



# Practical Thinking

## How to Use an Editor

by Virginia Hansen

*This article is intended to be the first in a series of articles on Independent Scholarship. We plan to incorporate these articles into a booklet at some future time.*

A friend used to teach University Extension classes on copyediting and on “How To Get Your Manuscript Published,” and she let me come to the last class-period in copyediting (often with other types of editors) to talk and answer questions. One quarter she let me speak the whole hour to the class on “How To Get Your Manuscript Published.” I began by asking what they thought an editor did. Even after a whole academic quarter of explanation and demonstration, they were honest in their bitter answers that I wrote on the board, many of which boiled down to: “an editor is someone who cuts up what you worked so hard to write.” (Butcher!)

Then I wrote my own answers. “First, an editor is a readers’ advocate.” One of my harshest comments is one word written in your margins: “huh?” If I do not follow your prose, others may not either, and when readers get tangled up, they set it aside and quit reading. I am often not an expert in the content of textbooks written by faculty whose manuscripts I edit (for \$20/hour). But I am an attentive reader, and I read to the end, even if that gets confusing. That, and not expertise in their content, is what writers expect me to be fluent in. I can edit a manual on computer usage, even when I may know a fraction of what the author knows—after all, readers will read it to learn what they do not already know. So even if many of my clients write on academic medical topics, or statistics and banking, or managerial skills, or poetry, I can still act as a reader while editing what they wrote. In fact, it’s better if I’m not a medical expert.

A very astute client (writing on business) once noted that, in addition to my making proofreader’s marks (indicating more-standard punctuation, spelling, grammar), I (as an engaged reader) also write circled comments in the margins that, as Alan noted, amount to my “thinking out loud as I read”—feedback. He found that useful. I find that neither copyediting (proofreading) nor commentary are easy to do after one’s first read-through, and larger comments on structure, style, tone are very difficult to do before one has read through once; I have to do either during my read, in the moment. I cannot tell, for example, at the beginning about how many pages you will be going on that way, say in a slow and awkward manner, until I can see where you eventually free up and write more easily. Perhaps there are editors who can, but in 30 years such foreknowledge has not been my experience. And may I just note that it is particularly hard to proofread your own writing, because you tend to hear in your mind what you intended to write, not what you did write. And if you need to submit 250 words

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but for the life of you cannot see where to chop from the 700 you've produced, ask an editor who is used to writing abstracts (as in a Reader's Digest Condensation, where sometimes the author can't find what was left out, because it's in the phrasing, not the content).

Not only are there personal and affiliate differences in editors, there are also differences in their backgrounds. As a writer, you don't have much say about the credentials of an editor (be they slush-pile screener, copyeditor, or commissioning bigwig) for a periodical or publishing house, who represents that publisher's view of what and how you should write. I have seen writers with world-wide eminence in their field hurry to damp-down their prose because one of these house-reps frowned at it. That doesn't mean the reps know best all around. I just heard that J.K. Rowling was turned down by 12 different publishing houses before she sold the first of her Harry Potter books. Dr. Seuss had 300 refusals. Publishing houses may know what's in their best interests (or not), but what they advise may not be best for your book or style.

### How editors edit

If an editor represents a publishing house, a particular professional journal, or a more broadly popular magazine (e.g. *Field and Stream*), he or she will edit not only to conform articles to their house-style but also to what those specific readers expect in content, and often to what the editor-in-chief has outlined as a theme or variety for a particular issue, book, or series. If your piece does not meet their needs in content, they will not publish it, even if you write like Shakespeare. If they publish sci-fi and you send them a how-to, forget it.

Editors who choose writings to fit into the catalog of other books or articles published by their publishing house or magazine are sometimes called "commissioning editors," and they may also be, or they may report to, an editor-in-chief or a divisional chief. At large publishing houses there may also be managing or operational editors (who may not deal directly with writers), and there at least used to be copyeditors who conform writers' styles and the lengths of manuscripts to the house preferences, which vary from house to house and between American and British style, in punctuation, spelling, vocabulary, and format. Nowadays all too many publishers (even large old houses) "farm out" every function to outside contractors, and I wince when I read pages obviously not graced with any copyediting at all. I once read a comment [in brackets] meant for the author from a reviewer—but it stuck there into print. Sigh.

Authors often expect editors to wrench their writing mercilessly from phrasings they earnestly chose, into lifeless cardboard prose. Very often editors intend no such thing (I like to see a quirky voice come through, and heaven forbid I should squelch a budding e.e.cummings or James Joyce, if I can avoid doing that). Sometimes editors do understand that the wishes of their boss, the owner of the publication, or their audience do require rigorous standardizations in voice, for whatever reasons. But I am not convinced that the lively, enthusiastic introduction I recently reviewed, written by the commissioning editor of a medical compendium, needed the revision her colleague suggested, that made it into the passive-voiced, impersonal prose one does require of articles in refereed medical journals, where that tone does serve to help ensure scientific objectivity. In an introduction, I want to be enticed by enthusiasm. Why not?

