Communicating Your Research to Journalists (and Your Relatives)

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Introduction

Imagine that you are meeting the father of your future spouse for the first time. He owns a small landscaping business. He is interested in hearing about the research you do. How do you to explain it to him?

Your 11-year old niece interviews you for a class report on the kind of work done by a relative. How do you tell her about your research so that she not only understands and sees it as interesting, but that she can also convey that to her teacher and peers?

A reporter calls you to ask questions about your recently published results. Knowing that potentially thousands of people will read or watch the resulting story, how do you talk to this journalist so that your science is accurately conveyed?

These scenarios are representative of situations that researchers frequently encounter, yet for which they are often unprepared. The lack of preparedness is indicative of how differently researchers communicate with peers than they do with nonspecialists. There are nuances to how we communicate with different people, of course, depending on whether the person we are talking with is a child, a prospective father-in-law, a possible investor, or a journalist, but these audiences have far more in common with one another than they do with our peers. Thus, the goal of this article is to provide some basic strategies and tips gleaned from science communication professionals to help you effectively explain your research to someone who is not an expert in your field.

Scientists (in a broad sense) are accustomed to a certain level of rigor in communicating their activities and discoveries to peers. They prize clarity, precision, directness, and honesty as well as the need to convey details, justify interpretations, and acknowledge uncertainties and the work of others. Such thoroughness is essential to the process of science, enabling the testing of new ideas, the assimilation of good ideas, and the rejection of bad ideas.

Communicating science to nonspecialists, however, requires a skill set very that is different from the one needed to communicate with peers. One must be cognizant not only that a layperson lacks background knowledge, but that they have different vocabulary, preconceptions, and priorities. Some communication habits that are useful with peers, such as diving into the details of a model or an experiment to justify a certain approach, risk confusing or even boring a lay audience. Talking with journalists who will be interpreting and widely disseminating your work is especially tricky. For example, among fellow researchers, an honest discussion about experimental uncertainties is a good way to boost confidence in one's results; with the public, the opposite is usually true.

It should not be surprising, then, that many scientists, trained to provide accuracy and context, are uncomfortable engaging publicly in a medium where neither is assured. A Pew Research study (Rosentiel, 2009) found that 76% of scientists polled believed that a "major problem" with the news media is that it "does not distinguish between well-founded findings and those that are not." Indeed, I have heard fear expressed by several Acoustical Society of America (ASA) colleagues and by other scientists that interviews with journalists invariably result in stories that mischaracterize or misinterpret the scientific work. The complicated relationship between scientists and journalists, marked by skepticism and distrust but also by a recognition of mutual benefit, is thoroughly described by Peters (2013).

There are many well-documented reasons for scientists to be active in communicating their work to the public, whether it be through journalists or in scenarios such as

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those at the beginning of this article. Moreover, many of the strategies described here are applicable to all intentional outreach efforts.

In their oft-cited *Nature* commentary, Durant et al. (1989) describe how public understanding of science provides benefits to individuals and society, including facilitating a better functioning democracy, helping individuals make better informed decisions about their health and well-being, contributing to a stronger economy and promoting support for science funding. A detailed analysis of these benefits is provided by Gregory and Miller (1998) in their book *Science in Public*. The hypothesis underlying each benefit is that improved scientific literacy leads to better informed decision making.

Although journalists still play a vital role in selecting stories and translating the science, there are many other avenues, including social media, for scientists to engage directly with the public. An excellent overview of science outreach activities and social media platforms is provided in several *Acoustics Today* articles (Farrell and Jones, 2017; Jones, 2017, 2020).

Advice from Media Professionals

Professional science writers have a valuable perspective on how science gets communicated from investigator to the public. Dean (2009), a former science editor for *The New York Times*, describes the motivations, outlook, habits, and constraints of journalists, providing context for the strategies she recommends for researchers to improve their messaging. Many of the same strategies are emphasized by Bardi and Meyers (2015) from the American Institute of Physics (AIP) Media Services team and by science journalists who have presented at ASA special sessions on effective public communication over the past several years. Presented here is a summary of these strategies.

Preparation and Background Check

If you get a call out of the blue from a journalist seeking information about work you have done, take some time to learn about the journalist, the publication he or she works for, and the angle of the story. Will it be a short piece for a general audience (a local newspaper) or a longer piece for a more knowledgeable audience (such as *Science News*)? Ask if you can call back in 10-15 minutes. This provides valuable time for you to do a quick search of previous science reporting by the journalist and the publication venue (if you are not already familiar with it). If you come across red flags, it is perfectly acceptable to decline the interview. If you are inclined to do the interview, you can also use the extra time to gather your thoughts and consider what the salient points of your message will be. Either way, you should call back.

Honing Your Message

Most journalists, especially if they regularly cover science news, are interested in getting the story right, but they still need to get the attention of a highly distracted public that is not generally engaged with science. Unfortunately, the pressure to make a science story both simple and compelling can lead to making it misleading, especially if the reporter does not fully grasp the essential features of the work they are reporting. You can mitigate this hazard by preparing and consistently delivering a succinct message that accurately conveys your work while satisfying journalistic needs for simplicity. That is not a trivial task by any means, but you (the scientist) are better equipped to find that balance than the reporter.

