



Learning to write: a fitness training regime

by Yateendra Joshi (yateendra.joshi@gmail.com)
Revised based on a version previously published in:
Current Science 92(10):1343–1344. (25 May 2007)

A recent note by Jacobs et al. (2006) in *Current Science*, based on quantitative data, mentions that “many authors of ... rejected papers have fundamental difficulties in their writing and presentation skills”. Nobody is expected to learn a psycho-motor skill such as riding a bicycle, swimming, or driving without practicing it. The same goes for learning to play a musical instrument or achieving a level of competence in sport. Yet even the scientific community appears to equate competency in writing with college education, if not literacy, and bemoans the poor writing skills of postgraduate students and young researchers. This is surprising, since guided practice, a controlled progression from basic skills to advanced skills, regular evaluation, and watching master performers are routine to any systematic, long-term effort to acquire a skill. Writing is no exception. Based on my experience as a researcher, scientific editor, and teacher, I should like to prescribe, in the manner of an old-fashioned General Practitioner (GP), a prescription (what we Indians might call a “mixture”) for all those who aspire to be better writers. The prescription comprises (a) extensive reading, (b) a modest amount of progressively more difficult writing assignments, (c) revising one’s writing, and (d) developing a concern for one’s readers.

The single most effective way to be a better writer is to be a diligent reader. As Bernard Dixon (1989) puts it, “read great prose... the lessons of style, clarity, rhythm, balance and syntax will sink in by subconscious osmosis”. It is possible, simply through massive exposure, to absorb typical patterns of English sentences and to string words together in those patterns without any formal study of grammar. However, that volume can come only from books and not from newspapers or newsmagazines. First, only books can

“The single most effective way to be a better writer is to be a diligent reader.”

Contents

Learning to write: a fitness training regime	1
Editorial: Choose your words carefully	2
An anthology of scientific pros[e].....	5
Book review: Attitudes and Opinions.....	7
Book review: Professional and Technical Writing Strategies	8
Book review: A Communications Guide for Sustainable Development.....	9
Job opportunities.....	11
Discussion groups.....	12

offer large tracts of text. Second, and more important, such text is better crafted because its authors and editors have more time than their newspaper counterparts to polish it. “The average adult reading speed for English prose text in the United States seems to be around 250 to 300 words per minute” (Bailey 2000). Assuming the average book to be of 100 000 words, the average student is likely to take at least 6 hours to complete a book. More than anything else, it is time that emerges as the major constraint—fitness trainers promise visible gains in muscles after about 3 months of regular exercise; I suppose it is reasonable to expect a detectable improvement in writing after reading, say, about twenty books.

Massive exposure to correct patterns is in fact the most natural way of acquiring a language. Empirical evidence supports this: “Pattern associator memories are highly sensitive to changes in the statistics of their input. When given a small number of oddball items, [readers] memorize their patterns individually; when given a torrent of items sharing a pattern, they go with the numbers, extract the pattern, and run roughshod over the individual items, gradually reacquiring them over many subsequent bouts of training” (Pinker 1999). I suggest a diet of light reading to absorb the basic patterns of English and to imbibe correct grammar. Books for the young readers (Enid Blyton, Captain W.E. Jones, and Richmal Crompton are some authors that come

(continued on page 3)

Editorial: Choose your words carefully: a couple things technical writers can teach scientific communicators



by Geoff Hart (ghart@videotron.ca)

What's wrong with the phrase "take one tablet by mouth three times daily for seven days"? If you're reading this newsletter, you might not think there's anything much wrong with it—but then again, you're a highly literate technical communicator who works primarily with words, and that means you have uncommonly good reading skills. Yet an article in the July 2007 issue of *Consumer Reports*, citing a paper in the *Annals of Internal Medicine*, reported that 46% of English-speaking adults with a range of language skills could not correctly follow such instructions.

What's wrong with the drug name Lunesta? Apart from the obvious (i.e., that the name provides not the slightest indication of what the drug does), it apparently sounds too much like Neulasta—which wouldn't be a problem if both were sleeping pills, but given that Neulasta is a chemotherapy drug, there's a high downside potential should a slip of the tongue occur. The same issue of *Consumer Reports* reported a recent near-disaster in which a pharmacist confused the two drugs, though fortunately another pharmacist caught the problem before the drugs reached the patient. Such errors are apparently common, since syllable transpositions (new-leh versus looneh, in this case) are a pernicious problem that leads to the well-known and usually entertaining phenomenon of spoonerisms. I once amused a group of strangers by reporting that "I'm a grad stool", having fallen uncomfortably in the gap between "I'm a grad student" and "I'm in graduate school". The National Academy of Sciences has reported that up to 25% of medication errors may result from such problems.