That introduction was written by a co-founder of the 6000-physician organization who was publishing that compendium. She teaches in a large medical school and is a leader in her field. Even so, the habit of sedate scientific prose is very ingrained, and she questioned herself. As for younger, less-sure scientists, my editing of their doctoral theses (sometimes suggested by their reading committee, who should not be expected to wade through awkward punctuation and grammar) has met with squawks nigh unto tar-and-feathering me for suggesting that they standardize the jargon they use orally in their lab, into printed English that can be followed by someone in Malaysia who learned English from a textbook. The young about-to-be Ph.D.s insist that "that's the way we talk; you wouldn't understand, and we do." One even insisted that I return to her writing all the incorrect adverbs I had removed. Yeeees, those five people in your lab already understand you, but if you only want to communicate with those five people, why are you publishing? A thesis should not be merely an initiation to a fraternal handshake, although it sometimes is also that. It should put onto the intellectual market the ideas you have researched, in a manner that makes your ideas clear to those who have not already been thinking along those lines.

### Freelance editing

Because I am a freelance editor, I do not have the "clout" that would automatically halo my comments on any paper run past me for comment (although when one's thesis-reading committee suggests getting my aid, or one's mentor on the faculty suggests it, I do gain their clout). Normally I have to defend my editorial suggestions with citations from arbiters in that field (the *American*

*Medical Association's Manual for Authors and Editors*, the *Chicago Manual of Style*, the Harcourt Brace textbook of grammar, a dictionary of the latest terms in molecular biochemistry—whatever does it). And I give new clients a “cheat-sheet” with nuggets of the principles on which I say “comma here, not there” and “you should make shorter paragraphs, perhaps here.” When I say these principles in advance, in writing, they can see that I am not being any more arbitrary when I apply them to their page with my green pen than anyone would be. If they wish, I also supply my resumé (which includes five years of graduate study of English, including a stint as an assistant to an editor of an Oxford edition, and 30 years of editing authors in academic, business, and medical circles). Since most of my clients have been referred to me by someone they know whom I have edited (often for years, and often they are eminent), then that referral serves as the new writer's reassurance they can listen to me.

But a great many writers, especially those who are new to it, see writing as some kind of awesome sanctum of “those who know,” and they don't want to hire an editor for their opus. So they ask a colleague (who, if he/she's good, already has a desk-full of her/his own), who can likely give them feedback on the content but cannot be expected to be expert in untangling garbled passages. Those colleagues, or their publishers, pay editors to do that for their own work. And sometimes a new author will “just ask Great

Aunt Minnie, who reads a lot—to just take a look at it, and let me know where to cut.” Your Aunt may be inclined to like your opinions, but she may not have a lot of skills or experience to help you smooth your writing or aim at that audience. And you have to remember that a read-through of any kind, through say 50 double-spaced pages (they should always be double-spaced, to leave room for readers' marks) is going to take at least as long as it takes anyone simply to read it, from one end to the other, even when they don't make comments. Add to that time for their making suggestions in pen.

So, an editor is anyone who reads and makes suggestions about the style, structure, audience, tone, or other things in your writing. If you have had someone do this “in general” before you choose a publishing house, you might find that the publishing house may re-do a great deal of that, if it does not conform to their own needs, whether or not they thereby make your piece better. It may, however, be a good idea anyway to have it edited early-on, if you feel your writing does not have a clear idea of audience, or seems too long or too short, or seems to be unclear or tangled in some sentences. And do not be like the painter tempted to sneak into the exhibition hall to add “just one more dab, here, on his painting.” Once it's out, it's out. Move on.

*Ginny Hansen has been a freelance authors' editor of scholarly works and some fiction, for 30 years.*

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## Save the World

*by Phillip Dahlen*

**G**lobal warming is most likely occurring, and just about everyone agrees that it is a serious problem. It is primarily the result of the release of excess carbon dioxide into the atmosphere. To stop global warming, it will be necessary to not only stop a future increase in carbon dioxide, the trend must be reversed. It can only be reversed by using vegetation to absorb carbon dioxide from the atmosphere, and retaining carbon in a solid form. Using vegetation to provide fuel reduces the amount of carbon stored. It also reduces the amount of food available for eating. To reverse global warming, we must use other mediums for providing our energy.

Many possible solutions have been suggested, but there are problems. Nuclear fission (uranium fission) is currently used to provide power, but the resulting radioactive waste must be stored for thousands of years. Nuclear fusion (hydrogen fusion) would be a great future source of power. There need not be any radioactive waste. But, global warming is a

current problem that cannot wait for us to figure out how to use this potential energy source.

Thermo wells are a wonderful source of energy. They do not pollute and they provide a continual source of power. But there are not many places where you can dig these wells.

The book *\$20 per Gallon: How the Inevitable Rising Cost of Gas Will Change Our Lives for the Better* by Christopher Steiner tells how we would likely reduce pollution and conserve energy if the cost of gasoline was increased to \$20 per gallon. The results would be beneficial and reduce the rate at which the planet became warmer. But, as long as gasoline and other hydrocarbons are used as a fuel, our planet will continue to get warmer.

But the book does offer a solution—the use of windmills to produce hydrogen and ammonia as our fuel of the

*continued on page 4*

*Save the World, continued from page 3*

future. This solution utilizes existing and well tested technologies.

