

only to engage with that challenge but, more pressingly, to present what it feels like to be so engaged. The novel's wondrous capaciousness allows it to take on all of these dimensions in the quest towards knowing the world.

And science and art are not quite as far removed as the so-called "two cultures" often presume. We're not plunging our fists straight into reality in pursuing the sciences, but rather modeling reality. This modeling is an imaginative work. I've always taken pleasure in Einstein's remark that if he were exceptional in anything it was as a fabulist. As fabulists, both artists and scientists not only call on their imaginations but also rely on esthetic criteria of beauty and elegance to guide them in their work.

The fact that mathematicians and scientists so often appeal to beauty or elegance often comes as a surprise to nonscientists. When I write about scientific or mathematical ideas—not just in my fiction but in works like *Incompleteness: The Proof and Paradox of Kurt Gödel*—I always try to bring out the beauty of these ideas, not only to make them more appealing and palatable to non-scientific people, but simply because, well, they are beautiful, and beauty ought to be seen and admired as widely as possible.

Writing about scientific themes in fiction naturally means creating characters who are scientists. While the artist has often been represented in art as a hero, the scientist is rarely so. I happen to believe that there is something noble about the scientific enterprise, about submitting oneself to the discipline and openness to falsification, about the often single-minded passion.

There is something lofty and inspiring in the enterprise itself, and to the extent that people honestly and steadfastly engage in that enterprise, a bit of the loftiness can't help but cling to them. "There is a grandeur in this view of life," Darwin said, allowing himself an emotional response to his theory of evolution.

And so, I would argue, there is a grandeur in the lives of those who pursue a clear-eyed scientific view. I don't mean to idealize scientists as people. Of course, I know all about the pettiness and rivalry, the childishness and egotism that stubbornly cling, along with the grandeur, to the greatest of scientists. This only makes them more interesting to me as characters, though. Their very contradictions serve as a means to learn something interesting about human nature.

Ever since I finally gave in to the story-loving side of my own nature, I've felt myself lucky to be able to help myself to scientific ideas for my themes and characters, trying to do justice to the beauty of the theories, the grandeur (and pettiness) of the lives, hoping that by doing so I can draw the two cultures just a little bit closer to one another. ■

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YOU CAN NEVER GO TEACH AGAIN

by Earle Holland

It's a quirk of human nature that, on growing old, we wish for the chance, just one last time, to do those things that brought us joy and thrills in our youth, to relive the times when we were young and strong.

For me, it would be just one more climb up a sheer rock wall, or one more jump out the door of a Huey helicopter, or climbing atop a trampoline to throw one more triple-back somersault.

With age, supposedly, comes wisdom, not to mention arthritis and limbs and joints that have seen far, far better days. So last fall, when out of the blue I was invited to return to the classroom to teach, it seemed like the proverbial trip back to younger days, an offer too good to refuse.

When I came to Ohio State University some three decades ago, I met Sharon Dunwoody, a young and all-too-energetic assistant professor of journalism. Sharon, for those not versed in the lore of American science writing, wrote the classic 1980 paper "Science Writing Inner Club" which for the first time painted a clear picture of how science writers really worked then.

Sharon taught a graduate course called Mass Media Science Reporting in what was then a fairly vibrant journalism school and, in short order, she'd invited me in to give a talk on PIO science work. Shortly thereafter, she proposed team-teaching the course the next quarter, and after that was done, dropped the bombshell that she was leaving for the University of Wisconsin. Her departing gift was a recommendation to her bosses that I begin teaching that J-609 course solo.

I spent the next nearly two decades teaching "her" course until the year 2000 when the school of journalism

Earle Holland has been the senior science PIO at Ohio State University for three decades and taught science writing for nearly 20 years.

was mutated into a school of communications and all of the adjunct instructors—most of whom were working journalists—were summarily dismissed as the curriculum swung from journalism to communications, two clearly different fields.

Those years teaching J-609 were rewarding, though physically draining, and many of the students I taught went on to good journalism careers, some in science or medical reporting. To be honest, leading classroom discussions with enthusiastic and interested students readily becomes addictive.

