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LECTURE

**Tracking the Evolving Relationship
Between Scientists and Journalists**

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Tracking the Evolving Relationship between Scientists and Journalists

by

Sharon Dunwoody

One of the most vivid memories from my early days as a science writer is that of interviewing a scientist, on a crisp fall day much like this one, about how my newspaper readers could prepare for the upcoming flu season. At the end of a fairly benign interaction, I got up to head back to the newsroom when the fellow said, somewhat anxiously, “You know, I don’t want my name used in this story.”

It was an innocuous set of facts, and “an unnamed virologist” just was not going to pass muster with my editor. I was incredulous. The scientist was adamant. I left without a story.

This was back in the early 1970s, and I did not know at the time that my career as a science writer would be pockmarked by such incidents, everything from sources who wanted to remain anonymous to scientists who balked at even scheduling an interview.

Today, though, things are very, very different. Rather than avoiding public visibility, scientists increasingly go seeking it. Today’s landscape is rife with a different type of incident:

- The science writer who gets so many calls from scientists pitching story ideas that she now responds to each with the question: When is your grant up for renewal?

- The engineer who, when asked to make time for a reporter from a nearby metropolitan newspaper, responds, “Great, I’ve wanted to open up that market!”

- The scientist with a paper coming out in *Nature* who hires an East Coast public relations firm to set up a press conference and handle his publicity.

What a sea change in relationships between journalists and scientists in such a short time! In this talk, I will take a historical look at these relationships and then will share with you some of my best guesses about how we have gotten

from the reluctant days of “then” to the eager days of “now.”

The classic 20th century relationship

The famous New Yorker cartoon of an elderly scientist reassuring his equally elderly colleague that “One thing I’ll say for us, Meyer—we never stooped to popularizing science” has long been the iconic illustration of scientists’

attitudes toward the media. Below the humor, though, was an acknowledgement of a longstanding tension between journalists and scientists.

Journalists define themselves as society’s watchdogs, a role that not only anticipates but also celebrates tension between reporter and source.

Sources of that tension are myriad; among them:

- Journalists define themselves as society’s watchdogs, a role that not only anticipates but also celebrates tension between reporter and source. Too much of a spirit of cooperation makes a journalist nervous; she feels that she needs a healthy distance from her sources in order to be analytical and critical.

Scientists, in contrast, yearn for a collaborative environment, where the expert and the journalist work together to fashion stories that will influence public understanding and, of course, increase public support for science.

- The journalist is in a perennial rush. Deadlines are constant and unforgiving; a reporter may be able to give a couple hours to reporting a story but then must go with what she’s got.

Science, on the other hand, often moves at something akin to geologic speed. The scientist

will put a reporter on her “rolodex” but may think the appropriate time to return a call is, well, months later when her science has finally made it through peer review.

•When she arrives for an interview with a source, the journalist expects to control that interaction. It is her job to ask questions and the scientist’s job to answer them, period. She expects her source to understand his role and to remain faithful to it.

A scientist believes he should be an active partner, not just a passive responder to questions. He knows what’s important about this research, after all, so he has an obligation to steer the interaction in a right and true direction. He also has to maintain vigilance, as the journalist likely will get something wrong if he does not exercise some quality control over the news construction process, including vetting the story for accuracy before it is published.

Most senior science journalists working today will reflect ruefully on these historically awkward relationships. Among the many sources with whom a journalist interacts, they would contend, scientists have been aberrant.

Things were not always this way

Back in the 19th century, scientists were the major popularizers of science. As wealthy gentlemen led expeditions to the jungles of South America or to the ice floes of Antarctica and then returned with specimens and stories, these bright, eccentric souls became the media superstars of their day, speaking to packed lecture houses and writing articles for popular magazines. The Victorian era went crazy for natural history, noted Barber: “By the middle of the century, there was hardly a middle-class drawing-room in the country that did not contain an aquarium, a fern-case, a butterfly cabinet, a seaweed album, a shell collection, or

some other evidence of a taste for natural history” (Barber, 1980:13).