The book reports the work of Steve Gruhn, who is the president and cofounder of Freedom Fertilizer. It was started in Spirit Lake, Iowa, in February 2008. (pages 182 and 183)

“In 1910 German chemist Fritz Haber patented a method using high temperatures and extreme pressures to bond hydrogen atoms with nitrogen from the atmosphere. Soon thereafter, Carl Bosch, working for the German chemical company BASF, commercialized the process, making it applicable on a massive scale.” (page 191)

“But if those turbines were supplying power for electrolysis to create ammonia using the conventional Haber-Bosch process, the returns could be greater [than selling electricity to a grid]. Gruhn can make 2.72 tons of ammonia per day per megawatt of wind power.” (page 195)

“Precedent exists for vehicles being propelled by ammonia. In World War II, the Nazis, desperate for fuel to keep their war machine churning, stripped Belgium of all of its gasoline stores and resources. Belgians, trying to keep Brussels running as it did before its occupation, converted the city’s buses to run on ammonia. ‘We can make ammonia fuel for about the equivalent of three-dollar-a-gallon diesel fuel,’ Gruhn points out.” (page 197)

### **Giant wind turbines**

We should construct giant wind turbines (windmills) in the Gulf of Mexico, Atlantic Ocean, and Pacific Ocean. These windmills would use the energy of the wind, nitrogen in the air, and sea water to produce ammonia and oxygen. The ammonia could be transported to the shore through underwater pipe lines or with giant tankers. We could distribute ammonia across the country in the same manner that we currently distribute oil. We might even use some of the same pipes.

Wind turbines should also be constructed in these locations to use the energy of the wind and sea water to produce hydrogen and oxygen. We could distribute hydrogen across the country in the same manner that we currently distribute natural gas. And again, we might even use some of the same pipes.

Since the wind turbines would provide the continent with ammonia and hydrogen, rather than serving as a direct source of electrical energy, there would be no need to be concerned when the wind comes in gusts—rotating the turbines rapidly at times and not at others.

Besides providing our country with an abundance of non-

polluting energy, ammonia would fertilize our crops, and supply pure water in otherwise arid parts of our country. Hydrogen would also provide our country with an abundance of non-polluting energy, and supply pure water in otherwise arid places.

Ammonia would be used primarily for powering vehicles— ships, trains, trucks, cars, and airplanes. It takes less energy to produce hydrogen, which would be used for other applications. We may continue to construct local windmills and photo-voltaic power sources, but use ammonia and hydrogen to provide power when there is no wind or sunlight.

Although turbines out in the ocean could provide the power for producing ammonia and hydrogen, there are also other sources of power—tides and waves. Giant bellows, the size of many baseball fields, may rise and fall with the tides, inhaling and exhaling air or filtered water that rotates turbines. Floats might also rise and fall with waves or surf to pump air or filtered water to turbines.

This old technology can be harnessed to fight global warming and provide our nation and the world with an abundance of clean energy. Using this technology, we would have no need to import fuel from other countries. We might instead export fuel and the hardware required for producing it. There would be no need to release carbon in the air when burning fuel, or produce nuclear wastes that must be safely stored for thousands of years.

Converting to other energy sources is going to cost money. But would you rather save money or save our planet?

Unlike other articles in this publication, this article is not copywrited. Feel free to copy it and send it to others for publication. Please do what you can to discontinue the burning of hydrocarbons for energy. Now is the time to act if we are going to save the world from global warming.

*Phillip Dahlen graduated from Hamline University in 1959 with a B.S. degree in physics. He holds patents in the U.S. and abroad for an optical phonograph, prior to the development of the CD player. He is the author of the book Semiconductors From A to Z published in the U.S., Great Britain, and Spain. He is the former editor of Electronic Technician/Dealer magazine for the consumer-electronics industry and a former technical writer documenting primarily software. He currently leads a digital photography special interest group.*

# Join Thoreau on an Historical Boat Trip June 18, 2011

by Dale Schwie

The Thoreau Society and the Bloomington Historical Society will commemorate the 150th Anniversary of Henry David Thoreau's month-long visit to Minnesota with a chartered boat trip June 18, 2011.

The year 2011 is the 150th anniversary of Henry David Thoreau's month long visit to Minnesota. To commemorate this event, the Concord, Massachusetts, based Thoreau Society and the Bloomington Historical Society are sponsoring a paddlewheel boat cruise up the Minnesota River on the Jonathan Padelford riverboat. This living history cruise will take place Saturday June 18, 2011. Among the passengers will be actors portraying Henry David Thoreau and Governor Alexander Ramsey. Also on board will be an historian and a naturalist who will recount the history of the Minnesota River and life along its banks as it was in 1861.

