism, though, being characterized in tone as “choppy, clinical, and dull” and as “morbid.”

With regard to credibility, students also commented frequently on the perceived trustworthiness of the sources of information contained in the Web sites. For example, the information in the NCI Web site came from “reliable sources that go through a rigorous process of drug testing,” said one student. Another insisted that the NCI site “had a lot of good information that was supported by medical proof.” Although there was a section of the Tian Xian Web site called “Lab Test Results” that listed several Western-style scientific studies, complete with graphs, tables, and references, many students insisted that the products advertised on the Tian Xian Web site needed to undergo “legitimate” scientific testing and

peer review in the U.S. and have results published by an American medical journal. The mechanism by which the Tian Xian products act, they said, needs to be identified, clinical trials need to be conducted, and confounding variables need to be identified. Students objected to the narratives (“Testimonials”) on the Tian Xian site, which they saw as the main source of evidence used by the company for the efficacy of the Tian Xian liquid. “Instead of providing facts and figures to support the [Tian Xian] drug,” one student said, “they gave emotional ‘success’ stories.” Another stated that “Under the testimonials for lung cancer, there are 9 stories of success, a small number to base an effective treatment on.” A second student called the Tian Xian liquid a “miracle elixir” with no proof, and a third complained that the ingredients were not listed (in fact they were). “Factual errors” were also noted: one student pointed out that the Tian Xian site contained the phrase “genes entering cells”—a scientific impossibility because genes are present within cells. This same student, however, noted that translation problems (the Tian Xian site is available in six languages) might have contributed to this mistake. Finally, a student dismissed positive reviews of the Tian Xian liquid reprinted on the site, saying that the newspapers involved—*Manila Bulletin* and the *Philippine Daily Inquirer*—sound “similar to the *National Inquirer*,” while another commented that awards given to the manufacturers of Tian Xian and listed on the site were from “non-nationally recognized organizations.”

In terms of authorship and credibility, the students appeared to take the authority of the NCI Web site (and studies listed therein) authors for granted. They attributed a great deal of credibility to the sponsorship of the U.S. government for the NCI Web site, saying that the government has access to knowledge and financial resources that the Tian Xian manufacturers did not. Indeed, the NCI Web site designers also ensured that users would get this thought in their minds by placing a banner reading “Credible. Current. Comprehensive.” across the top of the CancerNet splash page. The Tian Xian Web site did not fare as well. Several students noted that one author (and the only author affiliated with an American institution) on some of the studies listed on the Tian Xian Web site was a professor at Capital University in Washington, D.C.; these students claimed to have never heard of this institution. (Given that a large percentage of students at the institution at which I teach are from the Washington metropolitan area, I would expect that some of them would know it.)

Other authors listed were affiliated with a Taipei, Taiwan-based institution; this fact did not seem to make the Tian Xian site any more credible for the students.

Not all the news was positive for the NCI site, however. It was faulted for being too “texty” and “looking like a hospital.” Another student complained that the site was “lackluster” and “monotonous.” And, ironically, the same student who lamented the lack of facts and figures in the Tian Xian site previously described faulted the NCI site for being too impersonal, saying that “I don’t think they showed any pictures of people or told any personal stories.” Another student shared an aesthetic concern, stating that the site should “use more colors besides blue and white.” Finally, one student found the NCI site difficult to get around because of its sheer size and scope.

Perhaps the most surprising aspect of students’ reactions to the Web sites was the notion that if they were faced with terminal cancer, the students indicated that they wouldn’t hesitate to try the Tian Xian liquid if conventional treatments failed. “If I’m desperate,” concluded one student in response to question 3, “this might be something that I would want to try.” It seems, perhaps, that entrenched cultural codes can be dismissed more easily if one faces an imminent risk of death.

DISCUSSION AND CONCLUSIONS

Students’ respective reactions to the NCI and Tian Xian Web sites reflect a thoroughly entrenched, culturally implemented and maintained belief in Westernized scientific and medical practices. In terms of science, the students are—as am I—especially cognizant and supportive of rigorous testing, large sample sizes, peer review and publication, and reproducibility. The vast majority of students accept and embrace the compartmentalized approach of Western medicine, finding that, for example, the NCI site is more credible because types of cancer corresponding to different parts of the body were much easier to find there.

