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Comment

PUBLIC COMMUNICATION FROM RESEARCH INSTITUTES: IS IT SCIENCE COMMUNICATION OR PUBLIC RELATIONS?

Public relations as science communication

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ABSTRACT: *Public communication from research institutions often functions as both science communication and public relations. And while these are distinct functions, public relations efforts often serve as science communication tools. This is because successful science communication and public relations efforts for research institutions both rely on finding shared language and disseminating findings in context.*

Public communication from research institutes: is it science communication or public relations? Is there a difference?

Those are good questions. In order to address them, I'm going to make a couple of assumptions that will help define the scope of "public communication" referred to in this article: first, I'm going to assume that "public communication" refers to news releases, videos, blog posts and other materials issued by a research institution, as opposed to outreach conducted by the researchers themselves (e.g., a researcher speaking at a local museum). Second, I'm going to assume that the public communication refers in some direct way to the institution's research activities. For example, I'm going to rule out public communication about tuition at universities, political appointments at federal agencies, etc.

Bearing those assumptions in mind, I'd argue that public communication from research institutions is often both science communication and public relations. Yes, there's a difference. But sometimes public relations efforts can serve a science communication function.

I define science communication in fairly broad terms: anything that conveys information about scientific findings or concepts. That includes peer-reviewed journal articles, conference presentations, news releases, museum exhibits, mainstream news articles, and everything in between. These are all science communication tools, though they target different audiences and have different aims, which range from disseminating new findings to raising public awareness of science's impact on our daily lives.

Public relations efforts, on the other hand, are usually aimed at making an institution look good and helping it achieve its strategic goals, such as elevated prestige among its peers or increased research funding.

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Researchers engage in a variety of science communication activities. Most research institutions tend to engage primarily in the public communication activities I mentioned above: news releases, blog posts, homepage feature stories, etc. These communication tools are usually aimed at a general audience of intelligent non-experts, either directly or through the intervening medium of a reporter.

Institutions issue news releases to highlight their research findings, either by getting reporters to write about the work or by having the releases picked up and run by "news" sites that don't modify the release at all (i.e., "churnalism").

These news releases play an important role in science communication, particularly for findings that were published in journals that don't have the high visibility of *Science*, *Nature*, or similar. There are good stories that reporters may never find because they're published in a journal that reporters don't read regularly. A news release can therefore raise the profile of articles in those journals, making it more likely that the relevant research will get written about in more mainstream media. Of course, mainstream media coverage of research findings also has an influence on the research community. For one thing, media coverage in mainstream news outlets increases a journal article's visibility within the research community [1, 2].

Public communication and the research community

In the most famous study of this phenomenon, Phillips, et al., set out to determine whether medical articles that got coverage in the *New York Times* (*NY Times*) got more scientific citations than articles that did not receive coverage in the *NY Times*. Specifically, they "sought to discover whether coverage by the *NY Times* genuinely increased the effect of an article (the publicity hypothesis), or merely earmarked outstanding articles that would have garnered many citations without such coverage (the 'earmark' hypothesis)" [1]. In other words, they wanted to know if a newspaper story made it more likely that a journal article would be cited by other researchers, or if newspaper reporters were simply writing about the most important journal articles (which would get a lot of citations regardless of news coverage).

To address this question, the researchers took advantage of a 12-week strike that took place at the *NY Times* in 1978. During that strike, the *Times* produced an "edition of record" but did not distribute issues to the public. To quote the Phillips paper: "During the strike the [*NY*] *Times* continued to earmark [*New England Journal of Medicine*] articles it deemed worthy of coverage, but it did not publicize this information to its readership. By comparing the number of citations of [*New England Journal of Medicine*] articles published when the [*NY*] *Times* was not on strike, one can discover whether publicity in the popular press truly amplifies the transmission of scientific findings to the medical community" [1].

In their study, the researchers examined the citation rates of every *New England Journal of Medicine* article covered by the *NY Times* in 1979 for 10 years after the article's publication. The researchers also identified "control" articles that they deemed compara-

ble to the articles covered by the *NY Times*, and then compared the two sets of citation rates. They found that articles publicized in the *NY Times* "received consistently more scientific citations in each of the 10 calendar years after their publication than did matched control articles not reported by the *Times*."

However, the *New England Journal of Medicine* articles earmarked by the *Times* during the newspaper's strike — which would have been publicized, but weren't — did not receive more citations than their controls. In fact, they received fewer. In short, Phillips and his co-authors noted, "the earmark hypothesis seems implausible."

The Phillips study makes clear that, at least at that point in time, mainstream media were not only an important science communication tool for reaching the general public, but was also an effective tool for disseminating research findings within the research community itself.