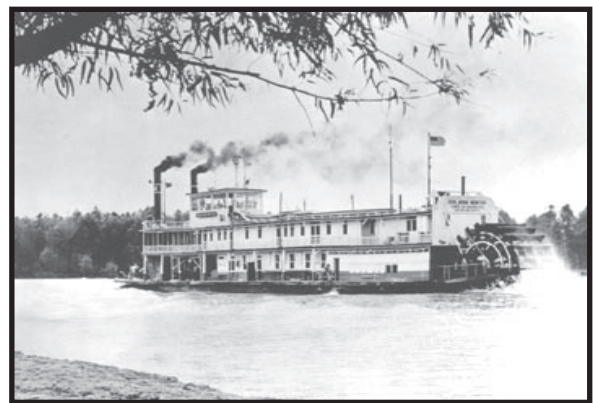
Thoreau was in Minnesota from May 26 through June 26, 1861. During that time he and his traveling companion, Horace Mann, Jr., explored the areas around Minneapolis, St. Anthony, Minnehaha Falls, Fort Snelling, and St. Paul. For ten days they stayed at a boarding house located between Lake Calhoun and Lake Harriet. Red Wing was their last stop in Minnesota. There they climbed Barn Bluff and explored the other bluffs behind the town.

The Minnesota River has been chosen as the focal point of the commemoration not only because Thoreau participated in a paddlewheel boat cruise up the river from St. Paul to the Lower Sioux Agency, but also because today the Minnesota River Valley best represents the natural environment that Thoreau believed worthy of preservation.

In a June 25, 1861, letter to his friend Franklin B. Sanborn, Thoreau described the Minnesota River with these words: "It is eminently the river of Minnesota, for she shares the Mississippi with Wisconsin, and it is of incalculable value to her." This value has long been recognized by organizations working to preserve the Minnesota River Valley. The work of the Friends of the Minnesota Valley, Minnesota Valley National Wildlife Refuge, Audubon, Nye Center and other organizations exemplify what Thoreau would call "sensible acts," acts that could be considered unofficial living monuments to Thoreau and his advocacy of "Wildness," wherein for Thoreau is the preservation of the world. Thoreau wasn't in favor of statues; he didn't think anyone should take up any more space in this world after they were dead, and he thought stones were better left in

place used for monuments to perpetuate the memories of nations and men. "One sensitive act," he wrote, "will be more memorable than a monument as high as the moon." *HDT Journal, June 26, 1852*

This Minnesota River cruise commemorates Thoreau's Minnesota visit, and the preservation of the Minnesota River Valley honors his memory; this is a fitting tribute to Thoreau who, Edward O. Wilson wrote, can rightfully be called "...the father of environmentalism," and one who also "...deserves iconic status in the scientific fields of ecology



and biodiversity studies. With the overdue rapid upsurge in public attention to all three of these domains, the study of the Concord Master naturalist and preservation of his memory becomes all the more important in history."

The tour will take place Saturday June 18, from 11:30 am to 4 p.m.. The check in begins at 11 a.m. at the Padelford River Boats on Harriet Island in Saint Paul. Tickets at \$25 a person may be purchased from the Bloomington Historical Society, 1800 West Old Shakopee Road, Bloomington MN 55431. A form listing this information is on the back cover of this publication.

*Dale Schwie is a member of the Thoreau Society and is currently serving his second term on the Board of Directors. Board members are required to attend two Board meetings per year in Concord, Massachusetts. One of the Thoreau Society's missions is to stimulate interest in and foster education about Thoreau's life, works, legacy and his place in his world and in ours. As a Minnesota member, Dale has supported this mission by presenting and organizing over fifty Thoreau programs throughout the state. The year 2011, the 150th anniversary of Thoreau's visit to Minnesota, presents another opportunity to carry out the mission. A paddlewheel boat cruise up the Minnesota River was chosen to commemorate the event.*

## **The Dead Sea Scrolls**

### **September 25, 2010**

About twenty interested people gathered to hear Joe Imholte, Project Manager for the Minnesota Science Museum, speak on “The Dead Sea Scrolls—Words That Changed the World.” He indicated that the exhibition at the Science Museum that ran from March 12 through October 24, 2010 was a rare opportunity to see and learn what the Dead Sea Scrolls were and how they have affected the “religions of the book”: Judaism, Christianity, and Islam.

While religion, faith, and culture endeavor to tell us what the scrolls and scripture mean, science can tell us what the scrolls are. Research, for example, tells us that the texts of the Hebrew Scriptures (the Old Testament) are surprisingly similar to those found in the many and various scrolls, which were discovered in 1947 and date from 300 B.C.E. to about 70 C.E. Yet there is much that is left to the imagination as well.

Who found the scrolls and how they found them are shrouded in desert legend. Who the community was that stored them in caves over 2000 years ago is also a matter of conjecture. Scholars have disagreed as to whether the settlement at Qumran was a religious community about 13 miles from Jerusalem; or whether it was perhaps a pottery factory, a military outpost, or even the desert villa of a wealthy person. It is not certain whether the scrolls were composed on site or were carried there from various locations and stored in caves for safety during the destructive Roman occupancy of Palestine in the first century C.E.

The scrolls themselves have a complicated history with a degree of controversy and a dash of the thriller about them. They range in size from about twenty-three feet (the Isaiah scroll, not shown in Saint Paul) to the size of a fingernail (fragments which are on display). The Dead Sea Scrolls tell not only of the biblical books, but they also report on sectarian matters (like rules for purity) and apocryphal books (like the book of Jubilee).

