Careers in Virology: Science Writing and Journalism

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THE SCRIVENER’S APPRENTICESHIP: A CAREER IN SCIENCE JOURNALISM

For the past few years, researchers have struggled to develop suitably grim terminology to describe the state of the scientific labor market. The Postdococalypse, the Tenure Games, the Postdoc Holding Tank, and similar jargon all seek to impress on the listener just how bleak things are for aspiring investigators. Indeed, the situation is so bad that even mainstream news outlets have begun to cover it (1).

This angst-filled discussion has fed an inevitable rush for the exits, with graduate students and postdoctoral fellows now avidly exploring “alternative” careers. Since only a tiny minority of Ph.D.-trained scientists will ever hold a tenure track research post, the term “alternative” is a misnomer (2). However, most graduate schools and postdoctoral programs have done little to prepare students for anything else, so their most likely career paths are indeed alternatives to the jobs that they were implicitly promised when they embarked on their postgraduate training.

During this career-replanning process, students and postdocs often fantasize about becoming science journalists. This article condenses some highlights from a presentation that I have now given at several universities about the bench-to-newsroom career path. For readers who simply want a short explanation of how to parlay their hard-earned critical thinking skills from graduate school into a lucrative job in a growing industry, go to law school.

EVERYBODY’S TALKING AT THE SAME TIME

As anyone who has picked up a newspaper—or, more likely, noted its demise—should know, the media industry is currently in a crisis. Those thinking of going into journalism should understand how this unprecedented restructuring is unfolding. Through an accident of timing, I have watched most of it from the inside.

Entering the journalism business in 1997, I quickly established myself in a comfortable niche within the old media structure (Fig. 1), which had changed little since World War II. Like Gaul, the old media were divided into three parts. Print was the most prestigious, television the most profitable, and radio the most ubiquitous. For both legal and technical reasons, companies generally used and delivered those stories to the audience, an amorphous, poorly understood population generally conceptualized as “the layperson.” For most media companies, the goal was to reach the largest audience possible. Except for news outlets copying each other’s story ideas, the process was largely unidirectional. Reporters seldom felt bold enough to second-guess scientists, and the audience was permitted to speak back only in carefully vetted letters to the editor.

Then all hell broke loose. The World Wide Web, built atop the much older Internet, began to extend into the media world in the late 1990s. Media companies began to take it seriously around the turn of the century. Fifteen years later, the result is a media landscape completely unlike what came before. Besides allowing anyone to create any of the three traditional media forms, plus some entirely new ones, the Web—and technologies built for it—shattered the audience into thousands of separate niches.

The old media model was to reach the widest possible audience by publishing the most generally appealing content. The new media model is exactly the opposite; highly specialized content allows publishers and advertisers to reach small, widely scattered audiences. A radio show previously needed a geographically concentrated audience of thousands just to pay the station’s electric bill. A podcast that reaches a globally distributed audience of dozens can survive as long as its creator is willing to keep uploading it.

Figure 2 is an attempt to diagram just the science-oriented segment of this rapidly expanding universe. The old boundaries are gone. All of the remaining newspapers, and some of the major journals, have expanded their news operations to include video and audio. Not to be outdone, radio and television broadcasters now run text stories on their websites.

But the chaos goes far deeper than that. Instead of speaking to...
reporters only through their public relations offices, scientists can create and publish their own news stories directly. The Times is now in danger of being scooped not only by Nature but by researchers themselves. Even the sacred and secretive process of peer review now increasingly occurs in the open (3, 4), and a subset of the previously generic lay audience (hard-core science fans) can follow every twist and turn of the debate. Along the way, everybody talks back to everybody else, constantly. Comments are usually vetted by nothing more than automated Turing tests.

Scientific journals are also embroiled in a separate revolution as open-access publishing gains ground. Science journalists have watched this development with both joy and trepidation. It is wonderful to be able to read research papers without having to pester the primary investigators for a reprint, and the notion of making science more accessible is of course appealing to people who have made a career of explaining new research. However, the news operations of traditional journals, such as Science and Nature, are major employers of science writers. Our paychecks come from the old business model. Open-access advocates often say that they support science journalism, but so far that support has not extended to paying for it.