Treat my description of both problems as illustrative, not authoritative, since I'm working exclusively from secondhand information instead of going direct to the source to verify the details.

(Anyone willing to hunt down the original materials and provide a more detailed description of the problem? Please do! It would make for a great article in a future issue.) My point in raising these two examples is to illustrate two problems that all technical writers and editors are familiar with: First, that experts are over-familiar with their own words, and don't examine their word choice as carefully as they should. Second, that critical text should include built-in ways to prevent errors or let readers detect errors quickly.

Can the lessons learned from technical communication help us avoid such problems in our own work? Emphatically yes. Here are some possibilities.

First, let's consider the prescription instructions. Those of us who write software documentation have learned to break instructions into discrete statements, with one statement

(continued on page 10)

the Exchange, Vol. 14 No. 3, October 2007.

The Exchange is published on behalf of the Scientific Communication community of the Society for Technical Communication (www.stcsig.org/sc/).

Copyright for material published in *the Exchange* belongs to the author. For permission to reprint an article, please contact the author. We welcome comments and letters to the editor.

Submissions: To submit an article, please contact the editor. By submitting an article, you grant a license to this newsletter to publish the article in print and online. In your cover letter, please indicate whether the article has been published elsewhere, and confirm that you hold copyright to the text.

Editor: Geoff Hart (ghart@videotron.ca)

Manager: Kathie Gorski (kgorski@execpc.com)

Webmaster: Cory Koeppen (cjoelk@earthlink.net)

© 2007 **Society for Technical Communication**

901 North Stuart St., Suite 904

Arlington, Virginia

22203-1822 U.S.A.

Tel.: 703-522-4114

Fax: 703-522-2075

Web: www.stc.org

Learning to write, continued from page 1

to mind) and pulp fiction suit the purpose very well, and so does the recently launched Quick Reads series from Britain. The guidelines for authors of Quick Reads are instructive: short words of no more than two syllables, short sentences that average 15 words, short paragraphs no longer than 10 lines, chapters no more than 7 pages, and short books (about 130 pages or 20 000 words) to “encourage millions of adults to read their first book” (Alderson 2005). From this, the aspirants move on to light fiction of their choice, from the much-vilified Mills and Boon to current favorites such as John Grisham (average sentence length 10.5 words), including a sprinkling of older favorites such as Arthur Hailey, James Hadley Chase, Alistair MacLean, and even Harold Robbins. The handy “Very Short Introduction to” series from Oxford University Press, including such titles as *Particle Physics*, *Molecules*, and *Global Warming*, is also promising and probably will go down better with the authorities (Anon. n.d.). The idea is to read racy stuff in large quantities (Hailey’s *Airport* is about 160 000 words) merely as a stepping stone to the prose of masters.

Who are the masters, then? Winners of the Aventis prize (www.royalsoc.ac.uk/bookslanding.asp?id=6317); the Pulitzer prize, in the category explanatory reporting (www.pulitzer.org); authors whose work is featured in such series as *The Best American Science Writing* and *The Best American Nature and Science Writing* (selections from magazines) or anthologies such as *From Creation to Chaos: classic writings in science* (Dixon 1989) and *Best Science Writing: readings and insights* (Gannon 1991). Just as regular weight-training makes it possible to handle heavier weights, the earlier reading prepares students for more serious stuff. Richard Dawkins’ average sentence runs a little over 20 words, Rachel Carson’s *Silent Spring* takes it to 23 words, while the majestic *Discovery of India* is close to 23.5 words per sentence. (Amazon.com offers such information for many books; on the Web page of a book, after “Product Details”, look for “Inside the Book” and then look under Text Stats.) Recommendations for books are purely subjective: I favor Bill Bryson (winner of the

Aventis prize for his *A Short History of Nearly Everything*), Conan Doyle’s Sherlock Holmes books, Alistair Cooke, Gerald Durrell, George Mikes, Somerset Maugham, and Mark Twain. I am sure other readers will include Isaac Asimov, Jared Diamond, George Gamow, and Robert M Sapolsky. However, the staple reading for most researchers is research papers in their disciplines, and if that reading is to contribute to better writing, a good starting point is a paper entitled *How to read a scientific article* (Millikan 2000).

I’m not familiar with teaching in North America or Europe, but the pattern of examinations in India increasingly favors so-called objective questions, which make no demands on expository writing; poor writing skills, therefore, pass unnoticed. Any prescription for better writing, therefore, must include writing assignments. I suggest that such assignments begin with writing at least ten sentences (each at least eight words long), progressing to ten sentences on any one topic, and then on to rendering in the learner’s own words a page or so from any of the books mentioned above, followed by repeating the exercise with any research paper from any appropriate journal. Writers of research papers do not have to search for suitable topics and have enough material to write about them—definite advantages that are denied to aspiring writers from other walks of life—but also lack freedom: research writing is rooted in the concrete world and not one of the imagination. What is more, scientists writing about their research are expected to describe their methods explicitly enough for other researchers to replicate them in their own laboratories. Research writing is also constrained by two other requirements, namely the traditional IMRaD structure (introduction, materials and methods, results, and discussion) and the even more rigid formatting requirements spelled out in such style guides as *Scientific Style and Format* (CSE 2006) and the *ACS Style Guide* (Coghill and Garson 2006).

