Peripheral Vision

Meredith Tromble

I could count on my toes the number of times science was mentioned in my formal education as an artist, and to get past one foot I'd have to count a little surface anatomy. Few people in our culture would find this situation odd; the American Heritage Dictionary even defines "art" in opposition to "science," as a "nonscientific branch of learning." But do art and science truly constitute a polarity? Is scientific practice necessarily distinct from artistic practice? As we practice them, Art and Science are ways of looking at the world characteristic of modernity. Might they give way to a hybrid practice joining analytical and intuitive inquiry?

The oppositional definition of art and science—a variation of which appears in almost every contemporary English dictionary—suggests a cultural blind spot. Either/or constructions betraying a cultural emphasis on duality are embedded everywhere in our language, according to linguist Deborah Tannen. Many of our metaphors configure complex situations as conflicts between two sides: "the culture wars," "the battle of the sexes." But interpreting the world in dualities obscures useful nuances. For example, in a discussion, you might agree with two of my points, have no opinion on one, and strongly disagree with another. If you categorize my opinion as "right" or "wrong" the discussion is over; if we delve into the complexities and ambiguities of our positions there is scope for negotiation and creative interaction. Following Tannen's cue, we might ask if, in dividing our investigations of the world into "art" and "science," we've limited our ability to solve our problems.

Since we grew up with the categories of art and science we assume they've always been there, but historically they are recent notions. Deep structural changes in the way we conceptualize our investigations and responses to the world can be traced through language and through the history of universities, according to cultural historian Larry Shiner. In *The Invention of Art*, Shiner points out that the Latin word from which art is derived originally referred to an array of skilled activities that ranged from sculpting to horseshoeing to bonesetting. As institutions to create and transmit culture evolved, subjects were associated in ways that seem strange today. Rhetoric, painting and mathematics worked hand in hand. Gradually the modern notion of art as expressive, imaginative and subjective evolved, along with the assigned scope of other subjects.

The power of our systems of classification to shape our thoughts comes through clearly in histories such as Shiner's. James Elkins's fascinating volume *What Painting Is* reports on another aspect of this history—the development of science from alchemy. Before systems of naming and measurement (such as the periodic table of elements) were conceptualized, very different connections between materials were considered. For example, lead might be seen as being just as much like wax as like iron, considered from the viewpoint of malleability. Material, mythical, and ethical associations commingled in the understanding of different substances. Focusing on the material world clarified the investigation and had great practical advantages. It also walled science off from emotional and social implications, categorizing them as "not science."

Science journalist John Gribben has remarked that the practice of science involves knowing more and more about less and less. As in other aspects of life, the dangers of close focus lie in losing sight of the big picture. Staring at a crack in the pavement, we don't see the semi barreling towards the intersection. Nowhere is this more apparent than in contemporary biology. Geneticists who thought they could depend on Francis Crick's "central dogma," that DNA determined hereditary traits, are now discovering a host of other processes, such as protein folding and splicing, that modify gene expression. One gene, therefore, may result in thousands of different biologically active substances. Genetic engineers began to "rewrite" biology thinking they were working with a four-letter alphabet they could read; now other "alphabets" are being discovered. (For an accessible, more detailed account of these discoveries and their import for bioengineering, see Barry Commoner's "Unraveling the DNA Myth" in the February 2002 *Harpers*.) One can be enthusiastic about the discoveries of genetics and still be scared witless by their blundering application. If ever there were a time for stepping back to see the big picture, this is it.

Not that I think art can save us from the hubris of science; not without changing both fields beyond recognition. It's not that artists are "wise" and scientists are "foolish," it's that there are two points of view that are not meeting in a more informed third view. Just as emotional and social knowledge are regarded as "not science," material knowledge is often regarded as "not art." Artists usually have little education in science and are sometimes lazy about making sure their work is consistent with facts—or inconsistent with them in a meaningful way. Back to the traffic metaphor, yelling about the truck barreling towards the intersection while neglecting to notice the crack in the pavement may result in tripping on the crack and falling in front of the truck.

The beginnings of a disciplined, unified practice that focuses on the world, approaching it with both science and art, are discernible in works by artists such as Shawn Brixey, Felice Frankel, Natalie Jeremijenko, John Roloff and Gail Wight. They all happen to have a richer, broader education than is required of most art students. Brixey and Jeremijenko have degrees in both science and art, Frankel trained primarily as a scientist, Roloff taught himself geology, and Wight participated in a pioneering art and technology program as an undergraduate.

