

Putting the 'Notoriety' Cart Before the 'Prominence' Horse

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Recently, a colleague posed a seemingly simple question that took my thoughts down an unexpected path. Selected for a prestigious award, she had been asked to write something on mentoring and wanted to go beyond the personal reminiscences common to such pieces. Aware of my interest in issues related to the advancement of women in science, she wondered if I knew of any quantitative data that demonstrated the effects of mentoring on career development. The key word: *quantitative*.

There is significant anecdotal testimony that attests to the importance of mentoring. Most successful scientists openly acknowledge that navigating the complex terrain of academic science is much riskier without the guidance of an experienced mentor. Mentoring guides published by the National Academy of Sciences, the Association for Women in Science, and other professional societies rest on the unquestioned premise that mentoring is essential. How would you go about *quantitating* the value of mentoring? Is it even reasonable to try to measure what is in essence a very personal, informal, and somewhat intangible relationship? However, I was confident that somewhere, in one of the many mentoring books on my shelves, there was the data she needed.

Among the books I pulled down was *Fair Science* by Jonathan Cole, published by The Free Press in 1979. Cole crunched a substantial amount of data. Included in his analysis was the development of quantitative scales for measuring the seemingly intangible factors that influence the careers of women and men in science. Although the book is now out of date and its findings considered controversial in some circles, I was certain it would have data measuring the effects of mentoring. It didn't. But there was a section of the book that took me down that unexpected path. Cole, describing a classification scheme for analyzing scientific reputation, created four categories of scientists using two criteria. The two criteria are visibility and impact, and the four groups are *prominent*, *esteemed*, *notorious*, and *invisible*. Esteemed scientists are highly regarded by their peers, but whether by choice or circumstance, they are not highly visible. Invisible scientists--and sadly Cole's scheme places most working scientists in this category--enjoy neither high visibility nor high scientific regard, except perhaps in their local environments. Prominent scientists garner high visibility as a result of their highly regarded scientific contributions, and their influence often becomes quite widespread. The notorious scientists--and we can all name one or two--somehow manage to achieve a high level of visibility disproportionate to the regard in which their peers hold their scientific contributions. Among the notorious group (and Cole's use of this word does not include its more sinister implications) are those scientists well skilled at "working the room." Valued for their organizational and management skills, these scientists make valuable contributions to fields and institutions. Without detailing the rather sophisticated ways Cole uses this scheme in the context of his book, it is worth mentioning one other important finding. High visibility usually lags behind peer regard for the quality of one's scientific work by about a decade--with the peak for both occurring in mid to late middle age.

Although developed for a somewhat different purpose, Cole's descriptions of the four scientific types provided me a way to think about something I had been noticing, and find disturbing. Working for a private foundation, I attend a fair number of scientific meetings, even those somewhat peripheral to the foundation's program areas. A major part of my job is knowing who's thinking about what. At many of the meetings I attend or whose agendas I receive--including at times even the peripheral ones--participants include the same cadre of bright young scientists. Who's back home running the ranch while they race from a special symposium for the general public in D.C. to an international society meeting in Paris to the

invitation-only elite workshop at a spa-resort in the Pacific Ocean? Lately I have begun to wonder if some young scientists might not know of the notoriety/ prominence distinction.

Granted, Cole's book was written two decades ago. Today it seems as if some fundamental time constant has shifted and everything just moves faster. Maybe you don't have to wait until you're 45 to earn widespread scientific esteem. Maybe you can comfortably wear the influential mantle of prominence before you are 50. Still, the social order described by Cole makes sense. It seems to me that young scientists (and I do mean young, usually around 30 years old) make one interesting finding, and if it's in a "hot" area, they are suddenly everywhere. When I ask young scientists why they give so many lectures, visit so many labs, attend so many conferences, write so many chapters, and author popular science books, they tell me that continued success (read funding and resources) absolutely requires that they "be out there." What a shame. Maybe it would be better if these bright, creative scientists spent more time "in there." Recognizing that E-mail, voicemail, and a host of other electronic tools have freed work from place, I still wonder if they shouldn't be home managing their labs, spending time with their students, writing thoughtful papers, and building the body of work that will earn them esteem first and perhaps prominence later. I wonder what kind of advice they've heard from their mentors? More importantly, what kind of mentoring are the mentors giving those individuals depending on them?

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