As readers, we seldom remember that the good writing we see in print is the result of re-writing and revising, not merely to eliminate misprints but to make the writing easier and clearer. Students should be encouraged to edit one an-

(continued on page 4)

“As readers, we seldom remember that the good writing we see in print is the result of rewriting and revising, not merely to eliminate misprints but to make the writing easier and clearer.”

Learning to write, continued from page 3

other's writing to see why revising is necessary and how it contributes to better writing. Having one's writing professionally copyedited or using style checkers such as the Boeing Simplified English Checker (www.boeing.com/phantom/sechecker/), which can check for such common errors as missing articles (based on count and mass distinctions) and unapproved verbal auxiliaries (passive, progressive, perfect, modals) serve to highlight recurring faults. Researchers writing about their work seldom realize the need to organize their writing—not only in terms of the overall structure but also at the level of sentences—for readers who are not as familiar with the subject as the writers: *The Science of Scientific Writing* (Gopen and Swan 1990), with examples taken from molecular biology and geology, shows how sentences can be recast for clarity, demonstrating in the process “a number of rhetorical principles that can produce clarity in communication without oversimplifying scientific issues” and establishes that “complexity of thought need not lead to impenetrability of expression”.

The last point is that effective writers are considerate to their readers, a point particularly important in this context because a great deal of scientific writing is motivated by considerations other than communication. As a *Current Science* editorial once put it, “Writing for a lay audience has very little social prestige among scientists. Students who sometimes indulge in this enterprise are told that they are wasting their time and professors who do so are told that they have run out of ideas for doing science” (Gadagkar 2006).

As Somerset Maugham concludes his thoughts on writing prose, he observes: “If you could write lucidly, simply, euphoniously and yet with liveliness you would write perfectly: you would write like Voltaire” (Maugham 1938). It is not given to everyone to write like Voltaire, but given time and inclination, we all can produce readable prose. Ω

References

- Alderson, A. 2005. Quick lit as best selling authors write for 12m non-readers. <<http://news.telegraph.co.uk/news/main.jhtml?xml=/news/2005/10/09/nlit09.xml>>.
- Anon. n.d. Very short introductions to almost everything. <www.oup.co.uk/general/vsi>

- Bailey, B. 2000. What are typical human interaction speeds for reading, listening, speaking, keying, and handwriting? User Interface Design Update, August 2000. <www.keller.com/articles/readingspeed.html>
- Coghill, A.M.; Garson, L.R. 2006. The ACS style guide: effective communication of scientific information. 3rd ed. American Chemical Society, Washington, DC.
- CSE. 2006. Scientific style and format. 7th ed. Council of Science Editors, Reston, Virginia.
- Dixon, B. 1989. From creation to chaos: classic writings in science. Basil Blackwell, Oxford.
- Gadagkar, R., 2006. Guest editorial: Some reflections on the pursuit and evaluation of science. *Current Science* 90:473–474.
- Gannon, R. 1991. Best science writing: readings and insights. Universities Press, Hyderabad.
- Gopen, G.D.; Swan, J.A. 1990. The science of scientific writing. *American Scientist* 78:550–558.
- Jacobs, D.; Pichappan, P.; Sarasvady, S. 2006. Documenting the peer review data. *Current Science* 91:1605–1607.
- Maugham, W.S. 1938. The summing up. William Heinemann, London.
- Millikan, B. 2000. How to read a scientific article: reviewing research articles and interpreting the literature. <<http://cbcs.med.unc.edu/howto.htm>>
- Pinker, S. 1999. Words and rules: the ingredients of language. Weidenfeld & Nicolson, London.

Yateendra Joshi (yateendra.joshi@gmail.com) is currently working with the World Institute of Sustainable Energy (Pune, India) as Senior Fellow, and with Cactus Communications (Mumbai) as a trainer. He spent 16 years (from 1989) with the Energy and Resources Institute (New Delhi) in the publications unit. Yateendra also worked as a scientist with the Indian Council of Agricultural Research for 10 years and taught for 2 years at the University of Agricultural Sciences (Bangalore) immediately after obtaining a master's degree from the same university in 1976. He was made an Associate Fellow of the Communication Research Institute in April 2007.

