

Chapter 11

Giving a Talk

*You are now ready to start your speech. . .
Do not thank the Chairman or thank the audience.
Do not attempt to tell them that you are pleased to be there,
and above all do not elaborate on your lack of skill as a public speaker.
Audiences do not like speakers to apologise.
They find it embarrassing.*

— PETER KENNY, *A Handbook of Public Speaking
for Scientists and Engineers* (1982)

*The utterance should not be rapid and hurried and consequently unintelligible
but slow and deliberate
conveying ideas with ease from the Lecturer and
infusing them with clearness and readiness
into the minds of the audience.*

— MICHAEL FARADAY¹⁸, *Letter to B. Abbott* (11 June 1813)

*A Lecturer falls deeply beneath the dignity of his character
when he descends so low as to angle for claps
and asks for commendation
yet have I seen a lecturer even at this point.*

— MICHAEL FARADAY¹⁸, *Letter to B. Abbott* (18 June 1813)

*The Three Rules of Public Speaking:
Be forthright.
Be brief.
Be seated.*

— SUSAN DRESSEL AND JOE CHEW, *Authenticity Beats Eloquence* (1987)

¹⁸In [297].

The previous chapter described how to design a talk and prepare the slides. Now I turn to the process of giving the talk.

11.1. Preparation

Having written the slides, you need to decide what you want to say while each slide is displayed. You should explain and amplify what is on the slides rather than simply read them word for word, and add anecdotes, stories and humour as you feel appropriate. If you are an inexperienced speaker you should find it helpful to begin by writing the talk out in full sentences, taking care to include everything that you want to say. This text should not be used for the actual presentation, since reading from a prepared text always sounds unnatural and stilted, but should be the basis for preparing notes from which you work. I like to write on the backing paper for each slide the key words and phrases that I will use to introduce and explain the slide. I use these notes when practising, but I find that I usually know them by heart by the time of the talk. If I give the talk again a few weeks or months later, the notes save me a lot of preparation time. The notes can alternatively be written onto prompt slides inserted between the real slides and numbered specially (1a, 2a, etc.). A few of the prompt slides can even be displayed on the projector if the occasion demands it. Whatever approach you use, try to use the initial period of planning to make your language more vivid by finding synonyms for frequently occurring words and developing colourful imagery.

Most experienced speakers are happy if the audience go away having understood and remembered one point or idea from the talk. You should therefore try to emphasize just one or two key points, repeating them in different words and at different points in the talk, to ensure that they are taken in.

Make sure you know how to pronounce all the technical terms and names that you will use in the talk, since mispronunciation can be embarrassing for both you and the audience.

Obviously you should practise the talk, but how much practice is needed varies from person to person and also with experience. I need to practise my talk, speaking aloud, two or three times before I am happy with it, but I find that too much practice can make the talk too slick and lacking in spontaneity. It is important to time each practice talk, so that you can adjust the length to avoid overrunning or finishing very early. For an inexperienced speaker, it is very helpful to give a practice talk in front of friends and colleagues, especially if they can be persuaded to offer constructive criticism.

Needless to say, it is vital to ensure that your slides have been correctly

prepared and that you do not lose them on the way to the venue. This way, you should avoid the embarrassment of the professor who began his talk at a major conference only to realise that his secretary had photocopied onto the paper backing sheets and not the slides themselves!

On the day of the talk or earlier, I strongly recommend going in advance to the room where the talk will be given and investigating the following questions.

- How big is the room? How loud will you have to speak to be heard? (Remember that a voice sounds louder in an empty room, because bodies absorb sound.) Will a microphone be used? If so, it will almost certainly be a clip-on type, possibly with a cigarette packet-sized unit that you must put in a pocket or clip onto a belt; make sure you are suitably attired. A hand-held microphone, occasionally encountered, is difficult to hold at a constant distance from the mouth while you move around, and makes it difficult to talk while you change slides.
- What pointing strategy will you use: to point at the screen or at the slide on the projector? The screen may be too big or far away to point at with a traditional metal or wooden pointer, though a laser pointer may still be usable. Laser pointers are difficult to use effectively: they need to be held very steady to avoid shake and the unpredictable, short-lived appearances of the (usually red) dot at different points on the slide can irritate the audience. If you do point at the screen, take care not to talk into the screen, or your voice will not project into the audience. If you point at the slide on the projector use a pen or pointer rather than a finger, and lay it on the projector if possible to avoid shake.
- Where will you put your pile of slides? Usually, there is a suitable table close to the projector. The location of the table and the projector will determine where you stand as you give the talk. Consider whether it is possible to move them to a better position. Try not to walk across the projector's image, though this is often unavoidable if you are using two projectors.
- Is the projector working and do you know how to use it? Find the on/off switch for the projector (sometimes a nontrivial task!). Put a slide on the projector and check that the projector is correctly aligned and sharply focused. Check if there is a spare bulb and how it is accessed. Find a place to stand where you will not block the audience's view of the screen. If there are two projectors, compare the clarity and size of their images, and if one is clearly superior consider using it as the master projector rather than alternating between the

two. Put a transparency on the projector and see if it slips; if so, it will need holding in place with a coin or eraser (or the projector can be propped up with a folded piece of paper under its legs).

