



## The CSI effect on writing instruction

by T.R. Girill ([trg@ltnl.gov](mailto:trg@ltnl.gov))

In a recent article, Geoff Hart (Hart 2006) pointed out how much televised fictional "crime scene investigation" (CSI) influences real life, with consequences such as raising the amount of "scientific evidence" that criminal juries now expect prosecutors to present. This "CSI effect" shapes pre-college education too, where many high-school students imagine themselves pursuing CSI or other forensic science (FS) careers, and increasingly, introductory or even advanced biology classes are framed as "forensic science" to boost enrollment and participation (e.g., Ody 2005).

Less obvious (but more important for us) is the strong link between real FS/CSI and effective technical communication. As FS/CSI spreads, the need for good technical writing (and speaking) spreads with it. For high-school students struggling with inadequate basic literacy skills, this hidden FS/CSI connection offers an innovative path to writing improvement.

### True crime writing

In real life, effective nonfiction communication is crucial for adequate FS/CSI practice. Police officers and medical investigators alike repeatedly face the challenge of writing (and speaking) well for their colleagues, their clients, and even for themselves. The challenges include:

**Notes:** CSI textbooks routinely advise police trainees about the importance of developing a thorough and reliable system for recording their own field notes (e.g., Lyman 2005, pp. 33-40). Organized, meaningful notes may be the only way to preserve key crime-scene observations as well as comments gathered from victims, witnesses, and suspects. Likewise, physicians or nurses assessing torture or abuse allegations, especially as international monitors in civil or other wars, must generate rich and revealing notes. Whole professional articles (e.g., Peterson

"In real life, effective nonfiction communication is crucial for adequate [forensic and crime scene investigation] practice."

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2002) coach medical staff on how best to describe their own clinical findings on the history, distribution, shape, and color of lesions, for example.

**Talks:** Besides giving informal verbal explanations to colleagues, supervisors, and attorneys, FS/CSI professionals may qualify as expert witnesses in judicial proceedings. The web site of the American Academy of Forensic Sciences ([http://aafs.org/default.asp?section\\_id=resources&page\\_id=choosing\\_a\\_career](http://aafs.org/default.asp?section_id=resources&page_id=choosing_a_career)) points out that "the forensic scientist often spends long hours testifying clearly and concisely... concerning scientific information and what it means. Throughout he must maintain a posture of impartial professionalism."

**Reports:** Their reports are often the most far-reaching, enduring way in which investigators influence other parts of the elaborate FS/CSI system. The U.S. Federal Bureau of Investigation, a big consumer of other people's forensic reports, even contributed the reports chapter included in the official procedures manual for Arkansas county coroners. This chapter explains that "no investigation regardless of how competently executed is complete unless accurately reported... your case is never better than your report" (AAC 2004, p. 40). Reports also capture and share crucial information in non-criminal situations. The U.S. Centers for Disease

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## Editorial: Putting the passion back in science

by Geoff Hart  
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If you had to choose one word to describe science, it would probably be *dispassionate*—that is, the opposite of *subjective, emotional, illogical, imaginative, exciting...* indeed, the opposite of *passionate*. Such beliefs become deeply embedded in a culture, and you can see this in the popular images that have become part of a culture's collective consciousness. For example, if you think of the portrayal of scientists on television, you'll immediately think of *Star Trek's* Mr. Spock from the 1960s and his spiritual sister of the 1990s, Dana Sculley of the *X-Files*. One doesn't think of poets and artists and impassioned lovers.

Like any other stereotype, this one contains both truth and myth. It's certainly true that the careful, methodical, objective approach that sets science apart from most other human endeavors would be impeded by subjectivity, unconstrained emotion, illogic, unrestrained imagination, and the excitement that leads to each of these mental states. Yet these states are essential parts of human nature, and though most humans can attain the scientist's dispassionate state of mind at certain times and for a limited duration, it's not our natural state. Failing to recognize this can have serious consequences.