Would this effect be seen today? I do not know. I haven't found a more recent study that addresses this issue head on — though a 2003 study by Vincent Kiernan did find a correlation between newspaper coverage and citations [2]. I suspect that the impact of mainstream media coverage may actually be accentuated today, rather than mitigated. For one thing, there are simply far more journals now than there were even ten years ago. For example, the number of active, peer-reviewed scholarly journals jumped from 14,694 to 26,746 between 2001 and 2011 [3, 4]. More journals means more articles to keep track of, which can be taxing (even with the assistance of online tools such as Google Scholar).

The rise of interdisciplinary research complicates matters further. When interdisciplinary groups of researchers work together on projects, the resulting papers are published in journals that tend to focus on a specific study area — which, by definition, means it is outside the study area of at least some of the researchers working on an interdisciplinary project. For example, meteorologists may miss an interesting article on hurricane forecasting if it was published in a journal that focuses on "big data" computer science (I know this, because it happened). Publicizing interdisciplinary research findings through news media makes it more likely that other scholars in all of the relevant disciplines will be aware of the findings.

Building public support

Science communication is important for more than just boosting citations. It's essential for fostering public support for science funding. A 2013 paper from Sanz-Menéndez, et al., on public support for government funding of science and technology research, identified several characteristics that consistently served as good predictors of willingness to support public research funding.[1] First, people who "express an explicit interest in science" are "much more likely to choose [science and technology] as a preferred area for government spending." Second, those who score higher on a 10-item battery of science knowledge questions are more likely to support research spending. Third, "those who

[1] A noteworthy qualifier: the study was done using data from a survey of adults in Spain, which creates some uncertainty about how applicable the findings are elsewhere.

believe that scientists are motivated primarily by altruistic purposes" are more likely to support government funding for research [5]. I would argue that all three of those variables are influenced by science communication efforts.

Where does the research institution come into play here? A 2013 paper from Marcinkowski et al., found that university researchers were more likely to promote their work through news media if they worked at universities with active public relations offices [6].[2] "Pure PR activity is the most powerful predictor of media efforts," Marcinkowski, et al., wrote. "The more often PR professionals ask for news items, the stronger the effect of scientists complying with such demands, especially when it comes to researchers' self-initiated and PR-assisted press releases. Through well-equipped and active press offices, universities are able to stabilize and professionalize the media contact of researchers" [6].

In other words, researchers were more likely to engage in external science communication efforts about their findings when the research institution urged them to participate — particularly when the institution asked them to help with regard to that prototypical institutional tool, the news release.

Public communication and public relations

Are public communication efforts from research institutions a form of public relations? Almost always. News releases are intended to encourage media coverage of research findings, which is clearly a public relations activity. If reporters choose to write about the research, the news release was an effective piece of public relations. By the same token, if reporters choose to write about the research, it means the news release also had value as a science communication tool — raising the profile of the research within the scientific community and beyond.

Similarly, blog posts, online features, and other communication tools are most often aimed at attracting the interest of promising researchers and graduate students, garnering political support from legislators or funding agencies, or raising money from private donors or nonprofit organizations.

However, there are exceptions. Many research institutions use public communication tools that are designed to provide information, rather than performing a public relations function (e.g., the U.S. Environmental Protection Agency's pesticide fact sheets or the Centers for Disease Control and Prevention's guidance materials on evaluating, diagnosing, and reporting specific diseases. These materials are clearly science communication tools, not PR.).

Bad PR can be misleading, or misrepresent the science. Sometimes bad PR happens by mistake, because someone didn't understand what they were writing about. Sometimes it happens because a scientist, institution, or PR person wants to exaggerate research findings in order to get attention. Sometimes it's not clear who is to blame. For example,

[2] The researchers surveyed 942 researchers at 265 universities, all in Germany.

look at the hype surrounding the 2014 story about hurricanes with female names being more deadly (and its subsequent debunking). Were the early (misleading) stories the fault of the researchers who did the work, the PR people who promoted it, or the reporters who wrote the news articles? Ultimately, it doesn't matter. The story got out there, and all parties involved are likely thinking about ways to avoid having this happen in the future.

But it's important to note that, at research institutions, good PR can serve the science community as a whole. It can help bolster support for research funding. It can help inspire the next generation of researchers. And it can help to remind the public of what scientists are working on and why.

Science is an iterative process. When one question is answered, the answer often inspires several new questions. Good science communication not only highlights research findings, but places those findings in a context that the target audience can understand and appreciate. Studies have found that public relations in general, and news releases in particular, have an impact on which studies reporters choose to cover [7, 8]. And researchers have also found that a good news release about research findings can actually improve the quality of the information that appears in subsequent news stories [9].

Journals are where experts in a given field exchange information with one another. Too often, these experts might think that talking to people outside of their field would mean "dumbing it down." That's not necessarily true. An astrophysicist and a geneticist are unlikely to understand the technical language in each other's papers. That doesn't mean that either of them is "dumb." It just means that they are not speaking in a shared language. Finding that shared language and disseminating findings in context to diverse audiences are often the keys to effective public relations. When PR is done well, I would argue that it can be a valuable science communication tool.

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