

## Chapter 24

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# How to Present a Paper Orally

*I come not, friends, to steal away your hearts:  
I am no orator, as Brutus is;  
But, as you know me all, a plain, blunt man,  
That love my friend.*

—WILLIAM SHAKESPEARE

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### Organization of the Paper

The best way (in my opinion) to organize a paper for oral presentation is to proceed in the same logical pathway that one usually does in writing a paper, starting with “what was the problem?” and ending with “what is the solution?” However, it is important to remember that oral presentation of a paper does *not* constitute publication, and therefore different rules apply. The greatest distinction is that the published paper must contain the full experimental protocol, so that the experiments can be repeated. The oral presentation, however, need not and should not contain all of the experimental detail, unless by chance you have been called upon to administer a soporific at a meeting of insomniacs. Extensive citation of the literature is also undesirable in an oral presentation.

If you will accept my statement that oral presentations should be organized along the same lines as written papers, I need say nothing more about “organization.” This material is covered in Chapter 21, “How to Write a Conference Report.”

### The Ten Commandments of Good Speaking

Having had many opportunities to bore audiences myself, and having myself been bored by countless other speakers, I believe that I can now state the fundamental commandments of effective speaking.

1. Be relaxed. Show that you are relaxed by pacing back and forth across the stage.
2. Be informal. Comb your hair or clean your ears from time to time, to maintain a proper air of informality.
3. Be casual. Start by dressing casually. (Loud sport shirts are nice; tank tops are better.) Continue with a casual opening. (“Well, girls and boys, sit back and relax while I lay on some new info fresh from old Mama Nature.”)
4. Be memorable. Your audience will be sure to remember you if you successfully develop a memorable characteristic. A pronounced tic would be useful. Make faces. Stare at the ceiling. Close your eyes for extended periods (which will also improve your concentration).
5. Use hand gestures to attract attention. It helps to pretend that you are trying to flag down local aircraft.
6. Use distinctive language. Just as professional athletes discovered the powerful effectiveness of a “you know” added to almost all sentences, scientists too can be remembered for their linguistic abilities. I recall one scientist who became known for his elegant language by the simple device of inserting the word “elegant” into every second sentence.
7. Speak softly. If you rudely awaken the sleepers, they may retaliate by asking nasty questions during the question period.
8. Mumble. Only when your results are absolutely incontrovertible should you speak clearly; otherwise, mumble.
9. Use slides that each illustrate many points. A slide with only one salient point is an insult to the intelligence of the audience.
10. If you have been asked to give a 10-minute presentation, talk for 30 minutes. Only thus will the audience, and especially your colleagues on the panel, be impressed with the vast extent of your knowledge.

### Slides

At small, informal scientific meetings, various types of visual aids may be used. Overhead projectors, flip charts, and even blackboards can be used effectively. At most scientific meetings, however, 35-mm slides are the lingua franca. Every scientist *should* know how to prepare effective slides, yet attendance at almost any meeting quickly indicates that many do not.

Here are a few of the considerations that are important. First, slides

should be designed specifically for use with oral presentations. Slides prepared from graphs that were drawn for journal publication are seldom effective and often are not even legible. Slides prepared from a type-written manuscript or from a printed journal or book are almost never effective. It should also be remembered that slides should be wide rather than high, which is just the opposite of the preferred dimensions for printed illustrations. Even though 35-mm slides are square (outside measurements of 2 × 2 inches or 50 × 50 mm), the conventional 35-mm camera produces an image area that is 36.3 mm wide and 24.5 mm high. Thus, horizontally oriented slides are usually preferable.

Second, slides should be prepared by professionals or at least by use of professional equipment, such as lettering devices and press-on letters (Letraset, Prestype, etc.). Slides prepared with standard typewriters are almost never effective; the lettering is simply too small. (Use of an IBM Orator typing element, which types in large capital letters, may produce satisfactory results.)

Third, it should be remembered that the lighting in meeting rooms is seldom optimum for slides. Contrast is therefore important. The best slides are made with white lettering on a blue background.

Fourth, slides should not be crowded. Each slide should be designed to illustrate a particular point, or perhaps to summarize a few.

Fifth, get to the hall ahead of the audience. Check the projector, the advance mechanism, and the lights. Make sure that your slides are inserted in the proper order and in proper orientation. There is no need for, and no excuse for, slides that appear out of sequence, upside down, or out of focus.

Normally, each slide should make one simple, easily understood visual statement. The slide should supplement what you are saying at the time the slide is on the screen; the slide should *not* simply repeat what you are saying. And you should *never* read the slide text to the audience.

Slides that are thoughtfully designed and well prepared can greatly enhance the value of a scientific presentation. Poor slides would have ruined Cicero.

## The Audience

The presentation of a paper at a scientific meeting is a two-way process. Because the material being communicated at a scientific conference is likely to be the newest available information in that field, both the speakers and the audience should accept certain obligations. As indicated above, speakers should present their material clearly and effectively so that the audience can understand and learn from the information being communicated.

Almost certainly, the audience for an oral presentation will be more diverse than the readership of a scientific paper. Therefore, the oral presentation should be pitched at a more general level than would be a written paper. Avoid technical detail. Define terms. Explain difficult concepts. A bit of redundancy can be very helpful.

For communication to be effective, the audience also has various responsibilities. These start with simple courtesy. The audience should be quiet and attentive. Speakers respond well to an interested, attentive audience, whereas the communication process can be virtually destroyed when the audience is noisy or, worse, asleep.

The best part of an oral presentation is often the question and answer period. During this time, members of the audience have the option, if not the obligation, of raising questions not covered by the speakers, and of briefly presenting ideas or data that confirm or contrast with those presented by the speaker. Such questions and comments should be stated courteously and professionally. This is not the time (although we have all seen it) for some windbag to vent spleen or to describe his or her own erudition in infinite detail. It is all right to disagree, but do not be disagreeable. In short, the speaker has an obligation to be considerate to the audience, and the audience has an obligation to be considerate to the speaker.