

Yin, meet yang

By Priya Venkatesan, Ph.D.

I am currently a postdoctoral researcher in a laboratory at Dartmouth Medical School. There is nothing out of the ordinary about that; DMS counts more than 240 postdoctoral fellows among its ranks this year. But my case is unusual. Although I gained some experience as a scientist while obtaining a master's of science in genetics, my doctorate is in comparative literature, with an emphasis on French literature and philosophy. So why am I conducting molecular biological research?

Parallels: After finishing up my studies in literature, I entered a molecular biology lab at DMS with the intention of seeking parallels between scientific practice and literature. My interests in graduate school were mainly theoretical, as I textually analyzed certain aspects of scientific communication. However, for me, a question remained: Is there room for literary theory within the framework of the laboratory? While conducting molecular biology research in the lab of Dr. Christopher Lowrey, I have found the parallels between literature and science all too striking. Further, I have determined that being a literary theorist could have advantages in the laboratory—not only in enhancing scientific productivity, but also in more accurately understanding scientific activity.

In graduate school, I was inculcated in the tenets of a field known as science studies, which teaches that scientific knowledge has suspect access to truth and that science is motivated by politics and human interest. This is known as social constructivism and is the reigning mantra in science studies, which considers historical and sociological understandings of science. From the vantage point of social constructivism, scientific facts are not discovered but rather created within a social framework. In other words, scientific facts do not correspond to a natural reality but conform to a social construct.

Lab: As a practicing scientist, I feel these views need to be qualified in the context of literary inquiry. My mentor, Chris Lowrey, is an extraordinary physician-scientist whose vision of science is pragmatic and positivist. My experience in his lab has shown me that the practice of science is at least partly motivated by the scientific method, though with some qualifications. I found social constructivism too dogmatic in the face of theoretical, abstract reasoning and now find it even more so in view of my experience in the lab, as I have come to realize the characteristics scientific experimentation requires. These characteristics entail what I would call a code of conduct of the self, an ethic of self-motivation that propels the scientific endeavor forward. I have found that this ethic guides the process of science itself.

The Point of View essay provides a personal perspective on some issue in medicine or science. Venkatesan is a 1990 graduate of Dartmouth College, where she double-majored in biochemistry and comparative literature. She also holds a master's degree in genetics from the University of California at Davis and a doctorate in literature from UC-San Diego.



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While not editorializing on the nature of scientific progress and its societal value, by immersing myself in the day-to-day routine of the lab I was finally able to see why social constructivism developed as a way of looking at science and why science often seems so inaccessible to those in the humanities. My conclusions concern the way scientists appropriate language to describe their output and productivity and the textual factors that go into designing an experiment, following through on it, producing and interpreting the data, and finally writing a journal article.

Social constructivists focus their attention on the dichotomies between the social sciences and the hard sciences. But challenges to science come not just from historians or sociologists of science, but also from philosophers and humanists. One of these challenges is subsumed under the rubric of postmodernism, a much-banded-about term that generally reflects a proposed state of knowledge within current social conditions. In postmodern terms, science does not inherently lead to progress but puts society in a moral quandary in which technological solutions to social problems beget more crises. Postmodernism also challenges scientific realism with its claim that reality is always mediated through a language scientists must appropriate.

Rhetoric: In many ways, social constructivism has been reframed as postmodernism, since both movements question the scientific realm's theory of truth—that is, that scientific facts mirror an external reality which does indeed exist. However, this reframing is unnecessary, since clear distinctions exist between social constructivism and postmodernism. Through my experience in the laboratory, I have found that postmodernism offers a constructive critique of science in ways that social constructivism cannot, due to postmodernism's emphasis on openly addressing the presupposed moral aims of science. In other words, I find that while an individual ethic of motivation exists, and indeed guides the conduct of laboratory routine, I have also observed that a moral framework—one in which the social implications of science and technology are addressed—is clearly absent in scientific settings. Yet I believe such a framework is necessary. Postmodernism maintains that it is within the rhetorical apparatus of science—how scientists talk about their work—that these moral aims of science may be accomplished.

Science is not above criticism or challenge. However, to politicize science and reduce it to a social construct is tantamount to not fully appreciating the qualities required to produce real scientific discoveries and breakthroughs. Social constructivism, in my view, underscores the inaccessibility of scientific communication to those outside the field—a reasonable charge leveled against the workings of scientists. In short, the ambivalence of the public regarding science may in fact have rhetorical answers rather than political ones. ■