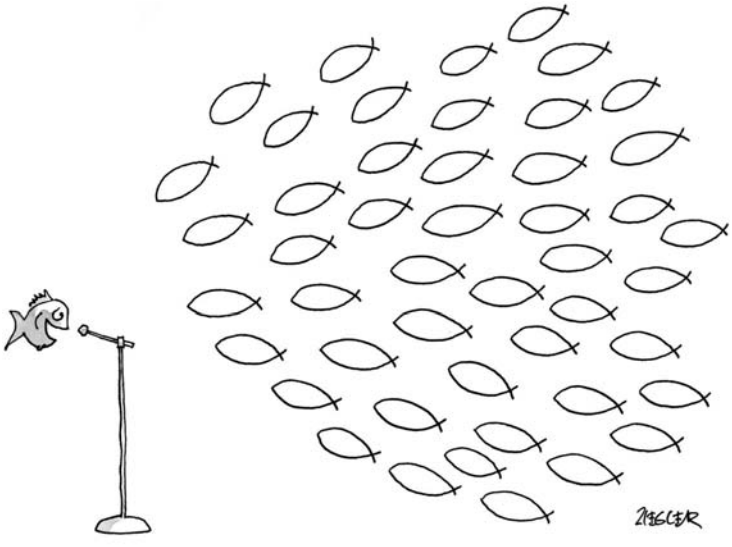
1 Audience



"Whew! Tough crowd."

This chapter highlights key points about the audience that need to be considered before you attempt to plan the presentation in detail; it also gives guidance on how to overcome the first sign of nervousness resulting from anticipation of who might be coming to hear you speak.

Understanding what audiences expect

When planning a scientific presentation, it is worth thinking about audience expectations from the outset. If you empathise with them, you will ensure that the way you construct and deliver your talk will satisfy their needs and avoid creating antagonism towards you.

> ! Audiences have a fixed idea of the time allotted to a talk and will rarely tolerate a time overrun.

Plan to keep within a specified time by controlling the number of slides used, and by rehearsing the talk.

Imagine yourself listening to your own talk

This introduces the idea of a presentation as a selling exercise. Successful marketing is based on finding out what the customer wants and identifying benefits for them. Just trying to sell what you think the customer ought to want rarely works. So if you put yourself in the shoes of the audience you will be able to tune your talk to their needs and interests. This requires some research beforehand. If you are invited to give a seminar at another institution, you should find out something about the department or company that you will be visiting and tailor your talk accordingly. Similarly for conferences, a review of the programme will help you to present your talk in the correct context for the audience. For example, there may be several presentations that cover the same subject material, so there is a danger of the introductions from each different speaker saying the same thing. In this case, a different way of looking at the subject background would break the monotony and keep the audience alert.

Your target audience

Who will be in the audience for your talk – in other words, who is the talk aimed at?

Most scientists give their first presentation to colleagues as part of their graduate education, then move on to reporting the results of their work at internal lab meetings. Over the course of their subsequent careers they will be asked to speak at short conference or workshop sessions, formal seminars and to contribute keynote conference speeches (generally in that order).

Each of the above stages form part of an apprenticeship in public speaking requiring, among other things, a sense of the particular needs of each audience. Most of your audiences will be scientists working on similar problems to you; a significant number will have a specialist interest in your work as colleagues or competitors. You may occasionally need to deliver a talk to scientists from totally different disciplines or an audience without any science training at all. Although every one of the above scenarios requires a common standard of presentation and clarity of content, there will obviously need to be a change in emphasis between background material and the research findings.

A specialist audience does not want a long introduction to what they know already and will be eagerly awaiting the data. Since the specialists are likely to be well acquainted with the experimental techniques under discussion, they will probably have strong views about the conclusions drawn from the findings presented. All of these points drive some speakers to make their talks as complex as possible in order to impress their peers, as well as to build a defensive shield against attack. They fire off an unstructured barrage of figures and complex diagrams and often overrun the allotted time for their presentation. The end result is a talk whose message cannot be properly evaluated, even by the experts who the speaker is trying to impress.