The notion that familiarity with science is important for artists is not new—the program information written for Yale College of Art says that "For all students, being educated means developing a broad view of what science is, what it has achieved, and what it might continue to achieve—Only by studying a science can one develop the critical faculties that educated citizens need: an ability to evaluate the opinions of 'experts,' to distinguish quackery from responsible science, and to realize which things are known and which unknown, which are knowable and which unknowable, to science."

A sampling of other respected art schools shows that they all have a minimum science requirement: California College of Arts and Crafts, Maryland Institute of Arts, Parsons School of Design, Rhode Island School of Design and the San Francisco Art Institute send students into the world with at least one three-unit class in natural sciences for a BFA. The School of the Art Institute of Chicago requires six units. But with such a limited time to communicate what is necessary to know about the whole of science, instructors are unlikely to devote much time to connecting the material with art history, theory and practice.

At a few schools, creative juxtapositions of material are beginning to surface. In "Composing Biology," my course in genetics and art at The San Francisco Art Institute, students performed simple experiments, read scientific papers, looked at related art works and created their own. It was an educational experiment for all of us; an experiment in delving into a topic from both perspectives to see what we could see. The most important effort in the class was to establish a sense of possibility with regards to such a "holistic" approach, while instilling respect for the complexities. It's much easier, and one is more likely to be "right" if one concentrates on one kind of information. Yet the challenges were exhilarating.

continued on page 28

Artweek

Volume 33 Number 8

Publisher
Kitty Spaulding

Editor-in-chief
Berin Golonu

Managing editor
Patricia Au

Previews editor
Debra Koppman

Designer
Page/Curtis

Main office
PO Box 26340
San Jose, CA 95159-6340
408-288-7555, 800-733-2916 (CA)
fax 408-288-7494
e-mail: artweek@artweek.com
Web site: http://www.artweek.com

Contributing editors:
Lois Allan, Pat Boas, Frank Cebulski, Collette Chattopadhyay, Terri Cohn, Shana Nys Dambrot, Frances DeVuono, David DiMichele, Suvan Geer, Allan Gordon, Debra Koppman, Sheila Lynch, Victoria Martin, Thomas McGovern, Barbara Morris, Harry Roche, Juan Rodriguez, Charlene Roth, Sandy Thompson, Mark Van Proyen, Mary Hull Webster, Josef Woodard

Artweek (ISSN 0004-4121) is published monthly, 10 issues per year with the July/August and December/January issues combined for $32 per year by Spaulding-Devlin, Inc. dba Artweek, 930 Pershing Ave., San Jose, CA 95126. Periodical postage paid at San Jose, CA.

POSTMASTER: Send address changes to
Artweek
PO Box 26340
San Jose, CA 95159-6340

Back issues: as available, from:
PO Box 26340
San Jose, CA 95159-6340
408-288-7555
800-733-2916 (California)
Available as microfilm and microfiche from UMI. Indexed by Art Index as of January 1979; prior years indexed by Artweek.

Readers' Forum: Artweek welcomes your comments. All letters addressed to writers and editors are considered available for publication unless noted "not for publication". Letters may be edited for reasons of space or clarity. Anonymous letters will not be published.

Statement of Ownership, Management, and Circulation
1.Title: Artweek. 2. 0846-660 3. 09/25/02 4. Monthly. 5. 10 6. $32.00 7. PO Box 26340, San Jose, CA 95159-6340, 408-288-7555. 8. Address of HQ: Same.
9. Publisher: Kitty Spaulding. Address: Same.
Editor: Berin Golonu. Same.
Managing Editor: Patricia Au Sakuma. Same.
10. Owner: Spaulding-Devlin, Inc. Same.
Kitty Spaulding
14. July/August 2002 issue

15. a.	Total # of Copies	9190	9598
b.1.	Paid/Requested	4000	3850
b.2.	Paid In-County	250	225
b.3.	Sales/Dealers	3500	4400
b.4.	Other Classes	40	43
c.	Total Paid	7790	8518
c.1.	Outside County	0	0
c.2.	In-County	0	0
c.3.	Other Classes	200	80
e.	Free Distribution	400	200
f.	Total Free	600	280
g.	Total Distribution	8310	8798
h.	Copies not dist.	800	800
i.	Total:	9190	9598
j.	Percent of paid	84.77%	88.75%

16. Publication: October 2002
17. Kitty Spaulding Publisher/Owner. 9/25/02