Imholte told an illustrated the story of the scrolls by taking the group on a virtual tour of the exhibit. He described the setting, the culture, the religious sect, and some of the political matters that surrounded the scrolls. Original artifacts like jars, inkwells, and, most importantly, scroll fragments were all on display, along with many photographs, films, and much commentary. To tour the exhibit was to get a brief experience of life in the Dead Sea area two millennia ago.

The means of preserving the scrolls is a story of some interest as well. Initially, the fragments were pressed flat under glass. But that had the effect of crushing and damaging the dry and delicate parchment. Now scholars bind them to a nylon-like fabric which more effectively preserves them and keeps them as supple as possible. And, unlike an early picture of a pensive scholar hunched over his desk, smoking is no longer allowed in the scrolls’ presence. Comparison photos showed how infra- red imagery is needed to make legible the time-worn fragments. Because the scrolls on display were allowed to be exposed to the light for only 865 hours, three separate sets of scrolls were installed during the course of the exhibit at the Science Museum.

As part of his informative presentation on the scrolls, Imholte described and showed pictures of a companion exhibit on the St. John’s Bible. This modern effort, he claimed, is in continuity with the scribes at Qumran from long ago. Further, he mentioned that the exhibition is the largest in the history of the Science Museum, eclipsing the size of the Pompeii and Titanic exhibits from the recent past. However, the forthcoming King Tut exhibit will be even larger than the groundbreaking show of scrolls. In the end, though, it is not the size of the exhibit that matters. It is the size of the impact that the exhibit makes on inquiring minds. In this sense, then, the Dead Sea Scrolls might rightly be described as words that changed the world.

*Robert Brusic*

## **Health Insurance**

### **October 30, 2010**

The regular MISF meeting on October 30 gave Lee Wenzel, author of an article in the last issue of the Forum (“Yes, But Is It Health Insurance?” September 2010) a chance to expand on his thesis that we need to change the way we think about health insurance. He made his point by describing how insurance works. In actuarial terms, insurance is a policy against an unpredictable loss with a premium related to the size and risk of the loss. Insurance is purchased against events that are beyond the control of the insured or the insurer. An insurance loss can be objectively verified and legally defined. In addition an insurance company can expect to cover certain administrative costs out of its profits. It is also important to remember that all insurance companies operate to make a profit, generally about 30% of their revenue.

Insurance language does not generally refer to achieving

goals, prevention, controllable or everyday events, or outcomes.

Yet our current understanding of health insurance encompasses these latter ideas. In effect what we call health insurance (except in the cases of those who self-insure with very high deductibles) is in fact entitlement; we expect that the holder of the policy is entitled to a certain level of health care, which encompasses certain outcomes and achieves some goals. We also expect health insurance to pay for prevention and everyday medicine.

If the paradigm of insurance is to protect against an unpredictable loss, then it is apparent that the insurance paradigm is not correct for matters dealing with health, where the concern is generally with maintenance, treatment, and ongoing care. In fact, under most “insurance” plans, it is easier to get payment for acute care than for chronic care. Furthermore, under the “insurance” paradigm there is no incentive to find a cure. Because we are using the “insurance” model to pay for health, we are not investing in research, public health, or really treating chronic health problems.

Wenzel feels that it would be better if we recognized that we are running an entitlement system and called it that. In an ideal system, the consumer of medical services would deal directly with the provider, rather than working through a third party (the insurance company.) Then we would be looking at outcomes rather than payments.

Wenzel pointed out that whatever system we set up, we would still have to have a mechanism (bureaucracy) for adjudicating the payment of bills, but pointed out that Medicare (an established entitlement program) actually operates at a high level of efficiency.

Wenzel had hoped to have the group brainstorm about some questions involving health care. He proposed the following questions: Do you think the adequacy of acute care services exceeds that for chronic conditions and is this discrepancy driven by the frame work of insurance payments? How does it matter if we use insurance terminology and concepts when we are not really talking about insurance? What economic paradigm would work for financing medical and healthcare services? What would it take to move the system toward a better mechanism of finance?

Unfortunately, the meeting was over before we could reflect on these questions.

## Reflections on the 2010 Election November 27, 2010

Eric Black, a veteran political reporter and now an on-line journalist, addressed the November meeting of MISE. His topic was putting the 2010 election into historical context and offer some thoughts on the political process in general.

The first thing Black did was to point out that parties that win big in Presidential elections often lose pretty big in the midterm elections. Even though the current Democrats lost 63 seats in the House, Grover Cleveland’s loss in 1894 was bigger—125 House seats. The 2010 loss was, however, the second biggest loss in a recent Congress. Roosevelt lost 72 seats in the 1938 election, although the Democrats retained control of the both the House and the Senate. Forty seats is about the average loss in a midterm election.

While we are in a period where the control of the House seems to shift back and forth, Black does blame the Democrats for not making compromises while they were in power. Basically, the Democrats say we won’t drop programs and the Republicans say we won’t raise taxes—and no one is able to bridge the gap.

Nevertheless, Black was not convinced that the election results were a response to campaign rhetoric. Rather he felt that the election was decided by lack of voter enthusiasm. Essentially those people who had elected Obama (many first-time voters for example) just did not feel strongly enough about the issues to come out to vote again. On the other hand, conservative Republicans were able to maintain momentum.

