



**"If no one understands the science, it doesn't exist":
more effective "scientist-to-scientist" communication by knowing
your audience**

You know the age-old conundrum: if a tree falls in a forest without any witnesses, does it make a sound? Though science tells us that sound waves do not need a listener to exist, scientific results are not so lucky: if no one considers your experiments important, they may as well not exist. This Tip Sheet discusses perhaps the most important element of effective scientific communication: knowing your target audience well, and using that knowledge to optimize your communication.

When most scientists communicate, they follow the Delphian adage: "Know thyself". They model their audience on themselves, assuming that most of their listeners think and speak the way *they* do. What they should be doing, however, is following the same adage as marketing and public relations professionals: "Know thy audience".

Knowing your audience and tailoring your communication accordingly can make your work more exciting, more compelling, and more attractive to a larger proportion of fellow scientists, regardless of whether they work in your field, in related fields, or in quite different fields. This can translate into greater success at obtaining grants, publishing in high-quality journals, or attracting academic and industrial colleagues for collaborations.

Let us look at some basic strategies for knowing your audience.

• Consciously choose your target audience

Studies of the scientific literature show that published research is becoming increasingly interdisciplinary. A biochemist working 30 years ago published primarily for other biochemists. A biochemist working nowadays publishes for synthetic chemists, computational biologists, and clinicians.

Decide which research communities is (are) your target audience(s). Ask yourself: *Whom do I want to reach with my results? What potential collaborators, funders, and future graduate students do I want to reach?*

- If you're preparing a talk for a conference, look at the conference website and read about which scientific communities are likely to attend. Look at the names of the different sessions and plenary talks. This will give you an idea of who will be in your audience.
- If you're preparing an article for publication, look closely at the "Instructions to Authors" of the journal. Usually journals describe what kind of research they prefer, and therefore what research communities are their target audiences.

Once you have identified your target audience, be aware of just how diverse it can be--and of your need to adapt your communication accordingly. Follow the advice of the research journal *Advanced Functional Materials*: "Contributors should bear the interdisciplinary nature of the readership in mind, always emphasizing the importance of the topic to workers in other fields."

• Assume (nearly) nothing about what your target audience already knows and understands about your topic

When writing a paper or giving a talk, most scientists take for granted that the audience

- accepts their general research topic as important and interesting (*e.g. making better catalysts or monitoring environmental pollution in cities*),
- accepts their specific research project as a logical contribution to that topic (*e.g. the effect of pressure on improving catalysts, or monitoring river fish as an index of pollution*),

- understands the terminology used in their research project.

Too often, these are *not* safe assumptions: colleagues from other research disciplines--even colleagues working in the *same* discipline--often do not accept or understand these things. This brings us to the next point:

• **Emphasize the "plain English" parts of your work--its motivation, importance, and applications--before jumping into the dense forest of technical details**

If the reader or listener cannot understand the "big picture", how can they make sense of the details? The result is similar to what happens when you give a French newspaper to a beginner in the language: she will likely recognize many of the words, but she won't understand how they fit together to give a coherent meaning!

Make sure that your communication answers the following points in low-jargon English:

- What is the general research topic and why is it important to your audience? (*"Who cares about this topic?"*)
- What is the specific aspect of the topic that your project seeks to answer? (*"Why is this specific aspect of the topic worth studying?"*)
- What is the usefulness of your project's findings? (*"What is your project useful for?"*)

Answer these questions at strategic points in a research paper or talk:

- As early as possible, indicate the general topic, justify its importance to the audience, and describe how your study answers a key "hole" or "gap" in this topic
- Toward the end, repeat how your project's results fill the "hole" or "gap", and explain how the results can be applied to future research or applications

Following these strategies will help you maintain the interest of colleagues who already understand your work, as well as capture the interest of researchers in other areas who may end up being collaborators and funders.

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