“As the circle of light increases, so does the circumference of the darkness around it.”—attributed to Albert Einstein

An anthology of scientific pros[e]

by Joseph E. Harmon (*harmon@anl.gov*) and
Alan G. Gross (*grossalang@aol.com*)

Printed scientific communications were key to the scientific revolution of the sixteenth and seventeenth centuries. Since then, every professional scientist has left behind anywhere from a handful to hundreds or even thousands of scientific journal articles documenting their life's work and achievements, yet little scholarly attention has been devoted to what the first such articles were like and how they have evolved over time. That realization motivated us to assemble a book to help fill the gap.

The Scientific Literature: A Guided Tour (University of Chicago Press, 2007) includes excerpts from more than 100 articles that represent the broad sweep of discoveries in the modern sciences from their beginnings to the present day. It also includes 60 tables and illustrations—tools so vital to scientific communication as supplements and complements to the text. Accompanying these excerpts, tables, and illustrations are commentaries explaining their scientific and historical context and analyzing their communicative strategies. This book permits the general reader to read about and to re-experience the development of modern science.

In general, past science anthologies have done one of two things: either they reproduced whole scientific papers or book chapters and, therefore, tended to leave the general reader behind, or they consisted of passages or articles written by famous scientists or science writers specifically with non-professional readers in mind. Our selections come from publications written by scientists largely for other scientists. But we have taken care to quote relatively short passages and provide explanations that make them understandable to the general reader. The resulting book provides a unique window into an important genre of writing largely unknown to the educated reading public. It also has an extensive bibliography of print and Web sources for serious students interested in further study. We believe the book should be of particular value to those working in scientific communication.

To convey the flavor of the book, we have reproduced two excerpts accompanied by our commentaries. The first illustrates what we consider elegant scientific prose; the second shows how science is a very human activity.

Imagine that: the power of repetition

Smith, H.M. 1935. Synchronous flashing of fireflies. *Science* 82:151–152.

A favorite axiom of writing guides is “be brief”. Another is “avoid needless repetition”. This selection violates both principles to good effect. It describes the author's nocturnal observation of thousands upon thousands of fireflies sitting in a line of mangrove trees (*Sonneratia acida*) along a river and flashing in perfect unison “hour after hour, night after night for weeks or even months, without regard for air currents, air temperature, moisture or any of the other meteorologic conditions which have been stated to influence firefly flashing.” Hugh Smith observed this “outstanding zoological phenomenon in a country [Thailand] that abounds in zoological features of great interest.” He invites his readers to:

Imagine a tree thirty-five to forty feet high thickly covered with small ovate leaves, apparently with a firefly on every leaf and all the fireflies flashing in perfect unison at the rate of about three times in two seconds, the tree being in complete darkness between the flashes. Imagine a dozen such trees standing close together along the river's edge with synchronously flashing fireflies on every leaf. Imagine a tenth of a mile of river front with an unbroken line of Sonneratia trees with fireflies on every leaf flashing in synchronism, the insects on the trees at the ends of the line acting in perfect unison with those between. Then, if one's imagination is sufficiently vivid, he may form some conception of this amazing spectacle. By going out into the river far enough from shore to lose sight of the individual flashes, a person may obtain from a single tree, a group of trees or a long line of trees a weird pulsating mass effect.

By means of a series of imperative sentences (“Imagine...”, “Imagine...”, “Imagine...”),
(continued on page 6)

An anthology, continued from page 5

Smith's prose conveys the literary equivalent of the biological oscillations that he has observed visually. Within this parallel structure, nevertheless, this paragraph builds to a brilliant crescendo. The first sentence summons a single flashing mangrove tree. The second, a dozen trees. The third, the many trees bordering a river for a tenth of a mile. In the fourth sentence, the author halts in his analytical description of the scene, calling it simply an "amazing spectacle". After the descriptive ingenuity of the previous sentences, the usually vapid adjective "amazing" acquires a remarkable precision. It is the reaction anyone must have on viewing this phenomenon, or even just to imagining it. The final sentence is like a long shot in a film: it moves the viewer outward until the individual firefly flashes can no longer be distinguished. At that distance, the author recapitulates his perceptual journey, taking the reader through the three perspectives of the previous sentences: single, dozen, very long line.

Translated into the flat, concise language of modern science, the author might have written a single sentence in place of the whole paragraph:

The fireflies in Siam congregate in Sonneratia acida at a density of 2.5/ft and distance of 0.1 mile and flash in perfect unison at a rate of 1 to 1.5/sec by a mechanism as yet unexplained.

Brevity is not always a blessing.

Extreme erratum

Breene, R.G. Jr. 1967. Erratum: Charge exchange between homonuclear diatomic molecules and protons. *Journal of Chemical Physics* 47:1882.