Republicans, and the Tea Party in particular, were very successful in encapsulating their message as Freedom, Liberty, and the Constitution. This abbreviated approach worked well, since Americans in general and young voters in particular will not “sit still” for philosophical arguments. Basically, Republicans used the fear of tyranny to propel their message.

Democrats, on the other hand, were never quite able to get their message boiled down. While “Stick with us; the Republicans left a big mess; we don’t want too much deregulation” may summarize Democratic aims, these phrases do not translate into catchy campaign slogans. What happened of course was a referendum on how well the Democrats were doing in running the government and the Democrats lost.

Black went on to extend these observations to the Minnesota gubernatorial election. Mark Dayton is, of

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course, a liberal Democrat while the House and Senate majorities are Republican. Black feared that we will have a budget standoff and wondered how Dayton could get leverage.

The central problem that Black saw both in national and in state politics is that political parties seem to have lost the ability to compromise. The Tea Party in particular came in for his criticism as “a populist party who are concerned, but cannot give up on ‘no new taxes.’”

Black’s radical solution would be to have a unicameral house, with something like a Prime Minister who could be voted out in a referendum.

## The Bohr-Einstein Debates January 15, 2011

Dr. Richard Fuller addressed the January meeting of MISF on the subject of the Bohr-Einstein debates. In the synopsis provided by Fuller at the beginning of the meeting he explained that the “core issue between Bohr and Einstein was the nature of reality described by the theory.” For Einstein (1879-1955), a great statistical physicist and a firm advocate of causality, there had to be a physical reality underlying the observed data. For Bohr (1885-1962), a revolutionary, the nature of reality was ultimately and only determined by the observed data.

The first step to Quantum Theory came from trying to explain the spectrum of radiation from heated objects. In 1902 Max Planck showed that measurements could be explained by assuming energy can “only be absorbed in discrete packets” which he called “quanta.” The idea is that there is a quantity of energy (sometimes symbolized  $h$ ) whose value is fundamentally indivisible. From that hypothesis other physicists went on to propose a model in which fundamental particles could only occupy states that are consistent with quantum energy changes, though a particle can be thought of as being in a mixture of states simultaneously. The probability that a particle is in a specific state is determined by its “wave function.” The idea of probability as a fundamental aspect of reality poses a challenge to the certainties of Einsteinian physics.

This dichotomy came to a head at the 1927 Solvay/Copenhagen Conference when Bohr accepted the Heisenberg uncertainty principle (that is, you cannot know the exact position *and* the momentum of a particle at the same time). At that conference, Bohr said that probabilities would satisfy laws of conservation in physics. Most young physicists agreed with Bohr, but Einstein insisted that

in principle you could know everything. In effect, Bohr felt that the Uncertainty Principle validated his point of view—that probability brought his observations into line with laws of physics. Einstein felt that the inconsistencies were faults of measurement—that the laws of physics would hold true only if everything was knowable.

During the Copenhagen debates, Einstein proposed a series of thought (gedanken) experiments in which he would set up a problem that would demonstrate that the Uncertainty Principle was not correct. In each case, Bohr showed that Einstein’s argument had a loophole. In one instance, Bohr showed that Einstein’s argument had forgotten about relativity. Fuller’s interpretation was that paradoxically, Einstein had suggested relativity, but wanted absolute language.

Today, much of physics assumes the Uncertainty Principle and Quantum Theory, but the Bohr-Einstein debate is still at the center of the discussion. The debate is really about how much we can know. Are there objective laws that we can observe or is reality only determined by our experiments on it?

Twenty-first century physics has gone beyond even this thought, as questions from the audience showed. One new idea is that quantum systems are interconnected in the universe. In addition, people are now looking for other variables, such as consciousness, in research. (Fuller remarked that “consciousness” was not even considered when the debates began in 1927.) Physicists are now considering philosophical questions about knowability and uncertainty. In effect, the Bohr-Einstein debates opened up many questions, but we are today just as confused as we were 70 some years ago.

Dr. Fuller, now retired from Gustavus-Adolphus, specifically recommended *Introducing Quantum Theory* by J.P. McEvoy and Oscar Zarate (Totem Books, 1996) as an excellent non-technical introduction to Quantum Theory. This book is available in local bookstores.

Bill McTeer

### Answers to quiz on page 9

1. b. About 1 percent; 2. a. About 1/100 of 1 percent; 3. b. The ground; 4. b. About 20 percent; 5. b. 40 percent; 6. d. 73 percent; 7. a. The Mississippi; 8. c. About 1.5 trillion gallons; 9. a. Cooling electrical power plants; 10. b. Suburbanites; 11. a. Banning most uses of the Mt. Simon-Hinckley aquifer beneath the Twin Cities and b. Phasing out once-through air conditioners that use ground water to cool air



## The Fresh Water Society February 19, 2011

The Freshwater Society, a Minnesota organization, is the only organization in the United States dedicated to the study of fresh water. The purpose of the Freshwater Society is to inspire people to value, conserve, and protect fresh water. Pat Sweeney of the Freshwater Society addressed the February 19 meeting of the Independent Scholars.

