

A Talk to Remember

Bulletin of the British Ecological Society 2012 43:2

(or how to give a better presentation than your supervisor)

Emma Sayer & Andrew Beckerman

How often have you left the room after a research presentation feeling like it was time well spent? How many talks have you attended that made such an impact that you can remember them to this day? How often have you been so impressed by someone's talk that you've started taking an interest in their research? My guess is that the answer to all three questions is: "Not often enough". This is a real shame because every talk is a precious opportunity to communicate our work to others. Shouldn't we all aspire to give one of those talks that leaves the audience thinking: "Wow! What a great piece of research"?

As scientists, we're taught to be objective, precise, and to stick to the evidence – this is the best way to do research properly – but is it the full set of tools we need to communicate our findings to others? Whether you're presenting to colleagues within your department, at an international conference, or to the general public, a dry and completely factual talk will not grab most people's attention. In a setting like the BES annual meeting, where your audience will hear numerous talks over several days, it's a huge advantage if you can give a good presentation that sticks in people's minds. So what is the best way to do that? What makes a talk *really* good? We're going to surprise you (perhaps) and make the point that what makes a really good talk is *you*.

This is not an article about slide design – partly because most of the principles are pretty much the same as for research posters (see the June 2011 issue of the *Bulletin*) – but mostly because there is one VERY important difference between research posters and presentation slides: the slides in a research presentation are only a *visual aid*, whereas a poster is a visual representation of your work. So the first important thing to remember in this PowerPoint-dominated world is that *you* are the presenter and your slides are an aid, not a crutch.

The best way to test how dependent you are on your slides is to try and give the talk without them. Can you do it? What about a presentation with only pictures and figures, but no text? A great presentation can involve only the most important figures showing a particularly significant pattern in the data. If you need more than that, then you may be relying too heavily on your slides (and including too much detail). In fact, slides can sometimes even distract

you and the audience from the main points you are trying to communicate, especially if they're badly designed. A summary of slide design guidelines is given in Box 1, but from here on in we'll concentrate on the three elements of a really good talk: structure, content, and delivery.

1. Structure

Story-telling

The use of the word 'paper' to refer to a talk at a conference is completely misleading because presenting 'a paper' is exactly what we shouldn't be doing. The rigid structure of research papers doesn't lend itself very well to oral presentations, and neither does the level of detail. If at all, think of a *Nature* or *Science* paper: start with a concise introduction to set the context and show the importance of the study; follow it by the briefest possible description of methods; then the main results and discussion (together); and finish with the overarching conclusions of the study. You're aiming to tell a story about your research and to get a single strong message across. All the memorable research talks we've heard had this in common: they were narratives in which the speaker lead the audience step by step through a logical train of thought to the 'right' conclusion (i.e. the one the speaker wanted us to reach). The best presentations leave you with an understanding of the research, and just enough knowledge of the methods to convince you that the presenter really knows what they're talking about.

In fact, how to convey what you did is an important feature of talk structure. Imagine a complex piece of research consisting of several experiments and observations: Instead of presenting all the methods together, then going through all the results, as you would in a paper, you can present a story or timeline: Focus on one part of the research first (we measured X and found result Y), then show how this lead to the next set of measurements/results (Y lead to measuring Z), and so on until you get to the final take-home message. This helps your audience understand the logic behind the study and should (hopefully) allow them to draw the same conclusions. It's also potentially very entertaining to see how someone's brain works.

A critical and useful trick supporting such a presentation is to give each slide a short title that sums up the contents – biological statements or questions are good. Try to avoid slides with titles that only say 'introduction', 'results', etc. If you write the more informative slide titles on a piece of paper, you should end up (more or less) with a summary of the talk.

A Talk to Remember

Bulletin of the British Ecological Society 2012 43:2

The Rule of Three

You must have heard this one before – *Three is a Magic Number*. Aristotle first wrote about the Rule of Three in his text on rhetoric (4th Century BC), De La Soul sang about it in the 90's, and it's a much-studied phenomenon in cognitive psychology. There's something about grouping things into threes that make us remember them. Veni, Vedi, Vici; father, son, and holy ghost; sex, drugs, and rock 'n roll... sound familiar? These well-known phrases don't just happen to be in groups of threes; they are memorable and have been passed down through the years *because they are in threes*. It works in fairytales (three wishes, three little pigs), in jokes (Englishman, Irishman, and Scotsman), in slogans ('stop, look, listen'; 'work, rest, and play'), and in speeches ('blood, sweat, and tears'; 'education, education, education'). It will also hopefully work in this article (structure, content, delivery) and in your presentation...

Our brains simply find it easier to remember and process things in groups of threes. You can use this to your advantage in a research presentation by repeating the central message three times during the talk (without being too overtly repetitious – please, please, please!). It's easy to do if your talk has three parts: beginning, middle, and end (see Aristotle's *Poetics*). The most important message can be introduced at the beginning (perhaps it's the main hypothesis or the central research question), it crops up in the middle as a result (or to explain a result), and the talk ends with it as a 'take-home message'. Following Lewis Carroll: "I have said it thrice: What I tell you three times is true." In other words: 1) tell 'em what you're going to tell 'em, 2) tell 'em, and 3) then tell 'em again.

The number three 'rules' in slide structure as well. If it's possible to condense important points into three bullet-points or sentences per slide, it'll be easier for your audience to read and process the information. This has the additional benefit of ensuring that the text on each slide is kept to a minimum. And to use another magic number – never, ever, list more than seven things!