- Where are the light switches? The chairperson should take care of extinguishing the lights near the projector screen, but you might have to step in if he or she is unprepared.
- Where is the chalk (if there is a blackboard), or where are the pens (if there is a whiteboard)? You may want to write on the board to explain something more fully, or in answer to a question. You may need to correct or add to a slide, so have your pens handy.

This reconnaissance not only prepares you for most eventualities, but makes you feel more confident in the run-up to the talk because you *know* that you are prepared.

On the day of the talk, if you are not the first speaker you have an advantage in that you can observe the other speakers and note and avoid any mistakes they make in their use of the equipment and the stage.

Just prior to the talk, it may help to take a few minutes of “quiet time” (if possible), in which you focus on the main points you wish to convey and on how you will deliver the talk.

11.2. Delivery

Try to give a dynamic presentation that conveys enthusiasm for your subject. The total amount of time that you are taking from the audience (size of audience \times length of talk) may amount to many hours, so you should make every effort to give an inspiring and professional presentation.

Two of the most common and easily avoided mistakes are to speak too quickly and to speak too quietly. Most people can be heard at the back of the room provided they face the audience and remember to speak more loudly than usual. Asking “Can you hear me at the back?” should not be necessary; it should be possible to judge from the sound of your voice and the faces of the audience whether they can hear. You should speak more slowly than in normal conversation: Kenny [149] suggests not more than 100 words per minute, while Calnan and Barabas [50] suggest an upper limit of 120 words per minute. Following this advice is not easy because nerves tend to cause us to speak more quickly than usual. Moreover, when in full flow of explanation we may feel we have so much to say that we must rush to fit it all in; practising beforehand should preclude this feeling by giving confidence in the timing of the talk. One of the reasons for speaking slowly, particularly in a large room, is that when we raise our voices the

different types of sound scale at different rates. For example, we cannot increase the volume of the consonants f, k, p and t—just that of the vowels around them. Therefore a slower rate of delivery is needed to keep our speech understandable. Of course, it is also important to keep in mind that the audience may contain people whose first language is not English and for whom understanding spoken English presents difficulties.

Avoid um's, ah's and other sounds designed to fill the gap between one sentence and another. Pause instead. Pauses give the audience a moment to digest what you have just said and to anticipate what is coming next. They give you time to sense the mood and reaction of the audience and to gather your thoughts. Pausing while changing a slide gives the audience a chance to ask questions (if you do not want questions during the talk you can ask that they be held until the end). Note that a pause never seems as long to the audience as it does to the speaker.

For variety, instead of stating a fact try posing it as a question and then answering it: "Why doesn't it suffice to look at the eigenvalues? Because the matrix is highly nonnormal." Anticipate the audience's line of thinking with phrases such as "You may be wondering why..." The talk can be enlivened by the use of analogies, either from the technical field under discussion or from life in general.

Look at the audience as much as you can, trying to cover the whole audience. Eye contact is vital if you are to build up a rapport with the audience and maintain their interest. If you stare into the screen or at the projector you will miss the feedback given by the faces in the audience. Never turn your back on the audience, even when pointing; a sideways stance allows you to look at the screen or the audience with small movements of the head.

A tip I learned from a drama teacher is to exaggerate gestures made with the hands or arms: pointing with a fully stretched arm is more effective than pointing with a hand.

Nerves are perfectly natural and affect all speakers. They can be employed to advantage because they generate the energy necessary for an effective talk. Taking a few deep breaths before beginning to speak helps to control nerves. Provided that you have prepared properly, nerves should disappear once the talk is underway. Remember that the audience are on your side and want you to succeed, so do not be daunted by them.

Vary the pitch of your voice, mainly downwards, to maintain the listeners' interest. Speaking in a monotone is a sure way to send an audience to sleep. Watch out for the tendency for nervousness to cause the voice to rise in pitch, because of tightening of the muscles around the throat and voice box. Variations in the speed and rhythm of your speech are also worth aiming for.

Finishing on time is important. Overrunning indicates a lack of profes-

sionalism and is apt to lose you the audience's attention, as they ponder the coffee break, the next talk or lunch. At a conference, exceeding your time is particularly discourteous as it either takes away time from the next speaker or causes the carefully worked out schedule to be upset (a particular nuisance if there are parallel sessions). I recommend writing the finishing time in your notes before you begin. It is easy to forget, and the simple mental calculation of when you should stop can be difficult when you are speaking.

Time seems to pass more quickly for the speaker than for the audience, which is one of the reasons why some speakers overrun. To keep yourself aware of the time it is a good idea to remove your watch and place it on the table next to the slides. You can then regularly glance at the watch without the audience noticing.