So when the invitation to resume teaching came, I quickly accepted. Perhaps too quickly as it turned out...

It wasn't J-609 that the school wanted taught but, instead, a relatively new course called COMM-640—Science Communications. Along with the name change, the newswriting prerequisites had vanished, as had the strong recommendation that non-journalism students should think twice before signing up.

While J-609 had always had an eclectic mix of non-J students, all had expressed a strong general interest in both the sciences and the news media. But students enrolling in COMM-640 tended to sign up just to get the five hours' credit. Only a few had any real interest in real science communications, much less science journalism.

Additionally, J-609 was a three-hour course while COMM-640 was a five-hour course. For me, that translated into teaching two two-hour lectures each week instead of one three-hour class, a fact I didn't really comprehend until I noticed myself dragging into class the fourth week of a 10-week quarter.

Nevertheless, I was teaching again, standing in front of the class and proselytizing about the profession I loved. Never mind that the writing portion of the course, which I deemed most important, had to be cut in half, and that other modes of "communication" besides journalism had had to be included. And the one-in-five of the 25 students who seemed genuinely enthusiastic eased my concerns—"the rest I can win over in time," I thought naively.

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I assembled a vast array of readings, most with the kind of "edge" that might interest college students. I arranged for working science reporters to visit class and talk the trade. There were countless examples of good science communications, and I started each class with a "what's new in science" segment to get them accustomed to linking science with "news."

The first warning sign came with a Mickey-

Mouse, throwaway essay assignment to encompass the half-dozen discussions we'd had about the challenges of science writing today. When only a third of the assignments they turned in were reasonably intelligent, I should have been seriously worried.

But I knew that the next assignment would solve all. I had used it countless times before and had always seen that spark flare in student's eyes as they grasped the way scientists reported their findings, and how we translated that into news.

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It was simple: Choose three of the four journal papers I provided and write the first four or five paragraphs as a news story reporting the "news" of the research for each. All the journal articles were readily translatable. While the students didn't know it, each had garnered considerable coverage in the news media some time ago.

To add to the value of the task, each of the three "story openings" would count as a separate assignment, so it was an easy way to solidify their grades. Moreover, we'd done virtually the same thing in class with two different journal pieces, dissecting them and determining what was news and comparing it to actual news coverage.

Piece of cake, I thought. But I was oh so wrong.

Their efforts were, with only two or three exceptions, poor at best, and their subsequent grades were chilling. One student on the verge of tears announced that she'd never, ever gotten below a C before so how could she now? Another, a rather stocky lad in the back of the room, just fumed as his face got redder and his grumbling grew louder.

That night after class, I got an e-mail from a student I considered one of my brightest, a senior in journalism whose work I had seen before and from whom I'd expected great things. She said simply that she wouldn't be back, that she hated the course and hated science—an odd comment since at the start of the quarter, she'd set her sights on a possible career in the field.

Thankfully, she agreed to meet in a couple of days to go over her work and have a frank discussion of what went wrong. As she sat there later, awash in hostile non-verbal cues, I explained that her papers suggested she'd forgotten whatever she'd learned about journalism in the past, that her papers reeked of jargon and lacked all but the slightest bit of translation.

"What the hell happened," I asked.

She finally explained that it was the science that threw her—not that it was complex, but that as science,

she thought it should be formal and less colloquial, in essence, less journalistic—more or less the exact opposite of what I had been preaching all quarter long.

For the next two hours, we dissected those journal papers and talked through the findings. Then I made her verbally “write” the stories she should have done in the first place. They were excellent, and you could hear her anxieties crumble as they fell to the floor.

At least one soul had been saved.

Most of the remaining assignments tended more to the academic than the journalistic so most of the students improved to garner acceptable grades in the end. Four or five actually excelled by the end of the quarter, and a couple of them held reasonable career hopes. Which I guess is a fair outcome, all things considered.