For example, separatists in Quebec who were striving to attain sovereignty from Canada nearly won their 1995 referendum—a vote among all registered voters to determine whether the province should secede from Canada—in large part because the federalists relied excessively on cold, hard logic—the economics of belonging to Canada, among other things. In contrast, the separatists took great advantage of the emotional side of the argument, recognizing that humans are not swayed by logic alone. For my American colleagues, the comparable situation might well be Gore's election loss to Bush; the clearly more intelligent candidate lost, in large part, because he was perceived as having all the charm of a block

of wood. People do want *smart* leaders, but they also want *human* leaders.

Of course, politics is about as far from science as one can imagine—the phrase *political science* is an oxymoron—so it's hardly surprising that an emotional argument trumps logic in this field. But the political example reveals the larger point: that by relying solely on logic, scientists do themselves a tremendous disservice. For those of us who are astonished and enchanted by the photos NASA sends back from Mars, it's hard to understand why a faded, washed-out band of dull orange-brown pebbles and sand is mind-numbingly boring to most viewers. It's that lack of understanding that undermines most attempts by scientists to communicate with the public. Imagine, for example, if NASA had landed its Mars probes on the slopes of Olympus Mons ([http://en.wikipedia.org/wiki/Olympus\\_Mons](http://en.wikipedia.org/wiki/Olympus_Mons)), a volcano the size of Arizona, or the Valles Marineris

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Control and Prevention, for instance, promote the use of a standard, 6-page, heavily scaffolded report form for all investigators of “sudden unexplained infant death” (SUID). Only exceptionally careful, consistent, and revealing reports enable reliable subsequent epidemiological studies of possible SUID causes (CDC 1996).

### **The classroom connection**

Since crime scene investigation (like all forensic science) really requires good technical communication, enriching FS/CSI-themed high-school classes with authentic technical writing is easy. For example:

- Guidelines or checklists for students that make text-design techniques explicit mimic similar guidelines used by FS/CSI professionals in the field.
- Instructions are vital for sharing reliable forensic procedures. For instance, try the steps for extracting DNA from cheek cells that are commonly taught in biology classes.
- Descriptions of crime scenes clearly parallel those for student science projects, on a scale that ranges from one period to a full semester.
- Technical talks to classmates pose the same design challenges as does expert forensic testimony.

Some commercial CSI vendors recognize these educational possibilities. Thus, Court TV caps their middle-school crime-scene package with an “investigative report” template (Court TV 2006, p. 62) for student use. A logo is included, but otherwise it’s just a blank page.

Unfortunately, even students convinced that effective writing is crucial for FS/CSI may still be unable to do the writing or reluctant to even try. Filling that blank report template is a daunting, perhaps hopeless, task for ESL students or others who lack the underlying text-drafting skills to approach the problem incrementally.

### **Enhancing the connection**

In response, we can go one step beyond the general cognitive-apprenticeship approach to technical writing that is often used for literacy outreach. We can add overt FS/CSI cues,

prompts, and terms to the skill-building framework itself. Explicit FS/CSI-themed teaching aids can:

- more strongly motivate reluctant or unimaginative students to try specific writing techniques,
- offer unusual but legitimate examples that students can gradually generalize, and
- vividly connect seemingly artificial school activities (such as taking notes) to job-critical skills for FS/CSI careers (and for many others as well, of course).

“We can go one step beyond the general cognitive-apprenticeship approach to technical writing that is often used for literacy outreach. We can add overt FS/CSI cues, prompts, and terms to the skill-building framework itself.”

The note, talk, and report references discussed above suggest many ways to develop instructional aids for struggling student writers based on FS/CSI. You can see one implementation of this strategy freely shared with teachers at the Technical Literacy Web suite of the East Bay Chapter of STC ([www.ebstc.org/TechLit/TL\\_Front.html](http://www.ebstc.org/TechLit/TL_Front.html)), where the introduction partly overlaps this article.