The FWS publishes the *Minnesota Weatherguide Environmental Calendar*, runs a Road Salt Symposium, sponsors the Water is Life art contest for grades 7-12, and maintains a blog at <freshwatersocietyblog.org>. This blog reports information about water issues all over the country and the world. The blog is updated and maintained by Pat Sweeney.

Sweeney introduced his talk with a quiz. This quiz and its answers are a good summary of his conversation with us. For those who want to take the quiz, the answers appear on page 8. Only three of those attending on February 19 had even six correct answers—indicating that most of us are not as aware as we should be of water facts and threats.

1. What percent of all the water on the earth is accessible and drinkable?
  - a. Less than 1/10 of 1 percent
  - b. About 1 percent
  - c. About 5 percent
  - d. About 10 percent
2. Lakes and rivers account for what portion of the world's fresh water?
  - a. About 1/100 of 1 percent
  - b. About 1 percent
  - c. About 2.5 percent
3. Where is there more water?
  - a. The atmosphere
  - b. The ground
4. What percent of Minnesota's lakes and rivers have been assessed to determine if they are polluted?
  - a. Less than 5 percent
  - b. About 20 percent
  - c. 100 percent
5. Of those, how many are polluted?
  - a. 20 percent
  - b. 40 percent
  - c. 53.2 percent
6. What percent of male smallmouth bass in the Mississippi River at Lake City show signs of "intersex," mostly female egg cells?
  - a. 5 percent

- b. 22 percent
- c. 56 percent
- d. 73 percent

7. Where does Minneapolis drinking water come from?
  - a. The Mississippi
  - b. Wells in southeast Minneapolis
  - c. Both
8. How much water do Minnesota individuals, farms, businesses and utilities use in a year?
  - a. About 10 billion gallons
  - b. About 700 billion gallons
  - c. About 1.5 trillion gallons
9. What is the biggest user of that water?
  - a. Cooling electrical power plants
  - b. Mining
  - c. Irrigation on the farm
10. Which households, on average, use the most water?
  - a. Minneapolis and St. Paul residents
  - b. Suburbanites
11. What two significant conservation actions did the Legislature enact in the late 1980s?
  - a. Banning most uses of the Mt. Simon-Hinckley aquifer beneath the Twin Cities
  - b. Phasing out once-through air conditioners that use ground water to cool the air
  - c. Requiring golf courses to catch and re-use rain water
  - d. Mandating high-efficiency toilets and shower heads

Sweeney spoke while the quiz was being scored. Some important points that he made were that ground water aquifers are mostly sand and gravel (as opposed to underground lakes) and that our use of ground water is increasing faster than the population is growing. Some ground water is thousands of years old; old ground water is best, as we have many new contaminants in our water: drugs, sediments, pesticides, mercury, and run-off from streets and parking lots. Drugs are a new problem; the phenomenon of intersex fish (that is fish with abnormal reproductive organs, see question 6) may be related to endocrine-disrupters in human waste, such as hormones from birth control pills, Viagra, or over-the-counter drugs which find their way into rivers. Other products like toothpaste, laundry detergent, and soap also contain endocrine-disrupters.

Taking the quiz and reviewing the answers will make you more aware of what you do and don't know about this important resource. In addition a Water Audit on the [freshwatersociety.org](http://freshwatersociety.org) website will suggest how your household can conserve water in small ways that do add up.

## Side Effects of a Communication Revolution

We had visited Nepal annually from 2002 through 2005 to trek the Himalayan mountains. Then after ascents in Bhutan and Africa, we returned to Nepal. On all the recent ascents, we were surprised to find cell phones everywhere, from the cities to the most remote villages and wayside huts. Our guides and porters carried modern cell phones, maintaining virtually constant contact with friends and mates.

Kathmandu had undergone vast changes. Mopeds, motorbikes, and cars now proliferated with concomitant pollution. High-tech, yet loud, kerosene electric generators lined the streets, fronting nearly every small shop, in hopes of offsetting power outages that occurred two or three times a day. Shop owners carried cell phones and calculators with internet connections, some with printers and hand scanners. Currency exchange rates were available continuously. The official garb, for the 18-to-40 set, now included the ubiquitous cell or iPhone. The entire city and rural population had vaulted over land lines directly to wireless communication.

### Takeover, digital style

Additional surprises came during our return home. As we landed in Thailand's huge Bangkok (BKK) International Airport, passengers noticed large numbers of international airplanes, dark and widely distributed around the grounds. We would learn that our Thai pilot was ordered to land in Bangkok, *despite* the fact that national insurgents had over-taken the airport's entire first floor and tarmac.