On the last night of the course, one of the communications school staffers came into the class to administer the proverbial SETs—the “student evaluations of teaching” that each professor gets for each course. Of the dozen students there on the last night—half the class that were enrolled—one stayed just long enough to fill out her SET form before abruptly gathering her belonging, sneering in my direction, and noisily making her exit.

Six weeks later, when the evaluations were returned to the instructors, it was easy to see which of the 12 was hers. I was, simply put, the worst instructor she had ever endured and I should never teach again! Mercifully, the remaining 11 had been as positive as she had been negative and many of them had stayed after class that last night, as if they didn’t want to leave.

That was four months ago and as yet, I haven’t heard if I’ll be asked back into the classroom. The course routinely is taught once a year so it may be too early. Then again, I may be tarnished goods, based on that one student’s tirade.

And in truth, if asked, I might not accept.

The science communications package just seems a bit too amorphous for my tastes—not nearly as clean as science journalism, to my mind. And those students who eventually began to understand were simply left hanging at the end of the course. There is no follow-up within the curriculum for them to dig deeper and learn more. And that seems a true shame.

With the public’s attention span at an all-time low, with science inappropriately influenced by politics, with an insane complexity growing in all scientific disciplines, and the demise of much of what we’ve traditionally seen as the public good of journalism, it’s hard to imagine how things will get better over time. But maybe they will.

The really good professors I have known—and there have been many—all say that reaching a single student makes all the effort worthwhile. But being a glass-half-empty kind of guy, I worry for all those lost souls who’ll miss the wonder that we see in the science. ■

IN REMEMBRANCE OF ALEX THE PARROT (1977-2007)

Alex, a parrot that could count to six, identify colors and even express frustration with repetitive scientific trials, has died after 30 years of helping researchers better understand the avian brain.

The cause of Alex’s death was unknown. The African grey parrot’s average life span is 50 years, Brandeis University scientist Irene Pepperberg said. Alex was discovered dead in his cage on Sept. 6, she said, but she waited to release the news so grieving researchers could get over the shock and talk about it.

“It’s devastating to lose an individual you’ve worked with pretty much every day for 30 years,” Pepperberg told the *Boston Globe*. “Someone was working with him eight to 12 hours every day of his life.”

Alex’s advanced language and recognition skills revolutionized the understanding of the avian brain. After Pepperberg bought Alex from an animal shop, the parrot learned enough English to identify 50 objects, seven colors, and five shapes.

He also occasionally instructed two other parrots at the lab to “talk better” if they mumbled, though it wasn’t clear whether he was simply mimicking researchers. ■

(Source: The Associated Press)

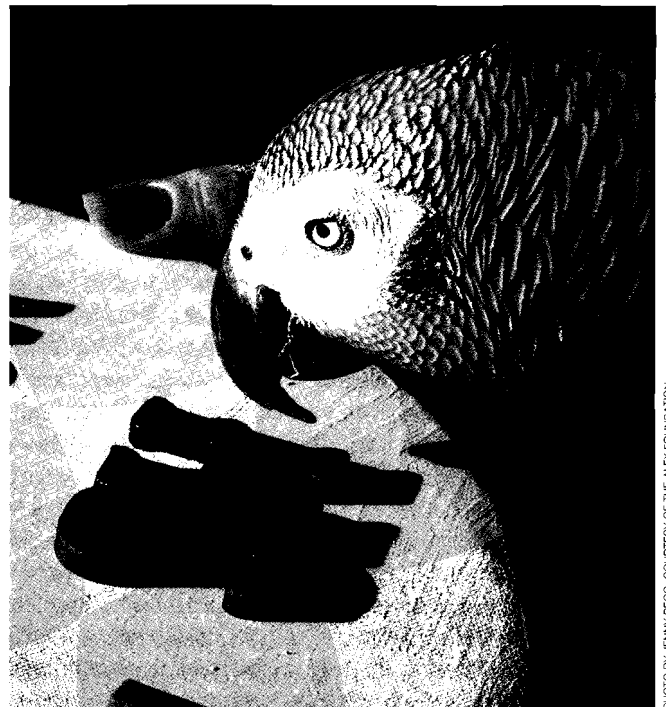


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