I used students’ responses to prompt class discussion in an attempt to illustrate culturally associated assumptions and contradictions that arose in the responses. For example, no student observed that the treatments discussed in the NCI Web site also cost money—much more money than the Tian Xian products—but that these treatments often may be paid for (that is, recognized by) Western insurance companies. I asked students to consider whether making money in the form of federal budget

allocations was important to the National Cancer Institute, to ponder whether or not the makers of Tian Xian were interested in helping people, and to think about the similarities and differences between Tian Xian and Western pharmaceutical companies.

Also in the ensuing discussion, students repeatedly reinforced the sense of credibility they gained from the text of the NCI site. Given the extent to which Western society has become a visually based rather than a text-based culture—at least if we are to believe what we are being told—I was struck by how much students praised the voluminous, often fairly technical, and dense NCI text and criticized the perceived large number of visuals in and the colorful design of the Tian Xian site. One student's written response to question 2, which I used to start this part of the discussion, typifies this belief. According to this student, "The site by the National Cancer Institute looks more professional. There is a lot of text, virtually no visuals. . . . The Tian Xian site looks like the center for the next Olympics. The visuals do not go with the seriousness of cancer. It has too many colors and not enough info./text." On the basis of this comment, it appears that we have a ways to go before a primarily visual, colorful design is accorded the same level of respect given to old-fashioned, boring, black and white text when both are associated with scientific and technical content. In addition, our entreaties as technical and scientific communication instructors for brevity and lack of jargon as characteristics of effective, respected discourse do not seem to be having their desired effect as yet.

Although the discussions with students were intriguing and illuminating, I cannot, of course, claim that students can dismiss thoroughly entrenched cultural codes associated with powerful cultural institutions simply as a result of comparing two medical Web sites and then discussing assumptions underlying their conclusions about these sites; nor should students be expected to subsequently dismiss their beliefs even if they are recognized as being culturally constructed. However, by approaching medicine (as well as science and technology more broadly) as a discursively operating cultural institution in a technical and scientific communication course, students can begin to gain the necessary critical tools to demystify and make sense of the myriad claims and counterclaims inherently a part of these discourses and to begin to understand how the discourses affect them individually. Because health is such a vital part of an individual's subjectivity, it is especially important that students

understand the contexts in which the discourses associated with the cultural institution of medicine are produced, especially, for example, in terms of who stands to gain what with respect to political or economic power, of recognizing that results of medical research can often be interpreted in different ways, and of realizing that for every voice heard, there are many other voices that are not.

Additionally, students will write, edit, and design more effectively if they know something about the cultural baggage that discourse—no matter what cultural institution it is a part of—always and already carries. In this particular study, attention to medicine as a cultural artifact does not detract from my goal of teaching students to produce effective, rhetorically successful medical discourse. Indeed, a better understanding of the rhetorical situations of which these discursive events are a part most likely increases the chances for students composing discourse that achieves its desired results. This realization also helps students to predict the ethical implications of their writing, an area that Hartung (1998) has pointed out as seriously lacking in our pedagogy. As a result, they can understand more clearly the mechanisms by which they are influenced and, in turn, gain a more complex understanding of and critical appreciation for the medical discourse.

In this study, students were able to recognize assumptions about Western science and its manifestation as a cultural institution by contrasting an example of Western scientific discourse with its counterpart from a different cultural context. Such a contrast invites a relatively rapid and invigorating response. An intriguing and challenging follow-up to such an assignment would be to ask students to then focus on a piece of Western scientific discourse on its own, without the benefit of contrast to help sharpen the assumptions, to determine if the critical skills they gained via the National Cancer Institute/Tian Xian comparison can still be applied. For example, the instructor could ask students to find some relevant Western research that relates to a health issue that they, a family member, or friend is facing and to develop a series of critical questions not explicitly addressed or answered in the research.