Good speakers can introduce a subject, even to a specialist audience, without any sense of being patronising or "dumbing down". They do not, however, commit the cardinal error in their introduction of using up too much of the time reserved for presentation of the more complex data and their interpretation.

> *A single exception to this comes to mind: a prestigious biochemist giving a one-hour seminar in a major US medical centre managed to get away with spending the first twenty minutes telling a slightly off-colour joke (something to do with his wife and photographs) totally unrelated to his subject. He then proceeded to dazzle the audience for the remainder of the time with a well-crafted presentation. Although entertaining, we would most certainly not recommend this approach!*

Increase the complexity of your material seamlessly as you move into the main body of the talk allowing everyone to keep up. As with all presentations, variety adds interest, so there will be situations in which a more dramatic introduction may be more appropriate to capture and hold the attention of the audience.

! Think of the talk as a flight in an airplane: taxi gently, then make a rapid but smooth takeoff, spend most of the time at cruising altitude, then gently descend and land.

! If you scan the audience and find some looking bored, distracted or even asleep, you and your talk may not be at fault.

Some may have personal problems that take their mind off science, have suffered from lack of sleep (after a conference social event perhaps?) or may simply look that way even when they're interested. Ignore these intrusions into your train of thought and don't let them distract you from your talk.

> *One department head used to sit in the front row and feign sleep during seminars to deliberately play games with the speaker. He would then "wake up" at the end and ask some highly effective questions – luckily, most speakers were aware of this beforehand.*

Should I worry about who will be in the audience?

A major source of anticipatory nervousness in a speaker is the thought of who might be in the audience for their talk. One of the most common fears arises from having to present in front of friends and work colleagues, as opposed to complete strangers. Presumably they fear the stigma of self-humiliation in front of people who will be around them for a long time after the talk has ended. At least they will probably never see the strangers again.

The techniques described in detail in Chapter 4 – "Controlling nerves" and on the DVD-ROM will help to control this common problem with audiences.

One particular fear (raised frequently by delegates attending our courses) is that of speaking in front of distinguished experts in the audience. This "seniority perception" anxiety is largely due to lack of confidence in the speaker's own knowledge and ability, and the fear of being exposed by ruthless questioning. Although the latter point is covered in the "Handling questions" chapter and on the DVD-ROM, "seniority perception" anxiety as a specific problem is discussed in the following paragraphs.

Presenting can be daunting to scientists at the early stages of their careers. One reason is because they are afraid of making a bad impression on senior people in the audience who may have a direct influence on their future employment. This is a natural response, particularly if you are faced with a Nobel Laureate, or equivalent, in the seminar audience. Even the accomplished physicist Richard Feynman was taken aback before delivering a seminar at Princeton as a young man, when Albert Einstein arrived quietly and sat down in the front row.

Nervousness of this type is of course all in the mind. It follows that a change in thinking from negative to positive is required to control it from the outset.

Realise that you should know more about your own data than anyone else

Senior people might be more interested in the science than in you in particular. They will judge the material by the same standards as everyone else, so it is up to you to be as rigorous as possible in your coverage of new data and its interpretation.

Sometimes the presence of audience members with a political agenda can create problems. They may be scientists who are using you as a proxy to fight a war with your supervisor and will be deliberately critical of your talk. The only way to deal with this and "seniority perception" anxiety is to adhere to the following:

! Make sure the talk is interesting, informative and runs to time.

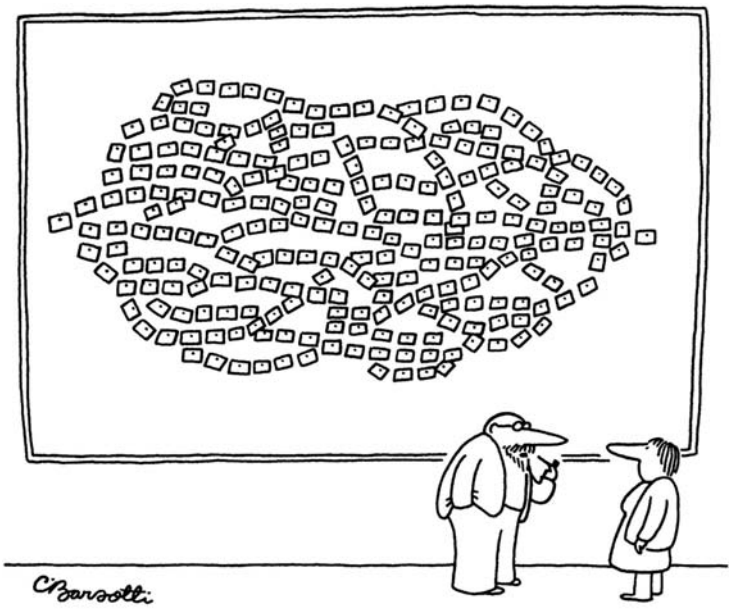
! Make sure that you know your material.