Popularization was part of a scientist’s job in that era. At one point in the late 19th century, for example, every officer of the American Association for the Advancement of Science, the primary scientific society of its day in the United States, had written an article for *Popular Science Monthly*, one of the most popular science magazines of the day (Burnham, 1987). In addition to an honest interest in educating the public about science, scientists also needed the resources that public visibility could summon for their work.

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Popularization becomes a 4-letter word

In the course of a few decades in the early to mid 20th century, scientists went from enthusiastically engaging in science popularization to hiding from the process. Among the reasons for this dramatic shift:

•**Specialization:** Eighteenth-century and early 19th century scientists were generalists, learning as they went. Scientific instruction had not yet found its way into school curricula—the ideal university graduate was a man of letters—so much of scientific training was experiential in nature.

But once scientists began to specialize, late in the 19th century, scientific training became narrow and deep. Scientists had to invest more time in building expertise so could afford less time for other activities, including popularization.

•**Professionalization:** Occupations that professionalize seek to raise their status in the world at large. They do so by laying claim to specialized domains of knowledge and to specific educational processes for imparting that knowledge, ideally by restricting the access of

those outside the profession to that knowledge. They develop their own languages and take some comfort in the fact that those outside the profession cannot understand them. They develop their own reward systems and work to internalize them so that it is the profession—not the rest of society—that is charged with both rewarding and punishing its members.

In sum, a profession creates an “us” and “them” environment. The “us” are smart, specialized individuals whose work is typically in service to society in some way. But they are also individuals who have defined themselves as not only apart from the rest of society but also of much, much higher status.

When science professionalized, then, one important goal was the creation of a gap between the scientist and everyone else. The world of the scientist needed to be technical, complex, beyond the ken of the nonscientist. A profession works hard to create intellectual distance, not to bridge it. Popularization, thus, became a no-no, and science set about actually punishing its members who ventured across the line to communicate with the public.

For example, many scientific societies declared that activities that made one scientist more publicly visible than others amounted to “unethical advertising.” A typical manifestation of this prohibition occurred at an East Coast medical center in the 1970s. A researcher studying treatments for Meniere’s Disease, a debilitating condition of the inner ear that robs individuals of their sense of balance, agreed to an interview with a newspaper journalist. The resulting Sunday feature story was, by all accounts, accurate and informative. But when the scientist, some months later, sought to join an honorific society in his specialty area, the society turned him down. The researcher had engaged in “unethical advertising” by allowing his name to be used in the story, the society declared.

In sum, a profession creates an “us” and “them” environment. The “us” are smart, specialized individuals whose work is typically in service to society in some way. But they are also individuals who have defined themselves as not only apart from the rest of society but also of much, much higher status.

Scientists who ignored the warnings of their colleagues and forged ahead with substantial popularization efforts were pilloried. In a seminal book, communication researcher Rae Goodell chronicled the fallout of popularization activities for a set of “visible scientists” working in the 1960s and 1970s, among them such luminaries as Garrett Hardin, Margaret Mead and Carl Sagan. To a person, they had to weather withering critiques from the scientific culture (Goodell, 1977).

No wonder, then, that my virologist paled at the thought of my using his name in my flu story!

The result? A lopsided exchange relationship between scientists and journalists

Scholars who study relationships between reporters and sources characterize those relationships as dominated by the need for “exchange.” On the one hand, journalists need the information that sources can provide while on the other, sources often need the visibility that journalists can provide. Although the

needs of each group differ, they can both be accommodated by the news making process. Thus, the two actors are willing to cooperate in ways that will accomplish their respective goals.

During much of the 20th century, while exchange relationships flourished on many news beats—politics, police, courts—scientists stood out as an exception to that process. Since they were actually being punished for interacting with journalists, scientists had nothing to gain and a lot to lose. Many returned journalists’ calls only with great reluctance and viewed interviews as distasteful moments to be tolerated at worst and avoided at best.