We became the insurgents' unwilling guests (sans luggage, food, and rooms), and wouldn't get out of the country for another seven days. The airport takeover would eventually strand over 55,000 travelers. By noon the following day, hundreds of insurgents (all ages, all with coordinated yellow T-shirts) were milling about with the stranded travelers. Both groups were busily attending to cell phones and laptop computers: They, coordinating expressway and airport blockades; We, trying to contact US tour associates and the US consulate offices in an attempt to Get-the-H-out-of-Dodge. Bathroom lines were long, politely interspersed with patient yellow T-shirts and rumpled, sleep-deprived travelers. However, on observing the possible assembly of a bomb in a bathroom stall, we quickly left the airport. Taxis, alerted by the insurgents, were available, but it was up to "traveler guests" to figure out where to go and to assume all costs. Three days later, still stranded but in a downtown, international hotel, five of us rented a driver and van to travel 500 miles south to the international airport at Phuket. It took several more days to squeeze onto a flight to Korea and San Francisco.

### The terrorist switch and digital recovery

Arriving in San Francisco, disheveled, bearing one-way tickets and having no apparent luggage, the two of us were immediately identified visually and digitally as "individuals of interest," at the level of "probable terrorist." We were "asked" to leave the US Customs line, subjected to gas sniffers, grilled individually, and (along with our meager, dirty clothing and carry-on) minutely inspected electronically and by hand. When our explanations of the Bangkok Airport takeover, stranded luggage, and missed flights were digitally confirmed, we were released to continue our journey. Immediately upon arrival in Minneapolis/St. Paul a digital request for lost luggage was submitted. One week later, all of our luggage, including the unwieldy and smelly trekking gear, arrived safely at our door.

It was an enlightening, but not overly restful, digital vacation...

David Juncker

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## Editor's Note: On revolutions, digital and otherwise

The Web is changing constantly, which is why we keep looking at it. Anyone who decides to comment on the internet has to be flexible too. This article, for example, has been rewritten at least four times since the beginning of February

It began with a conversation with George Anderson, past president of the Scholars, about the effect of cell phones and smart phones in today's politics. Of course, we were thinking about Egypt and northern Africa where it appeared that one government (Tunisia) was toppled by digital networking: a local fruit dealer in an obscure city set himself on fire as a protest and the story spread by Facebook. Egypt was likewise being radically altered in a way that might have been unimaginable without the Web.

Anderson's points were that ubiquitous cell phones (see also David Juncker's article on the preceding page) may be an important tool in organizing citizens and political networks. It appears that governments also see this point and try to control cell-phone networks, especially when they feel that dissidents are using them. A second point that Anderson made was that radicals on both ends of the spectrum in any situation (revolutionary or not) are those who are making the most noise, without necessarily saying much. So George's questions were: Do Internet/Twitter/Facebook bring a new face to a revolution? And was there any way to muzzle the extremists?

Events in Egypt do indeed make it seem that the internet is a new tool for revolutionaries—useful in planning, coordinating, and fomenting. According to a NYT article, February 6, the catalyst for the Egyptian uprising was the murder of Khaled Said by two plainclothes policemen, after he posted an *online* video showing them dealing drugs. The police in Egypt are known to be corrupt and brutal, but within five days of Mr. Said's murder, an anonymous activist had created a *Facebook* page documenting the beating and Said's death. (*Italics mine*) This page was the biggest dissident Facebook page in Egypt with more than 473,000 users. It was from this page that the protests were launched on January 25. (My first editorial ended here.)

While it is clear that the revolution in Egypt was organized through some kind of connectivity that perhaps speeded up the process, the Committees of Correspondence in the American Revolution performed much the same function; they just didn't do it quite so fast. Even a "viral" revolution still needs to have a leader and an organization to succeed: overwhelming force (as recently in Libya) can stop it at

least for a while. So, while I think the political process is and always has been influenced by the media—newspapers, TV, the Internet, and now social networking sites—I am reluctant to say that social networking has changed anything other than the speed with which things happen. (My second attempt ended here.)

oOo

As to the other question—how can we muzzle extremists?—we have here a dilemma. If Mubarak had been successful in silencing his "internet extremists," he might still be in office. Mostly we agree that we did not want that. If we support free speech in Egypt, then certainly we must support it here.

This thinking brings me to the recent Supreme Court decision about Westboro Baptist Church—that free speech means free speech (although the Court also ruled that municipalities are free to set whatever rule they like about how far the Baptists are from what they are protesting). As if on cue, the *Star Tribune* editorial page, March 20, 2011 (Online Comments: A tricky balance) ran an article about the *STrib* website and its online comment feature. In order to control general snarkiness and personal attacks, the *Star-Tribune* has gradually come to a fully moderated (that is, everything read by an editor before it is posted) page. While this pre-selecting has slowed down the process of posting comments, it has had the effect of raising the quality of the discourse (because people have thought about what they are saying rather than firing off insults) and of letting some new people join the discussion.

This observation should not be taken to mean that all political commentary should be moderated by an editor (as if that were possible). Rather I think it means that all of us need to read, listen, and think before we speak. And those of us who do not ordinarily speak should try to be something more than the silent majority—because usually we do have something to say.

Keeping things civil, which was pretty much the case in Egypt, is a responsibility we all share both in listening and in speaking. But I don't think we can tone down the volume without toning down free speech. (Third version ended here.)

Now the NYT reports that China censors and stops anything that hints of protest, even the quoting of Shakespeare—Me thinks the lady doth protest...

As I said, the Web changes constantly.

Lucy Brusica <lucy@brusic.net>

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