In this way, you will bring the majority of the audience on to your side, probably including the senior people, and in doing so will isolate any individual with a different agenda.

Preparation is all!

A colleague once told the story of how a relatively junior scientist gave a sloppy presentation at an international conference and was humiliated by a major scientific figure with the words "my dear boy, this field is hard enough for the professionals, let alone amateurs". This nightmare scenario was brought about (although the response was unnecessarily harsh), by not caring about the audience and its needs.

2 Planning the talk



"It's plotted out. I just have to write it."

This chapter covers the process of scoping out a presentation using a set of logical guidelines. If these are followed, along with those highlighted in subsequent chapters, the end result should be a coherent story that is delivered within the time period available for the talk (e.g. one-hour seminar or fifteen-minute conference talk).

The time constraint: cutting the cloth to fit

Before getting into detail about the preparation of the talk itself, we must stress the need to keep it within a defined time limit. This (and many other points raised in this book) may seem obvious and almost unworthy of comment, but it still amazes us how so many of our course delegates give their prepared talk with far more slides than could ever be presented within the allotted time. This of course applies to speakers doing a talk for real, including many who should be experienced enough to know better.

For the purposes of this chapter and the next on selection of material, we define "slides" as units of visual material displayed to the audience. These will be mainly digital slides created using PowerPoint software, but there will be circumstances where a chalkboard, flipchart or overhead projector will be used instead. In these cases, the time taken to draw on the board/chart (or even laying out the overhead by hand) will slow the talk down compared to when digital slides are used.

! Determine the maximum number of slides that can be comfortably delivered within the allotted time.

The following table gives a rough guide for different types of presentation based on an average slide rate of slightly less than one per minute. These figures do not have to be adhered to exactly, of course. Some slides can be lingered over for most of the talk, so the actual number used might be very low. Alternatively, filler slides may be used to break the talk into logical sections and may last for much less than a minute, so the final number may even exceed the maximum quoted. Common sense must prevail – the number must realistically match the time available for the talk.

Type of talk	Duration (minutes)	Time for questions (minutes)	Suggested working number of slides
Conference/ workshop session	10	5	7–9
Formal seminar	45–50	10–15	30–40
Keynote speech	30	0–10	20–25
Business presentation[a]	60 maximum	Ad hoc	<20

[a] The business presentation may involve a description of the presenter's company, key personnel and technology. These meetings nearly always stimulate questions throughout the talk, thus derailing any plans for keeping to time. Since time is in short supply for busy executives, it pays to keep the presentation as succinct as possible. A solution is to incorporate fewer slides than would normally be the case for a conference or seminar session of this length.

This thinking also applies to internal lab meetings, where the data will be subjected to detailed probing by the lab head and rest of the group. Time

overruns annoy these people because the lab meetings are normally held first thing in the morning, or at lunchtime, so they get anxious to return to their experiments while there is enough time left in the day.

Turning your material into a story

A dry recitation of facts does not make a good talk. Since science deals with facts, there is a real danger that presenters will fall into this trap. It also occurs in areas outside science, including tourism. Who has not been bored by a poorly trained guide who just lists dates and places without any context or human interest? This is why crafting the talk into a story is of fundamental importance. We don't of course expect scientific talks to be works of fiction (despite some high-profile cases of just that in the last few years). The story format conveys the key message (or messages) in a way that human beings can absorb. Many speakers do not think in this way from the outset, so the resulting talk can be formulaic and boring.