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“A mature person is one who does not think only in absolutes, who is able to be objective even when deeply stirred emotionally, who has learned that there is both good and bad in all people and in all things, and who walks humbly and deals charitably with the circumstances of life, knowing that in this world no one is all knowing and therefore all of us need both love and charity.”

—Eleanor Roosevelt, diplomat and writer (1884–1962)

“When you see something you don’t know whether to believe or not, you should flap your arms like wings. If you seem then to be flying, it’s a dream.”—John Leonard, paraphrasing Paul Krassner in a *Harper’s* article

“One of the neat things about successful scientists is that a lot of them still have a childlike quality that allows them to blurt out questions that a lot of people are thinking but would never blurt out, so they would never get the answer.”—Michael Hawley

“... the only rule that I have found to hold up through a lifetime of science, education, and public debate: There is no solution. Seek it lovingly.”

—George W. Thomson, *The Brocken Specter, Acceptable Compromise, and Other Illusions*

“Personal self-satisfaction is the death of the scientist. Collective self-satisfaction is the death of the research. It is restlessness, anxiety, dissatisfaction, agony of the mind that nourish science.”—Jacques-Lucien Monod

“Scientists are human, with the standard set of tolerances. After too much frostbite, malaria, heatstroke, or dehydrated mush, the thrill of doing field research begins to pale... I’ll bet that many older scientists don’t complain aloud, but quietly stop (or at least sharply curtail) their research expeditions.”—Brad Lemley

“Sometimes I think we’re alone in the universe, and sometimes I think we’re not. In either case, the idea is quite staggering.”—Arthur C. Clarke, science fiction writer

*Editorial, continued from page 2*

(<http://astrogeology.usgs.gov/Projects/Valles-Marineris/>), a tremendous canyon system that makes Earth’s Grand Canyon look like a crack in the sidewalk.

There are many reasons why NASA didn’t choose either location, but in the end, the most influential was undoubtedly that NASA chose the most *logical* locations for their landings: areas where the probes would have the best chance of landing safely and answering scientifically important questions. But the disjunct between this logic and the emotional response to seeing Olympus Mons or the Valles Marineris close-up is clear: people visit Mt. St. Helens and the Grand Canyon because they are spectacular natural sights and evoke an emotional reaction that inspires the viewer. Utah’s Bonneville Salt Flats ([www.utah.com/playgrounds/bonneville\\_salt.htm](http://www.utah.com/playgrounds/bonneville_salt.htm)) and China’s Gobi Desert ([http://en.wikipedia.org/wiki/Gobi\\_Desert](http://en.wikipedia.org/wiki/Gobi_Desert)) may be more interesting scientifically, and they have a certain stark beauty if you love landscapes, but they’re clearly less spectacular, particularly to the untrained eye. It’s interesting to speculate that more money would be invested in NASA and that the American public would be more interested in and excited by NASA if the agency understood this key point. Yes, science is important, but if you can’t communicate that importance to people on an emotional level, you can’t convince them to fund your research or invest the effort required to understand it. Sometimes it’s necessary to indulge in a bit of short-term spectacle to secure support for more important long-term goals.

This does not mean that science should focus on the spectacular at the expense of the important. It does mean that we, as communicators, must learn that *dispassionate* doesn’t necessarily mean *passionless*. Anyone who’s seen the faces of scientists as they realize the magnitude of a discovery knows that these people aren’t the passionless drones portrayed on TV. There are also scientist poets, scientist artists, and scientist philosophers, all of whom understand the importance of emotion in their lives, and write about it passionately.

Yet somehow that passion never seems to come through in our efforts to communicate. If we start with a clear recognition of the fact that

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the most important audience for our science may be the people affected by it (and *not* our fellow science geeks), this can reshape how we think about our communication efforts. Consider, for example, the effects of Kennedy's moon speech (<http://history.nasa.gov/moondec.html>), which launched the "great space race" between the U.S. and the U.S.S.R. Consider the following excerpts:

"These are extraordinary times. And we face an extraordinary challenge. Our strength as well as our convictions have imposed upon this nation the role of leader in freedom's cause. No role in history could be more difficult or more important."