**THE EMPEROR’S NEWSPAPER**

The entire media ecosystem suffers from the central paradox of the Web: if the product is being given away for free, how does anyone make money? It is a great question. I do not have a great answer. Neither, as far as I can tell, does anyone in the vast and growing population of people who are paid corporate wages to think about precisely that problem. The standard answer is “advertising,” but deeper examination reveals a serious flaw: Internet advertising rates continue to plummet while business expenses continue to rise (5).

When this is pointed out, media executives and consultants quickly retreat to a more convoluted explanation, involving mining user data to develop more precisely targeted advertisements at some point in the future. These targeted ads, the story goes, will be much more valuable than the current (failing) run of Internet advertising. While this story has driven the construction of a fearsomely effective global surveillance network and drawn enormous investments from deep-pocketed speculators, it has yet to turn a substantial profit for any media company besides Google. There are sound reasons to believe that it never will (6).

This could end in a few different ways, most of which would be bad, at least in the short term, for the people who currently make a living explaining science. If this makes it sound as though the media industry is on even more tenuous footing than the academic research enterprise, then the reader is starting to get the right idea.

My own case might seem to undercut this grim view of the state of science media. After stepping out of Columbia University with a Ph.D. in microbiology in 1997, I spent a few months working as an editorial intern for Nature Biotechnology and then declared myself a freelance science journalist. Almost 2 decades later, I still have the same job, but do not be deceived. One can indeed make a living as a science journalist but only for very narrow definitions of “make a living.”

When I started this career, I was living in a rent-stabilized apartment in one of the worst, and therefore cheapest, neighborhoods in New York City. Half a decade living on a graduate student stipend had accustomed me to subsisting close to the poverty line. I was single, healthy, and had neither children nor debt. In my first year in business, my after-tax profit was just slightly above what my graduate stipend had been. Profits climbed slowly over the next few years.

Corrected for inflation, my income has fluctuated from a little under $20,000 to slightly over $75,000. Do not be too impressed by the higher number, though; it was not sustainable (7). Moreover, it is nearly impossible to predict freelancing income from one year to the next. Just a few months ago, a major client had some budget cuts and decided that they could not afford to hire writers anymore. With one e-mail, almost $10,000 of my business vanished. It is not the first time that something like that has happened to me, and most established freelancers have had similar experiences. This is a business for people with the privilege of a robust familial safety net or a well-employed spouse. I have both.

I got married in 2000. Not coincidentally, I also got health insurance that year for the first time since leaving graduate school. My wife earned an M.D. from Columbia, and we moved from New York, NY, to Philadelphia, PA, back to New York, and then to New Haven, CT, as she did residencies and a fellowship. Portability is one of the great benefits of freelance work. My income equaled or exceeded hers during those years; medical residents are not well paid.

The portability of freelancing helped again during my wife’s hunt for a job as an attending physician. She interviewed around the Northeast, and we settled in western Massachusetts, a quiet region with good schools, a low cost of living, and a shortage of doctors. Her income is higher and our expenses are lower than they would be in a populous, medically overserved area, such as Boston, MA, or New York, NY.
Freelancing has other benefits, too. I work from home most of the time and set my own hours. As long as I report the story properly, nail the word count, and meet the deadline, clients do not especially care how I get the job done (I missed the deadline for this article by nearly two months; however, I was not being paid). Because I have worked extensively for the news sections of research journals, many of my stories have also been cataloged in PubMed, giving me an inexcusably high citation index (8). I have interviewed Nobel laureates, prominent politicians, institute heads, and a pizza deliveryman. Clients have sent me to Moscow, Russia, Aspen, CO, Mexico City, Mexico, and Binghamton, NY. It is a wonderful career for me, and I am glad that I have been able to afford it. Your mileage, as they say, may vary.

REFERENCES