Signal that the end is coming to awaken the interest of the audience and to increase the chance of your final message be remembered. If the end of the talk is well constructed it should be obvious when you have spoken your last sentence, but you may want to add "thank you" or "thank you for your attention", particularly if the chairperson seems to be dozing! Let the chairperson ask if there are any questions and select the questioners. Immediately asking for questions yourself precludes applause and takes listeners' thoughts away from your concluding sentences. In a large room, repeat a question on receiving it. This ensures that all the audience hear the question and gives you time to think of an answer. If you are not sure how to answer the question, it is perfectly acceptable to say something like "That's a very interesting question to which I don't know the answer", perhaps adding "Can we talk about it afterwards?" One word answers "Yes" or "No" are acceptable, and allow time for further questions. Do not give answers so long that they sound like a second lecture.

It is tempting to relax at the end of your talk, which can cause you to lose concentration during the question and answer session. However, you need to be fully alert to answer difficult or unexpected questions, and if you handle questions poorly you will leave the audience with a negative impression of your work.

You may like to prime one or two friends with questions, as one question is usually all it takes to break the ice and start a stream of questions.

Some more mistakes to avoid:

- Don't put a sweaty palm on the slide. It will produce a blotch on the screen that gradually fades before the audience's eyes.
- Avoid blocking the path of light from projector to the screen as well as the audience's view of the screen. I remember one speaker being

The Ten Commandments of Giving a Talk

1. Design the talk for the audience.
2. Prepare thoroughly and rehearse the talk.
3. Produce clear, legible slides.
4. Arrive early and check the lecture room.
5. Speak slowly and loudly.
6. Be enthusiastic about what you say.
7. Look at the audience as you speak.
8. Don't fidget with the slides or the pointer.
9. Finish on time (or early).
10. Answer questions courteously and concisely, and admit it if you don't know the answer.

Figure 11.1.

asked by a member of the audience “Can you pace nervously back and forth so that I can see the screen?”

- Avoid noisy slide management. If the slides have backing sheets, tear them off before the talk (if you don't, the act of tearing off a backing sheet does at least create a necessary pause). If you keep the slides in a ring binder, don't open and close it between each pair of slides.
- Don't leave the screen blank for more than a few seconds, as this may distract and dazzle the audience. Turn the projector off or put a piece of paper on the projector.

Figure 11.1 summarizes advice on preparing and delivering a talk.

Finally, it is important to appreciate the role that talks play in a research community. They are the focus of the community's interactions and a celebration of its achievements and they bring the subject to life. Talks provide an opportunity to gain insight into a researcher's work and personality that cannot be obtained from the printed page. Every subject has its star speakers who are renowned for the quality of their talks. You can

learn a lot about your subject and about giving talks by listening to these people.

11.3. Further Reading

Excellent advice on both writing and giving a talk can be found in various places. In “How to Talk Mathematics” [123], Halmos addresses advice to the young mathematician, but what he says about such topics as simplicity, detail, organization and preparation should be read by all mathematicians (see the quotation at the beginning of the previous chapter). Forsythe [82] gives suggestions to students on how to present a talk about a mathematical paper. In *A Handbook of Public Speaking for Scientists and Engineers*, Kenny [149] discusses all aspects of public speaking for the scientist, including preparation of material, choice of visual aids, and presentation. He recommends tongue twisters for the busy scientist to improve articulation! The chapter “Speaking at Scientific Meetings” in Booth’s *Communicating in Science* [36] is full of good advice. Turk’s *Effective Speaking* [279] is a general guide to speaking; it reports research findings on topics such as audience psychology, memory and non-verbal communication. Calnan and Barabas [50] have written an excellent guide to *Speaking at Medical Meetings*, most of which applies to any form of technical speaking.

Byrne [48] and Garver [102] both offer practical advice on preparing and giving technical presentations. A transcript of a (presumably imaginary) talk that breaks so many rules that it is funny is given in “Next Slide Please” [10]. The American Statistical Association gave workshops on improving technical presentations at its 1980–1982 annual meetings and the material that emerged from the workshops is summarized in “Presenting Statistical Papers” [86]. Common mistakes in using an overhead projector are discussed by Gould in “The Overhead Projector” [113], and in “Visual Aids—How to Make Them Positively Legible” [114] he discusses the choice of letter size for slides, pointing out the effects on legibility of room layout and screen size and positioning. There are many general books on public speaking and much of what they say is relevant to scientific talks. One of my favourites is Aslett’s *Is There a Speech Inside You?* [11].

An aspect of public speaking that is often overlooked is proper use of the voice. Two useful books in this respect are Berry’s *Your Voice and How to Use It Successfully* [29] and Rodenburg’s *The Right to Speak* [237], both of which contain advice on pronunciation, breathing and relaxation.

Memory systems can help you to remember your notes, or facts and figures not shown on the slides. See any of the books by Buzan or Lorayne, including [46], [183], [184].