That means that, for much of the 20th century, scientists needed journalists less than jour-

nalists needed scientists. That inequity, perversely, put scientists in the driver's seat. Since scientists did not need what journalists had to offer, they could be downright cavalier about their role in the news process. If a journalist asked the "wrong" questions, the scientist could safely ignore those questions and proceed to answer the "right" ones. If a journalist behaved rudely, scientists could simply refuse further interviews. Scientists levied a variety of "rules" regarding interviews that journalists could rarely accommodate; for example, one prominent physicist insisted, as a condition for an interview, that his taped comments be broadcast in their entirety without editing.

Power was very much in the hands of their sources, so journalists found themselves scrambling to maintain good relationships with scientists. It became difficult for science journalists to be critical of science, and investigative reporting languished. Veteran investigative reporter John Crewdson describes science journalists as "perky cheerleaders" for science, enmeshed in a close relationship with their sources that encourages reporting on science's gee-whiz accomplishments but discourages skepticism: "When Professor Schmidtlapp says he's discovered something big, the science writers, their collective belief reaffirmed (and their own stature enhanced), don't draw their guns and make him put his cards on the table. They don't flyspeck his raw data, don't check his funding sources, don't scrutinize his previous articles for mistakes....They like science, they probably admire Schmidtlapp and they're excited by the prospect that he's right" (Crewdson, 1993: 12)

Their unwillingness to interact with journalists did put scientists at some disadvantage. With little to gain, scientists historically invested nothing in learning about journalism. When they needed to interact, then, they sometimes did it badly. Science writer Jon Franklin has often told the story of two astronomers who,

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upon making a dramatic discovery, decided to be good public citizens by sharing their finding with the largest circulation newspaper in the country...and contacted *The National Enquirer* (Franklin, 1986). Such tales nicely illustrate the naiveté that can afflict the ignorant. For much of the 20th century, scientists have been woefully ignorant of journalism.

Today, things have changed once again.

As I noted at the beginning of this talk, the days of the naïve and reluctant scientist are on the wane. While many of the old assumptions persist, new data and new experiences suggest a real sea change in scientists' attitudes and behaviors regarding the mass media. And, as I will note below, those changes are driving some dramatic changes in the relationship between these two actors. Let's take a brief walk through some still-extant assumptions that today are more myth than fact.

Myth #1: Scientists still avoid journalists. Any science writer can point to the occasional reluctant scientist who has been "burned" by the mass media and declares her intention to avoid all journalists in perpetuity. But the behavior of the "typical" scientist is quite different. A study of more than 350 first authors of articles in two prominent medical journals, for example, found that the typical PI (principal investigator) had engaged in 13 newspaper interviews, 15 radio interviews, and four national magazine interviews. Strikingly, more than one in 10 of the respondents had actually initiated contact with a journalist rather than waiting for the journalist to call him/her (Wilkes, et. al., 1992).

Myth #2: Journalists know nothing about science and its practitioners. The general reporter called in to cover complex science remains a disaster waiting to happen; I can still recall one local journalist who cheerfully told her/his audience, following a press conference

about funding for a new study of tumor necrosis factor, about the cancer-fighting prospects of “tumor necrosis factor” (no doubt a substance designed to put tumors to sleep).

But today’s specialized science, environment, and health reporters are in a different league. Many come equipped with extensive science knowledge stemming from both formal and experiential learning. They have often been on the job for decades and bring a historical perspective to an unfolding story available to few scientists. Some years ago, I

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watched science journalists question a scientist closely about causal statements he made concerning characteristics of newborn infants and their likelihood of dying from Sudden Infant Death Syndrome. The reporters knew that causal claims about SIDS were unlikely to pan out, and their efforts to prod the researcher into sharing evidence that would support his causal statements (he ultimately failed to do so, and most of the reporters decided not to write the story) constituted an important service to their audiences.