The basic framework of your message, as described by Bardi and Meyers (2015), should be "We did X; we found Y; that means Z." Be ruthless in stripping away any specialized vocabulary, nonessential details, or concepts that may be unfamiliar to most people; make use of analogies and metaphors; emphasize broader impacts. In the business community, this message is known as the "elevator pitch." Imagine that you have 20-30 seconds during an elevator ride to get the person next to you interested in and appreciative of the work you've done (or that you are trying to engage a prospective father-in-law). Before you get the interview call, from a journalist or your niece, consider what that message should be, hone it, and rehearse it. Practice on family and friends and try out different versions of your elevator pitch to see what works best. Use scientific methodology to figure out how to communicate your science!

If you can condense and distill your elevator pitch into a single short sentence, you just might have a sound bite. Journalism thrives on the sound bite. As frustrating as this may be to scientists who prize the thorough, rigorous, and dispassionate communication style of conference presentations and peer-reviewed articles, it simply reflects how news is consumed by most people.

Reporters are happy if you provide them with the hook in addition to some geeky details. You have a choice: you can describe your work as you would to a colleague and let the reporter come up with a sound bite or you can provide the sound bite, something you wouldn't object to seeing in print or leading a radio or TV story.

Staying on Message

During an interview, it can be tempting to slip into a conversational mode, following tangents and providing incidental details and anecdotes. Unless you are explicitly asked for this kind of information, it is best to avoid these side trips. Stay focused on your honed message. The main risk of over sharing is that the journalist is not in a good position to distinguish what is important and what is ancillary. It is quite possible that what you thought was a minor detail or incident will become the lead angle of the published story. Another risk of getting too chatty is that you may inadvertently say something that you really would not want to see in print, such an offhand comment about a fellow researcher, a joke about a funding agency, or a political opinion. Remember that nothing is off the record unless you make an explicit arrangement in advance.

If, during the course of an interview, it appears that the angle of the story is shifting from what was agreed at the outset, don't hesitate to remind the reporter what the primary message should be. You can also use the techniques of *bridging* and *flagging*, described by Dean (2009), to keep the interview on message. If you are asked a question that is heading in a direction you don't want to go, bridging is the trick of providing an answer that steers it back to your main message. This technique is on display at almost every press conference with a public official, but it is not instinctive for scientists. Flagging is simply the act of pointing out when an answer you just gave relates to the main point you want to make; it's a way of keeping the most important ideas front and center. Don't hesitate to ask if the reporter understands a particular point.

Using Numbers and Visual aids

It is easy to overestimate the mathematical acumen of the average consumer of the evening news. The error lies not so much in the expectation that most people are comfortable with elementary algebra and geometry (they are not), but in the assumption that they are proficient with ratios, rates of change, and order of magnitude. The use of statistical information is especially fraught, as Nobelist Daniel Kahneman (2011) effectively illustrates. Because humans are "wired" to see patterns and identify causes, we have difficulty accepting the role of chance in many phenomena, especially when the sample sizes are very large or very small. If using numbers is essential to communicating the significance of your work, be sure to provide context. Analogies are especially helpful.

Science journalists stress the value of visual aids. Data or model results represented as an image or graph are worth the proverbial thousand words. Not only do they convey information, they get attention. In a crowded social media feed, a distinctive image may suffice to convert a viewer into a reader. You may need to adjust the presentation of a graphic that you originally prepared for publication to suit the needs of a general audience. At the very least, avoid jargon in axis titles, legends, and commentary. A nonspecialist should be able to recognize what is being plotted and appreciate its significance, given a modest amount of explicatory prose.

Taking Advantage of Local Media Experts

Most institutions where research is performed have a staff of media professionals dedicated to communicating the fruits of that research to the public. Get to know these people. If you anticipate that an article that you have in press may generate public interest, work with a communications officer to develop a press release. This is an opportunity not only to shape the initial message that will go out to the media but also to get some advice about how to present it and which media outlets to target. Your institution may have policies regarding whether or how researchers communicate directly with the media.

Members of the ASA should also be aware that the Society contracts with the AIP to provide media relations services. These staff members, who have trained in science journalism, sift through *The Journal of the Acoustical Society of America*, other ASA journals (including *Acoustics Today*), and meeting abstracts in consultation with members of the Public Relations Committee and the executive director to identify those most suitable for press releases, lay language papers, and virtual press conferences. If you are asked to contribute a lay language paper to accompany a presentation you are giving at an ASA meeting, take advantage of the opportunity to work with a professional to hone your message.

Conclusions and Further Reading

The basic message of this article is that, with the modest investment of some preparation and practice, you can be an effective communicator of your work to a journalist. There are no guarantees that the resulting story will not have flaws in your eyes, but there are strategies for minimizing that risk. The other message is that, in the long run, the risks of talking to journalists are outweighed by the benefits to you, your institution, your field of research, and especially to the public.

If you are interested in learning more, consider attending a special session or workshop on communicating science to the public at a future ASA meeting. Jones (2020) provides an excellent overview of opportunities for science communication training in *Acoustics Today*. If you are already comfortable with speaking to journalists about your research, consider volunteering as a media liaison for your technical committee. Join the ranks of science communicators!

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