! Identify the key message you want to convey and build the talk around it.

The ability to abstract the key message from a collection of research material is directly related to the degree of understanding of the research itself and why it was performed in the first place. A presenter should be able to summarise the essence of their work in one or two sentences. Obviously this process will exclude subtle nuances and complexities, but it is not designed for that. It is a thinking exercise that forces the speaker to move away from the fine detail to a higher-level view of the material. Employ this at the planning phase to create a framework on which to build your talk.

> *In 1993, a request was made to the Science Minister in the British Government to contribute money towards developing the Large Hadron Collider, a machine designed in part to prove the existence of the Higgs Boson. The Minister (a history graduate) then asked the physics community to provide, on a single A4 sheet of paper, a description of the Higgs theory and why it was important. Five winning entries were received, including an analogy comparing the Higgs field to a cocktail party with Prime Minister Margaret Thatcher as the guest of honour. Although the story is quite entertaining, there is a clear lesson here about reducing huge complexity to a relatively*

simple description; furthermore, the use of analogy to convey the key message is a powerful tool for the presenter and is effective with both specialist and lay audiences.

Structuring the talk

The basic structure of the talk needs boundaries so that you can guide the audience in whatever direction you want. The route and destination must be planned carefully, otherwise the audience will be lost and the talk will be a failure. Once you have defined the limits of the talk (number of slides and so on) and articulated the key message, the next stage involves establishing a logical sequence.

There seems to be a good consensus among writers on scientific presentation about just what that logical sequence should be. We like the succinct version offered by the late Vernon Booth in his book *Communicating in Science* (see *Further reading*):

Why you did this work
How you did it
What you found
What you think it means.

WHY YOU DID THIS WORK

Scientists have a habit of asking questions; it's fundamental to their profession – "How does this work?", "What is the nature of this phenomenon?" and "Why does X operate and Y doesn't?" This habit lends itself naturally to scientific presentations, where a question (or series of questions) is used to guide the audience towards the key conclusions that they can take away from the talk.

! Formulate a question(s) to set the talk in the right direction.

The question is normally posed after an introduction to the topic to be presented. This will be a high-level view to start with, perhaps with a historical background, or an analogy with everyday experience. If you are speaking in a conference, you could briefly relate your talk to the theme for your session to put it in context. Keep the review of the conference theme clear and brief and try to minimise the inevitable repetition that will occur with the other speakers in that session.

One of our delegates introduced his work on stereo effects in the auditory nervous system by highlighting the need for stereo hearing when crossing a busy road. This simple everyday analogy is a good example of lateral thinking that allowed the audience to immediately place his work in the right context.

HOW YOU DID IT

This is obviously similar in concept to the *Materials and Methods* section of a publication, but has to be treated carefully. Unless the experimental approach is the subject of the talk, this section should not be dwelled upon for too long. This is an area where it is tempting to list every aspect of the experimental procedure in great detail. Resist the temptation and only go into further detail if asked, either during questions, or outside the session.

WHAT YOU FOUND

This results section can prove the most challenging since there is often a need to distil a large amount of data into a form that can be presented in an intelligible way over the time available. This is possible through the use of appropriate graphics, overlays and animations. These are discussed in Chapter 3 and in the associated DVD-ROM material.

You need to use some judgement about which data are essential to support your argument; do not show every piece of data you can find because it only tires or confuses the audience. Many speakers are anxious about finishing the talk too early, or not appearing to have done enough work, and fill out the talk with totally unrealistic numbers of slides. If the maximum number of slides available is established at the outset, this should not be a problem. Of course, there may not actually be much data available, so there is more room for the introduction and conclusions, particularly a discussion of what needs to be done next.

WHAT YOU THINK IT MEANS

This concluding section must be punchy and succinct, as it could be the one thing that the audience remembers and takes away with them. This section is also the one where Summary and Conclusions often get mixed up together. The Summary lists the experimental findings that the speaker thinks are important to support the key message of the talk. This section is then followed immediately by the Conclusions section, where an interpretation of the findings is presented on a single slide.