Myth #3: Scientists gain nothing from public visibility. Frankly, scientists have always benefited from public awareness of their work. What has changed in recent years is not the magnitude of those benefits but scientists’ awareness of them and the scale and sophistication of scientists’ efforts to claim such benefits.

For example, some years ago two teams of scientists achieved the same significant discovery at the same time and rushed to claim priority. The work of one team was accepted in the journal *Nature*, while the work of the other was accepted in the journal *Science*. The journal issues were coming out just days apart, assuring the two teams of shared priority should scientific rewards ever come their way. However, the team whose work was to appear in the journal with the later publication date took the unusual step of imploring the journal editor to release

reporters from the journal’s embargo rule (which prevents journalists from publishing stories until the day of journal publication) in order to allow reporters to include the findings of both teams in their initial stories.

Why did they go to all that trouble? I think the answer is that, like many savvy scientists today, they realized that public visibility confers legitimacy, and legitimacy, in turn delivers resources. They also knew enough about journalistic processes to understand that the biggest social bang for their buck would occur in “first-day stories.” If the embargo had stayed in place, they would have been relegated to “second-day story” status.

The importance of public visibility cannot be overstated. In fact, several studies document that visibility enhances not only one’s status in society at large but also one’s status among scientists in one’s own field! For example, one study of research published in *The New England Journal of Medicine* and then covered by *The New York Times* found that the more visible studies were cited almost 75% more frequently in the scientific literature than were matched studies from the journal that were not covered by the newspaper (Phillips, et. al., 1991).

Myth #4: Media stories are filled with inaccuracies. The most common complaint among scientists is that many journalistic accounts of science are just plain wrong. And indeed, one can find numerous factual problems in media science stories. (Remember that tumor necrosis story earlier in this talk?)

But studies of inaccuracies in media accounts offer an interesting and contradictory pattern that should make us stop and think about what the notion of “inaccuracy” really means in this context. In study after study, while half of scientists sampled label media accounts as inaccurate generally, 80 to 90% of those same scientists, when asked about the last story that quoted them, declare that piece to be quite accurate (Dunwoody, 1982).

Can one have it both ways? I would suggest that accuracy judgments probably tell us

more about the judge than about the judged, that is, more about the motives of the source than about the quality of the stories themselves. And while media accounts of science will always be flawed to some extent—that act of simplifying will always introduce less precision—the important question may be the extent to which media accounts produce flawed understanding on the part of audiences. The only inaccuracy study to have seriously examined this possibility found that reader recollection of a story's main point was judged by scientific sources to be accurate two-thirds of the time (Tichenor, et. al., 1970).

Myth #5: If only all science journalists were scientists... Scientists routinely call on science journalists to become better trained by earning science degrees; the working assumption is that journalists formally trained in science are better able to write about the topic.

Scientists are getting their wish, as science communication programs in universities around the country are increasingly likely to privilege applicants with formal science training. But does such training actually make a person a better science writer?

Empirical evidence is sparse, so the best answer is probably “We don't know.” I suspect those with formal science training may have an advantage at entry level, when the complexities of beginning a career make any a priori knowledge useful. And veteran science journalists with advanced degrees routinely speak to the political value of “leveling the playing field” in an interview with a scientist by making one's own Ph.D. obvious.

The few studies that have attempted to compare the knowledge levels of science journalists with and without formal science training (for example, by asking a series of factual questions about the science of global warming) do find a small effect of formal training. But that effect is swamped by a much larger variable: time on the job (for a summary, see Dunwoody, 2004). Perhaps what scientists should really be opining is: If only all science journalists had 25 years of experience!

Looking ahead

As we march into the 21st century, scientists and journalists are rapidly building something called a “shared culture.” The term, coined by British communication researchers Blumler and Gurevitch (1981), refers to a relationship between journalists and sources that not only acknowledges the importance of cooperation to achieve their respective goals (an exchange relationship) but also encourages the development of what one might call “community rules.” That is, all members of the community accept responsibility for developing, maintaining and respecting rules that will govern the culture.