"Finally, if we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere."

"I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment, to which we have given attention over many weeks and months, because it is a heavy burden, and there is no sense in agreeing or desiring that the United States take an affirmative position in outer space, unless we are prepared to do the work and bear the burdens to make it successful."

Nowhere is there any mention of the science, and the only appeal to logic and objectivity comes towards the end of the last quote, when the burden is admitted. And although the speech mentions "minds" several times, it's clear that this is standing in for its true meaning: *emotions*.

By no means am I suggesting that we should distort science or conceal our true objectives in performing science. I chose Kennedy's speech solely to illustrate how effective an appeal to emotion can be. Years of secure funding for science have made us somewhat overconfident of

our ability to sustain that funding. The shaky economics of the U.S., and of other developed countries to a lesser extent, may turn that confidence into the hubris that precedes a fall. That being the case, I urge you to think carefully about more than the logic and fact of your scientific communication. I urge you to remember that humans respond better to emotional appeals than to logic alone, but that both are important. And I urge you to do this (in the words of Kennedy's speechwriters) "not because it is easy, but because it is difficult". The rewards from overcoming a difficult task are much more satisfying than those from taking the easy route and cleaving to the status quo. Plus, science is exciting stuff. It's time we shared that excitement.  $\Omega$

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"The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' (I've found it!), but 'That's funny...'"—Isaac Asimov

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"In my opinion, we don't devote nearly enough scientific research to finding a cure for jerks."  
—Bill Watterson (*Calvin and Hobbes*)

—  
" 'Oooh, ahhh,' that's how it always starts. Then later there's running and screaming."—Jeff Goldblum (as Dr. Ian Malcolm in *The Lost World: Jurassic Park*)

—  
"Nature is nowhere accustomed more openly to display her secret mysteries than in cases where she shows traces of her workings apart from the beaten path."—William Harvey

—  
"A popular scientific idea is not easy to overturn... We went into professional denial, hoping the Cat's Eye Nebula was an anomaly. It was not. Other Hubble images soon established beyond doubt that some fundamental piece was missing from our picture of how stars die. Egos aside, this was the best place for scientists to find themselves. When cherished ideas are in ruins at your feet, nature is challenging you to look at the world anew: What have you missed? What have you not thought of before?"—Bruce Balick and Adam Frank, *The extraordinary deaths of ordinary stars*

—  
"Science increases our power in proportion as it lowers our pride."—Claude Bernard

—  
"When you formulate a model, you quickly see your misperceptions. That's the value of simulation in science, to spotlight our ignorance."—Will Wright, inventor of *The Sims* and many other "games"

—  
"There is a crack in everything. That's how the light gets in."—Leonard Cohen, musician (1934—)

## **Book review: The digital biomedical illustration handbook**

de la Flor, M. 2004. *The digital biomedical illustration handbook*. Charles River Media, Hingham, MA. [ISBN 1-58450-337-8. 390 p., including index and CD-ROM. \$59.95 USD (softcover).]

by Donna Ford ([donna@evolve.net](mailto:donna@evolve.net))  
Previously published in *Technical Communication* 52(3):377.

If you're a writer who wonders why *The digital biomedical illustration handbook* is being reviewed in *Technical Communication*, then you probably never wanted to be either a doctor or a technical illustrator. I personally could hardly wait to receive the book, and then I quickly read the first four chapters, which include a brief history of medical illustration beginning in ancient Egypt, an update on current medical illustration and the way to enter this field, interviews with medical illustrators in business and education, and the workflow of a typical project.

Mike de la Flor is a freelance medical illustrator and writer. He has served as staff illustrator at several universities and is a contributor to *3D World* magazine. As you would expect, the book is superbly illustrated in full color. The author credits three other medical illustrators with providing help on the first four chapters.