The literature of science is as much about wrong turns, aborted lines of inquiry, failure to thrive, and outright failure as it is about success. Even the greatest of scientists fails now and again, just like the rest of us. Indeed, unless one is selective to the point of unrepresentativeness, it must be admitted that some nontrivial fraction of past science is a collection of dead ends and well-intentioned mistakes, eventually discarded.

Our selection here is a highly unusual erratum. In it, the author acknowledges major flaws in a chemical article he published in the previous year's *Journal of Chemical Physics*. We reproduce the erratum in full:

The material contained in this article is nonsense and should be discarded in toto. As will be shown elsewhere, one of the most serious defects is the poor transformation given by Eq. (9). It is to be emphasized that the printer set the manuscript precisely as the author had concocted it.

—
Joseph E. Harmon (harmon@anl.gov) works for Argonne National Laboratory as a coordinating writer/editor and is a senior member of STC. Alan G. Gross (grossalang@aol.com) is a professor of rhetoric at the University of Minnesota and author of many books and articles. For more information on the book discussed in this article, see <<http://www.webwire.com/ViewPressRel.asp?aId=33222>>. They also collaborated on *Communicating Science: The Scientific Article from the 17th Century to the Present* (with Michael Reidy; Oxford University Press, 2002) and are now working on a third book, *How the Best Scientists Write*.

"Whether as trackers, poets, or shamans, we have intuited in the unfolding of Nature an endless book in which we, like every other thing, are written, but which we are also compelled to read."—Alberto Manguel, *Fragments of Paradise*

—
"Is the scientific and technological revolution now in progress actually any more sweeping than that which took place more slowly during the 3000 years since Homer wrote? Is not the difference between the scienceless and machineless world of his time and that which the 20th century now possesses and cowers under as great as any that is likely to be between our present world and that of the 21st century? The heroes of *the Iliad* would be as bewildered in New York or San Francisco as we would be distressed by Troy, Ithaca,

or Mycenae. But if we could meet together in some grove or porch where nothing need remind us of the presence or absence of those changes that time has made in our environment, and if we were to discuss not religion, technology or science, but love, hate, tragedy, pathos, and the paradox of man's persisting inhumanity despite his capacity for pity and tenderness, then I think we would understand one another quite well and realize that... we are not new men but the same old paradoxical creatures, 'the glory, jest and riddle of the world'."

—Joseph Wood Krutch, *If You Don't Mind My Saying So*

—
"The wonderful thing about science is that it can even explain things that nobody needs to know."

—Robert Wolke, *What Einstein Told His Cook*

Book review: Attitudes and Opinions

Oskamp, S.; Schultz, P.W. 2005. 3rd ed. Lawrence Erlbaum Associates, Mahwah, NJ. [ISBN 0-8058-4769-3. 578 p., including index. US\$69.95.]

by Katherine Hall (kjhall@u.washington.edu)

Previously published in *Technical Communication* 53(3):356–357, August 2006

Technical communicators in all disciplines, but especially those specializing in health and environmental communication, have an interest in attitude formation, public opinion, and behavior change. Oskamp and Schultz's *Attitudes and Opinions* provides a broad overview of these fields, with extensive references for further reading. This expansive volume is broad, if at times shallow. However, some subjects, such as attitude formation, public opinion polling, and the social impact and policy implications of attitudes and opinions, are approached in some depth.

Oskamp and Schultz target their book at upper-division or graduate-level courses in psychology, political science, sociology, and communication, although examples show a bias toward psychology. They describe the book as "a scholarly, yet engaging, text" (xi) and include encyclopedia-like biographies of major contributors to attitude and opinion research.

This is the third edition of a book originally published in 1977, but the references appear fresh. For example, the discussion of content analysis cites Kimberly Neuendorf, one of the current scholars in this field, instead of Ole Holsti, Klaus Krippendorff, or other pioneers. This volume is at its best when discussing trends over time, for example in the social perception and social cognition section, or the evaluation of attribution theory. It provides some handbook-like directions, although the discussion of attitude measures such as the Likert scale provides this disclaimer: "This will not prepare you to use these methods yourself to build an attitude scale, but it will provide you with enough information to understand references to such methods . . . in the research literature" (47).

The authors don't mince words when critiquing some research in their field, using terms such

as "hasty" and "slipshod" (51) or labeling William McGuire a psychological "systematizer" and "gadfly" (164). They describe major research trends in their field and identify those that have come up short. For example, a critical analysis of attitude change theories concludes that none of the current theories fully addresses the issue, but they then suggest avenues for future research. The second half of the book applies theory to contemporary social issues such as voting behavior, international attitudes and terrorism, racism and prejudice, sexism and gender roles, and attitudes about environmental issues. These examples seem to have been updated to the post-9/11 era.