Thus, scientists in a shared culture will understand and respect the concept of deadlines. When a journalist calls, they will drop everything to get back to that individual even when it may not be in their best interest. The journalist, in contrast, will understand and respect the primacy of peer review and will not do an end run around a scientist who declines

Perhaps what scientists should really be opining is: If only all science journalists had 25 years of experience!

to discuss a study that has not yet been vetted by her peers.

The true hallmark of a shared culture is the communal maintenance of rules. If someone violates a rule in such a culture, everyone gets upset. For example, although much debated, journal embargo rules are common in the scientist/journalist shared culture. In a world dependent on journal publication as a newsworthy moment (i.e., “In today's issue of *Science* magazine...”), these rules mandate that a media organization can gather information but cannot publish a story until after the embargo date set by the journal, usually the day of issue publication. On occasion, a media organization will appear to violate the embargo, an event that produces much angst and discussion on both sides of the aisle. Sometimes, what appears initially to be a violation is really enterprise reporting, where the journalist has gathered information about the research without recourse to the

journal article. But if a journalist truly has violated the rule, then he is subjected to critique from both scientists and journalists.

In closing

Relationships between scientists and journalists will continue to be characterized by wariness and tension. Each will want to construct a different narrative about science, and I think it is natural for participants in these communication processes to employ anything in their arsenal of skills that will make their particular version of reality the dominant one.

I, for one, welcome the increased knowledge and sophistication of scientists as they begin to compete for time and visibility in the public arena. Activity that once would have earned them the epithet “unethical” will, in the long run, contribute to the open nature of scientific processes and to public understanding of what scientists do.

The smart journalists understand and welcome this level of engagement as well. As scientists become more dependent on public visibility for resources, they will be forced to give up some of the control they currently exercise over science news making, permitting a more critical and, perhaps, socially useful science press.

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B. Aubrey Fisher

B. Aubrey Fisher served as a faculty member in the Department of Communication at the University of Utah from 1971 to 1986. He began his professional career as a high school teacher and radio announcer in South Dakota. After receiving his Master's and Ph.D. degrees from the University of Minnesota, he spent four years on the faculty at the University of Missouri.

Professor Fisher was a prominent scholar in interpersonal communication and communication theory. His published work includes three books and more than 35 articles and book chapters. He was considered one of the most notable and influential communication scholars of his time. He held numerous offices in professional organizations, including president of the Western Speech Communication Association, president of the International Communication Association, and editor of the *Western Speech Communication Journal*.

The B. Aubrey Fisher Memorial Lecture was established by the Department of Communication in 1986 to recognize Professor Fisher's outstanding achievements and to provide a forum for presenting original research and theory in communication.

Sharon Dunwoody

Sharon Dunwoody (Ph.D. Indiana University 1978) is a Professor in the School of Journalism and Mass Communication at the University of Wisconsin-Madison and has held the Evjue-Bascom Professor Chair there since 1989. Dr. Dunwoody was President of the Association for Education in Journalism and Mass Communication at the time of her address. She is currently Associate Dean for Social Studies in the Graduate School at the University of Wisconsin.

Her research and teaching interests focus on mass media science and environmental reporting and also include risk communication, public opinion, and mass communication theory and methodology. Professor Dunwoody has written six books, seventeen book chapters, nearly fifty refereed articles, and innumerable book reviews and other publications. She has given conference presentations and lectures literally around the world.

In recognition of her prodigious scholarly record and promise, she was awarded the Hillier Kriegbaum Under-40 Award by the Association for Education in Journalism and Mass Communication. In 1995 Dr. Dunwoody was made a Fellow of the American Association for the Advancement of Science, and in 2004 she became a Fellow of the University of Wisconsin-Madison Teaching Academy.

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