De la Flor's experience shines in the main chapters, 5 through 11. Seven hands-on exercises provide detailed instructions on how to create medical illustrations or 3D models using digital imaging tools. Interspersed among the numbered steps are helpful tips on how the anatomical part appears in real life. The enclosed CD-ROM contains exercise files in various stages of completion. If you own the needed software, each exercise is straightforward and can be done on your own. The book is also detailed enough for use in an educational environment, though it lacks formal objectives and summary statements.

The table of contents is thorough; the 13-page index, more so. A medical glossary rounds out the front and back matter. A list of figures, which might have proved helpful, is not included.

Chapters 5 through 8 use Adobe Photoshop CS to create illustrations for typical customers. Chapters 9 through 11 use 3ds Max software to

create animated models for viewing on the Web. Each exercise starts from an illustration drawn by the author.

Chapter 5 teaches how to do surgical illustrations. You learn how to add dimension and color to anatomical parts involved in a renal transplant. The steps are easy to follow, even if you use an older version of Photoshop. I appreciated tips such as "Color is often used to indicate different tissues, before and after conditions, disease, or diagnoses, or to focus attention on a specific element" (p. 70).

Chapter 6 shows how to create an eye-catching medical illustration to be used for educational purposes. You apply Photoshop filters to create an illustration background and highlight specific portions of the brain. Chapter 7 explores the newest field of medical illustration, legal illustration. Chapter 8 ventures into veterinary illustration. Here you paint the bone and fur of a horse's leg and use filters to simulate an x-ray of a fracture just above the hoof.

In Chapter 9, you use 3ds Max to create a 3D model of an artificial heart. In Chapter 10, you create a model of the human eye suitable for patient education, while Chapter 11 shows how to animate an existing model of a protein chain.

If only the author hadn't mentioned how much medical experience is needed to succeed in his field, this book might just make me rethink my career as a writer. Ω

*Donna Ford (donna@evolve.net) recently self-published Scanning for kids of all ages, a book based on the course she teaches on scanning and OCR. She is a senior member of the Connecticut chapter and has served on the chapter's board. She has been a technical communicator for 16 years.*

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"Though my own fascination with medical history lies most with the people who have made it, I would never claim that this perspective is always the most effective one. Several factors—social, cultural, technological, and personal—can be explored separately, and for the sake of analysis they may be treated as independent variables. Nevertheless, the process of discovery arises from all of them working together, each in its proper proportion. Some variables may be more consequential than others in any given case, but they are all crucial to the evolution of the bit of progress being studied. The punishment for devaluing the significance of any of them is the writing of bad history."

—Sherwin Nuland, *The man or the moment?*

## **Book review: Communication and public participation in environmental decision making**

Depoe, S.P.; Delicath, J.W.; Aepli Elsenbeer, M.-F. eds. 2004. *Communication and public participation in environmental decision making*. State University of New York Press, Albany, NY. [ISBN 0-7914-6023-1. 312 p., including index. \$55.00 USD.]

by Kathy Hall ([kjhall@u.washington.edu](mailto:kjhall@u.washington.edu))

Previously published in *Technical Communication* 52(3):373–374.

Environmental writers and editors might occasionally take a long view and consider how well their projects succeed in bringing the public's voice into policy decisions. In a book written for scholars, activists, and government leaders—but equally useful for practitioners—13 authors critically examine successes and failures in public participation.

*Communication and public participation in environmental decisionmaking*, a title in the State University of New York (SUNY) series in communication studies, grew out of the Sixth Biennial Conference on Communication and Environment hosted by the University of Cincinnati Center for Environmental Communication Studies in 2001.

The anthology bridges theory and practice with case studies of traditional and innovative public participation methods. The case studies range from the traditional and bureaucratic “decide-announce-defend” (DAD) model to the concept of “civic discovery”, wherein all parties have equal standing and create shared meanings and vocabularies.