This book would be a valuable addition to the general reference shelf of any technical communicator. The discussion of attitude change is particularly relevant for health communicators, as is the section on Fishbein and Ajzen's theory of reasoned action. Other technical communicators will find relevance in the chapter on communication of attitudes and opinions, particularly the discussion of persuasion theories. Policy analysts will find value in the discussions of public opinion, public information, and public affairs. There is an almost encyclopedic description of the history of polling.

As an introduction to the field of attitudes and opinions, this book shows newcomers the lay of the land and provides signposts for navigating the more than 2000 references. Its index cross-references both authors and theories. It provides a solid refresher on research methods and schools of thought. Its greatest value may lie in being a reference work, as it could be a tedious textbook. Specific chapters, however, could be useful in technical communication courses. Ω

Katherine J. Hall (kjhall@u.washington.edu)

is communication director of the University of Washington Department of Environmental and Occupational Health Sciences and a UW PhD candidate in communication, focusing on public involvement and political communication. Her annual report won best of show in the 2003 International DHTML Technical Publications Competition.

Book review: Professional and Technical Writing Strategies: communicating in technology and science

VanAlstyne, J.S. 2005. 6th ed. Pearson Prentice Hall, Upper Saddle River, NJ. [ISBN 0-13-191520-7. 738 p., including index. US\$89.20 (softcover).]

by Charles Crawley (crcrawle@rockwellcollins.com)
Previously published in *Technical Communication* 53(3):369–370, August 2006

Professional and Technical Writing Strategies came along at a propitious time for me because I'm teaching a professional writing class and looking at the possibility of changing textbooks. VanAlstyne's book, now in its 6th edition, claims to be "the most up-to-date and complete technical-writing textbook on the market" (iii). Before we examine this claim more closely, let's see what has changed from the previous version.

First, the 6th edition is more global in its outlook and attempts to address English as a second language (ESL) and multicultural groups in every chapter. New figures and page-design options have been added, and a new chapter addresses the production of fliers, brochures, and newsletters, long the bane of technical communicators, from the days when Tina first complained about them in Dilbert. Finally, VanAlstyne has expanded on her Web design chapter to include new instructions and graphics.

Now let's look at her claim regarding currency. In her discussion of pie charts, she states, "If you use computer software, you can simply enter the data and the software will construct the pie chart" (90). *If you use computer software?* This statement may have seemed necessary in an earlier edition, but surely not in 2005, the year it was published. Regarding photographs, she refers to the scanning of pictures but doesn't mention digital photography, an area of immense interest to both technical communicators and the public at large. (See the review of digital photography books in the November 2005 issue of *Technical Communication*.) Finally, in her discussion of tables of contents, VanAlstyne seems unaware that Microsoft Word can generate a table of contents based on styles. Statements on these points need to be updated completely. It seems as if her book

is dragging along its past and needs to be rewritten instead of edited, or edited more deeply.

She has a better claim for completeness, in terms of covering all the bases and providing strong, practical examples for classwork. For example, in her chapter "Composing correspondence", she suggests writing a variety of e-mails, such as positive, negative, and neutral, and gives real-world examples for each. (She continues to use *memo*, which is not a good word choice these days.) Another good example of completeness involves her suggestions for writing reports, which show her knowledge of a wide range of report styles, including progress, lab, incident, field, and feasibility.

VanAlstyne is a good writer and excels in differentiations, such as explaining descriptive versus informative abstracts in her chapter on devising longer reports and proposals. And I'm glad she includes the chapter "Producing professional papers", which provides good practice for students to write conference papers. I've found such experience helpful for convincing employers to let me attend the STC Annual Conference.

I would consider this book based on its completeness and the quality of the writing, but it needs a more thorough makeover before I would actually use it in class. The examples cited earlier are enough to make me skeptical of her claim to have written the most "up-to-date" textbook on the market.

Ω

Charles Crawley (crcrawle@rockwellcollins.com) is a lead technical writer at Rockwell Collins in Cedar Rapids, IA. In addition to his duties as PR manager for the Eastern Iowa STC chapter, he teaches a class on professional writing at Mt. Mercy College, also located in Cedar Rapids.

"Understanding relativity is not easy, but understanding *Macbeth* isn't easy either. And yet you don't get intimidated by a Shakespeare play. I think we should have the same joy and excitement about wrestling with science as we do wrestling with Shakespeare. It's magical to be awed by the spirit manifest in the laws of the universe, and we can all appreciate it even if we don't know the math."—Walter Isaacson, in an interview about his book *Einstein: His Life and Universe*

Book review: A Communications Guide for Sustainable Development: How Interested Parties Become Partners

Hund, G.; Engel-Cox, J.; Fowler, K. 2004. Battelle Press, Columbus, OH. [ISBN 1-57477-140-X. 113 p., including index. US\$34.95 (softcover).]

by Gary Hernandez (gary.hernandez@uk.bp.com)

Previously published in *Technical Communication* 53(2):257–258, May 2006.