Each of the 13 essays is grounded in theory, though none have the depth of Killingsworth and Palmer's *Ecospeak: Rhetoric and environmental politics in America*. Rhetorical analysis is used in an argumentative fashion, for example, to call for a construction of shared meanings through dialog. The essays use theory as a framework for the case studies. For example, Amanda Graham of MIT explicates the concept of socially constructed meaning and applies it to the public process of a Clinton-era forest management plan. She de-

scribes how the Forest Service's framing moved the public from a potentially creative role to a reactive role.

Jennifer Duffield Hamilton, of the University of Cincinnati, describes a successful example of how shared meanings were created through trust-building, creating a more positive experience than might otherwise be predicted.

Steve Schwarze, of the University of Montana, presents a particularly strong rhetorical analysis of a failed Forest Service management plan. He disputes Killingsworth and Palmer's contention that agency rhetoric ultimately fails because of its focus on defending agency action. Schwarze argues rather that the agency fails to adapt to a general public audience, and thus fails to produce legitimacy for its audience—a failure of function rather than of discourse.

Theories from outside the academy are also presented, such as the Environmental Protection Agency's core values and guiding principles and the International Association for Public Participation (IAP2) public participation spectrum. Although practitioners won't find step-by-step instruction, they will find well-chosen and instructive case studies. One of the strongest is coeditor Depoe's contrast of a successful and a failed citizen committee on a particular nuclear site clean-up project.

Although not approaching the depth of some scholarly works or providing the how-to approach of some practitioner's tools, this volume provides a good overview of theory and practice in environmental decision-making, plus a 34-page bibliography that covers the past three and-a-half decades of environmental public involvement. Ω

*Katherine J. Hall* ([kjhall@u.washington.edu](mailto:kjhall@u.washington.edu)) is communication director of the University of Washington Department of Environmental and Occupational Health Sciences and a fourth-year PhD student in communication. Her annual report won best of show in the 2003 International DHTML Technical Publications Competition. She is Puget Sound chapter liaison for the International Association for Public Participation.

## **Book review: Metaphor and knowledge: the challenges of writing science**

Baake, K. 2003. *Metaphor and knowledge: the challenges of writing science*. State University of New York Press, Albany, NY. [ISBN 0-7914-5743-5. 245 p. \$21.95 USD paperback. \$65.57 USD cloth.]

by Candice McKee ([candie\\_mckee@sbcglobal.net](mailto:candie_mckee@sbcglobal.net))

Previously published in *Technical Communication* 52(3):382–383.

Great attention has been paid to the rhetoric of science over the past several decades. From Thomas Kuhn to Bruno Latour and Steve Woolgar, and from Alan Gross to Bernadette Longo, the research on the rhetoric of science has been wide and varied. Ken Baake's *Metaphor and knowledge: the challenges of writing science*, an ethnographic study of writing at the Santa Fe Institute (SFI), provides the latest informative look at how and why the use of metaphor continues to be both rejected and valued by scientists seeking to communicate across disciplines. Through Baake's observer-participant role, technical communicators and researchers of the rhetoric of science can begin to see how Baake arrived at his argument that metaphor composes and refines science, creating harmony between cross-disciplinary lines.

Baake's presentation of the age-old argument over metaphor in science remains engaging from beginning to end. He successfully navigates the intrinsic details involved with the analysis of metaphor in science through comprehensive presentation of the thoughtful and complicated arguments surrounding the issue. Throughout the discussion, he invites readers to engage in the contemplative thoughts of the user (the scientist or technical writer) of metaphor and whether or not it always meets their ultimate goal of accurate communication.

Baake's rhetorical strategies provide him the means by which to gain credibility with audiences who study the role of metaphor in science while providing those not as well versed with the background information necessary to understand

his methodology and conclusion. The first chapter presents information on how he came to study the use of metaphor at SFI, and specifically why SFI provides a rich atmosphere for such a study. After introducing the study, Baake dedicates a chapter to his own experience with writing at SFI. His experiences make available a medley of examples, discussions, and conclusions about the issues writers face in the field of science. Baake's experiences provide readers with an understanding of the issues scientists address when considering the use of metaphor in their writing.

Baake follows his experiences with an expansive literature review of the treatment of metaphor in language and rhetoric in science, philosophy, chaos theory, and modeling of complex systems. Like the scientists at SFI, Baake's review crosses disciplines and provides insight into the similarities and differences in studies of the use of metaphor. This review engages readers who have not studied the treatment of metaphor by providing the necessary background to understand the lengthiest, and most dense, chapter of the book, "Metaphor and Mathematics". In this chapter, Baake discusses the relationship between metaphor and mathematics at SFI. As in the first few chapters, Baake gives voice to

the scientists through interviews, providing arguments about the purpose of metaphor and when it fails to communicate the reality scientists find in their research. Baake explains the scientists' preference for mathematics and their understanding of the limitations it brings to the presentation of science. Scientists support their cautious approach of using metaphor through evidence, demonstrating that in some cases it may provide a narrow view of the concept, voiding the concept of its significance in science, or may invoke meanings not applicable to the scientific concept, promoting false representation.

The next chapter is dedicated to how these risks create difficulty for writers seeking to meet the needs of their audience. Baake's use of illustration in this chapter supports his argument that writers of science should start the writing process over for each new audience. Doing so, he says, provides writers with the opportunity to avoid

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"Scientists support their cautious approach of using metaphor through evidence, demonstrating that in some cases it may provide a narrow view of the concept, voiding the concept of its significance in science."

*Metaphor and knowledge, continued from page 8*

many of the issues discussed in previous chapters. He also addresses the value of single-sourcing, noting that the research and base text add value to the new presentation for each audience. He ends the chapter with a discussion of the issues that cross-disciplinary presentation invites. Then Baake narrows his discussion on a specific term: *complexity*. He begins the discussion by presenting the varied meanings and uses of the term across disciplines. He centers the discussion on the subjectivity scientists associate with the term. Though they understand its relationship to their studies, they feel the term can be too misleading to accurately describe their research. Baake ends his discussion with a reflection on the goals of SFI and the challenges that lie ahead for both the scientists and technical communicators of science. He addresses his audiences directly by offering insight into how each can apply the results of the study and by discussing the future rhetorical challenges of writing for science.

*Metaphor and knowledge* provides readers with a comprehensive look at the use of metaphor in science and with a fresh perspective on how to approach the challenges involved in writing for science. Academic readers will find the book useful for bringing together the multitude of research to promote more scholarly studies in the emerging fields of chaos theory and modeling of complex systems. Technical communication practitioners will find the book useful for understanding the complex studies devoted to the use of metaphor, and will develop an understanding of why scientists admire and reject the use of metaphor in scientific writing. Both audiences will find chapters specific to their interests and needs, which makes the book worthy of a place in a technical communication library.  $\Omega$

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## Discussion groups

### Scientific Communication SIG

STC and our SIG run an e-mail discussion group that provides a quiet, friendly place to turn for help if you've got any questions concerning scientific communication. To join, point your Web browser to:  
<http://lists.stc.org/cgi-bin/lyris.pl?enter=stcscsig-L>

There's no cost to join, and you can expect a very low volume of mail. Of course, the more people who join, the more traffic there'll be, so please join. It's a great way to make the SIG work for you.

### Editing

If your work involves lots of editing, consider joining the **Copyediting-L** e-mail discussion group, which focuses on editing in all its various forms. The group is not affiliated with STC, but you'll find many STC members there. To join, point your Web browser to:  
[www.copyediting-L.info/](http://www.copyediting-L.info/)

### Technical writing

If you do a lot of technical writing, join us on **Techwr-L** to discuss the tools and travails of the technical writer. The group is not affiliated with STC, but you'll find many STC members there. To join, point your Web browser to:  
<http://lists.techwr-L.com/mailman/listinfo/techwr-l>