In recent years, a sustainable development movement has taken hold across the corporate world. Go to any major company's Web site and you are likely to find a sustainability report alongside their annual report. Hund and colleagues explain in *A Communications Guide for Sustainable Development* that corporate sustainability efforts endeavor to "anticipate and meet the needs of both present and future generations of customers and interested parties" (3). Corporate sustainable development covers environmental, social, and economic concerns—a large endeavor, indeed. To help cut through the mire, the authors offer a practical handbook geared to help practitioners develop communication and engagement plans to support corporate sustainable development.

Although the guidebook focuses on industrial operations, especially ISO 14001 standards, the principles the authors outline can be applied to other enterprises. The topics covered are overall strategic approaches, stakeholder and interested party involvement, written and verbal tools, and general concerns over industrial activities. While the book is much too brief for the authors to give in-depth details on any of these topics, they do offer comprehensive checkpoints that would prove useful to most project managers. Most notable amongst these are representations of communication processes and frameworks, illustrated by figures ranging from simple milestone chevrons to rich, multi-layered graphics. For a generalist in communications, the frameworks lend invaluable insights; for a specialist, useful benchmarks. As an example, the authors present several sample communication plans identifying the overall plotting of events and stakeholders. Generalists can use these to map out their

plans; specialists can use them to compare to their plans.

A bonus to the book is its international perspective. Practitioners wearying of reading typical U.S.-centric works will be pleased to see casework taken from companies across the globe.

While there is little to criticize about the work, I will say the authors have the tendency to bold-face items that seem of particular importance to them. The result is not unlike my sixth grader's science book in which he has highlighted every other sentence. My point is that it is sometimes better to let the readers sort out what is paramount to them—especially with a short text.

Altogether, I am impressed by the value the small book delivers. It is well worth the short amount of time it takes to read. For a communications specialist, the book might be a bit elementary, if not redundant; for the rest of us mortals, it is a sensible collection of useful communication guidelines. The book is doubly valuable if one is working to build a corporate sustainable development plan.

Ω

Gary Hernandez (gary.hernandez@uk.bp.com) is a communications manager for BP. He received his English literature MA from George Mason University and received his technical writing MS from Utah State University. Gary belongs to STC and IABC.

"... a view of technology that focuses exclusively on the most tangible products of industrial civilization—hardware, factories, computers—is profoundly incomplete. Instead, we should think in terms of technological systems, which include not just objects but production techniques, technical standards, financial and legal institutions, specialists, and consumers themselves. The interdependency that defines these systems helps explain why technological changes can have unintended consequences... The interdependency of people, artifacts, and institutions also means that any technological problem can also have social, economical, and legal dimensions."

—Alex Soojung-Kim Pang, *Iron, Coal, Burgers, and Beer*

"There's no shortage of roadblocks in science. It's just one big roadblock. Scientists have to keep looking around the corner or figure out how to get through somehow."

—Michael Hawley

per step, instead of stringing them together in a single long sentence. Each step can then be read, understood, and acted upon before moving to the next step, thereby eliminating the risk of overloading the reader's "channel capacity" (the amount of information they can receive simultaneously). It may also be helpful to remove useless redundancies such as "take by mouth" that don't add to the precision, leaving less text for readers to deal with; after all, there are few other ways to take a tablet, and in the absence of clear and diplomatic instructions to the contrary, few patients will assume the tablets should be used as suppositories. Using a strong single verb such as "swallow" instead of a weaker phrasal verb ("take... by mouth") would also help. Last but not least, we should focus carefully on the context of use: here, the important thing is not that the medication should be taken for a week, but rather that all pills must be consumed according to a specific schedule. On that basis, "take one tablet by mouth three times daily for seven days" might become the following, at least as a first draft we can subsequently test and refine with the help of representative patients:

- Take one tablet with breakfast, one with lunch, and one with dinner.
- Swallow each tablet with a full glass of water or milk.
- Continue taking your medicine until all the pills are gone.

Now let's consider the confusion of drug names. We can't reasonably expect to exert any influence over the choice of drug names, which are chosen by marketing departments for reasons that surpasseth mortal understanding. But we can build some forms of error prevention and detection into the process. In contrast to the previous example, encouraging doctors to build redundancy into the information they convey would be beneficial; for example, adding "sleeping pills" or "to help patient to fall asleep" to the scrip would help to alert even a sleepy pharmacist that Neulasta is the wrong drug. In the previous example, making the instructions concrete (by listing the actual times when each pill should be taken) instead of vague (three times per day, but at what times?) provided guidance that mini-

mizes errors. Providing redundant information such as "sleeping pills" helps in a similar way. For additional security, we could ask doctors to specify acceptable generic alternatives to brand-name drugs. If the functions of the generic drug and the name-brand version don't match, this should raise a red flag that alerts the pharmacist to a problem. (It's also an ethical approach that offers patients the chance to save money.)

Needless to say (therefore, doubly worth saying), you should not simply accept my suggestions uncritically, particularly if the consequences for human life are significant. I'm confident that my suggestions are *reasonable*, but my experience working with actual readers over the years has convinced me how unreliable my own impressions are. For any change to current practice for which the consequences of failure are severe, we must test our new approach carefully to ensure that *reasonable* also means *realistic* and that we haven't created any new problems. In this case, the test audience would

be a sample of typical patients and pharmacists, and the testing might be simple indeed. For the rewritten prescription instructions, we could ask patients to read the instructions and tell us when they would take each dose, how many pills they would take at that time, and when they could stop taking the pills. If the answers don't match our expectations, that's a clear sign we need to probe further to find out why. For the pharmacists, we could submit a series of prescriptions for drugs whose names are likely to be confused (based on the National Academy of Sciences study results), with the prescriptions divided into two groups: first, the traditional prescription with no extra details, and second, the same prescription with clues added. We could then compare the frequencies of error for the two groups.

These two medical examples illustrate something we communicators tend to forget: that communication is not a passive activity, in which readers or listeners open their minds and we pour in pre-packaged information in perfect, industrially precise quantities. On the contrary, our audience is always an active participant in any communication, and creates their own meaning from what we give them. Because that meaning

(continued on page 11)

...communication is not a passive activity, in which readers or listeners open their minds and we pour in pre-packaged information in perfect, industrially precise quantities."

Editorial, continued from page 10

may not be what we intended, we must always ask ourselves whether it might be possible, with a little more work, to error-proof that communication. Of course, that's a purely theoretical question. In a more practical sense, my examples also remind us that as consumers of medical services, we must take responsibility for confirming that we understand a prescription, and if not, that we ask the doctor to rewrite it so that we do understand.

I suspect that many doctors will react unfavorably to efforts on our part to educate them about better ways to communicate. But it's ethi-

cal for us to try. Sometimes an appeal to selfishness works: "The costs of malpractice insurance would drop if all doctors wrote prescriptions more clearly." Sometimes an appeal to authority works: "I'm a professional communicator, and have won awards in medical writing. So when I suggest that you write things this way, you can take that as professional advice every bit as good as the advice you provide." And sometimes it's just a question of educating yourself and your friends and family to become better-informed consumers of information, medical or otherwise. Ω

Job opportunities

Freelance writing for ASTM

ASTM International, a developer of international standards for materials, products, systems and services, is seeking experienced freelance writers to write articles about technical subjects (geared toward educated lay readers) and standardization in relation to global trade, regulatory issues, consumer and environmental issues and more for its flagship publication *Standardization News*.

We are looking for freelancers with experience writing about such topics to become part of a small pool of freelance writers to whom I can assign articles on an as-needed basis. We generally pay by the word on a competitive basis.

If you think you could contribute to the magazine, please contact me by email or phone and send a resume and writing samples.

Maryann Gorman (mgorman@astm.org)
Editor in Chief, *ASTM Standardization News*
100 Barr Harbor Dr., P.O. Box C700
West Conshohocken, PA 19428-2959
Voice: (610) 832-9606
Fax: 610/832-9623
<http://www.astm.org>

Memorial Sloan-Kettering Cancer Center

Location: New York, New York

The Person: The main function of the Senior Science Writer/Editor is the writing and editing of communications and publications for Memorial

Sloan-Kettering Cancer Center (MSKCC) on clinical, research, and institutional topics. This person will be responsible for the initiation, implementation and supervision of specific projects that will educate readers about the ongoing work at the Center as well as publications that simplify and enhance the experience that patients have before, during, and after treatment at MSKCC.

The Senior Science Writer/Editor will have internal contact with Center staff such as senior executives and vice-presidents, associate hospital administrators and directors, service chiefs, department chairs, program directors (SKI), administrators, managers, attending staff, principal investigators and peers outside his or her division. The external contacts of the Senior Science Writer/Editor, who doesn't directly supervise other positions, are patients and their families.

Education: Bachelor's degree, preferably in natural sciences. Graduate degree in journalism is preferred but not required.

Preferred Experience:

- Five years experience
- Solid background and experience in science and medical writing and editing
- Microsoft Word
- Copyediting skills

Contact Information:

Lily H. Li, Associate
lli@proutgroup.com
Phone: (347) 503-0753

Discussion groups

Scientific Communication community

STC and our community 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 community 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/

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>