Timing

It's a major discourtesy to overrun. At conferences where there is often a pretty tight schedule you'll even hear 'tutting' from the audience when prominent members of the scientific community do it. Try to leave enough time for questions so that your audience has a few moments to think about your talk before the next one begins. One slide per minute is a good rule of thumb and time your talk when you practice. You can give yourself a time marker – this is simply a slide that (for you) marks $\frac{2}{3}$ to $\frac{3}{4}$ of the length of the talk – when you

get to this slide, you should know whether you need to skip a few things so that you have enough time to wrap up. You may even find that you have more time than you thought to emphasise those all-important conclusions. Think about how much time to spend on each section, so you don't spend ages describing the study and then rush through your conclusions. In fact, a $\frac{1}{3}$ to $\frac{2}{3}$ rule of intro to content is probably a good ratio to aim for.

2. Content

Be concise

If you know Emma, you're probably sniggering at this point (especially given the length of this article). However, in contrast to a talk, we have the luxury of being able to take plenty of time over writing this, whereas most research presentations are limited to half an hour or less. It's so tempting to put too much information in a talk, especially if the process has been long and laborious and you want everyone to see all the cool analyses you've used and all the hard work that has gone into the study. You must ask yourself what is the important message that you *really* want to get across: Is it the main result of your study? Or how you measured it? Start by deciding what you want to people to take home from your talk (maximum three things) and then work backwards from there. Only include what is relevant to the message and the few details necessary to give the audience confidence in your results. If in doubt, less detail is always better because you can expand during the talk or answer questions afterwards.

Pitching to your audience

One of the most important things to consider when preparing your presentation is to whom you will be giving the talk. A talk to a group of colleagues will not be the same as one to your mum, a class of secondary school kids, or your friends in a pub. Presentations to the public, school children, politicians, etc., will all be completely different. To give an example: imagine you've designed a new swishy model of forest dynamics and you're presenting it to other computational ecologists – they'll probably be highly interested in the equations you've used to construct the model, and the really geeky people will want to know any clever programming you've done. If you show the same equations to an audience of field ecologists, you'll see the eyes of half your audience glaze over – just before they fall asleep. Here, you might present the biological justification of model parameters and the data you've used to evaluate the output. Finally, if you're pitching to a very general (or non-scientific) audience, it may be best to show the animation of the modelled trees

and outline the predictions your model makes... in fact, this visual aid might be useful in all of the talks – combined with a simple set of three points, such a graphic conveys deep yet accessible understanding. You get the idea: the level of (technical) detail to include needs to be tailored to the audience. In all cases, avoid jargon, abbreviations and anything that is not necessary to the central message. Otherwise, many members of the audience will drown in detail and won't be listening properly when you get to the conclusions. They will be asleep.

The 'So What'

So many talks finish with a slide titled 'Conclusions', which simply lists a summary of the results (often more than three...). This is a missed opportunity to get your message across – by all means summarise the main findings, just don't leave it to the audience to work out why the study is relevant or interesting. If you fail to put your work in context, then your audience probably won't remember your talk. There are only a few cases where the relevance of a piece of research will be as transparent to the audience as it is to you. So spell it out to ensure your audience doesn't leave the room thinking: "So what?". Remember, the end is where you say what you've said, again.

'So what?' is actually a good thing to ask yourself when preparing a presentation. You probably want people to remember your research because it is in some way relevant or important (it has 'impact' beyond being worthy of publication). Maybe the results will change the current way of thinking and prompt many more questions; or they have critically evaluated a prediction; or maybe you have shown how to improve a scientific method. Whatever it is, make sure that's what you finish with. If you see members of the audience nodding, you've probably managed to communicate the relevance of your work.

3. Delivery (the third, and final point).

Structure and content (Ha! We've just told you what we've told you...) are really important. However, it's the delivery that makes a real difference between a good talk and a *really* good talk. It's all about *you*.

Enthusiasm

This is one of the best ways to engage with your audience. Most people will not get excited about a piece of research if the speaker looks bored and lethargic. It's sometimes hard to muster enthusiasm for something you've been working on for a long time, if your supervisor is pressuring you to give the

talk, or when you're moving on to something new. If you find it hard to be enthusiastic about the subject matter, you could try thinking back to when everything was fresh and new and exciting. Or try incorporating some of the really interesting stuff you're planning on doing next. Whatever you do, try and remain upbeat and populate your talk with positive statements. Don't start with a negative statement about your work, don't talk about the things that went wrong (unless they were responsible for the breakthrough), and minimise self-deprecating comments. Keep it genuine – real enthusiasm for a subject comes out of everyone in different ways, but it is always infectious. It will make people sit up and listen. It can also help with presentation nerves...

Confidence

The ability to sound confident is a really important part of good delivery – confidence in your own ability, in your study, and in your results/conclusions. This doesn't come easily to many of us and nervousness can also make you look uncertain. It can become a vicious circle: the more nervous you get, the more you gabble or stutter, and the less convincing you are, which makes you even more nervous... The first thing to remember is that *your audience can't see how nervous you are*. Nervousness can be quite hard to detect and easy to disguise.

The single best way to get over nerves and to sound confident is to give yourself enough time to prepare properly, and then practice, practice, practice. Colleagues are usually happy to help out with this, but it's also very useful to practice on someone who doesn't know your work, who isn't in your field, or who isn't even a scientist. Practice your talk with your mum, your partner, a friend, a housemate – it doesn't really matter. The important thing is to run through your talk, out loud and with an audience, a few times. Practicing out loud gives you the chance to remove stumbling blocks and unfortunate phrases. Importantly, practicing with someone will allow you to identify complex ideas that require more time or explanation. Being familiar with your presentation also prevents you from being surprised by your own slides. Get the people you practice with to ask questions – confidence in answering questions about your work not only gives people more faith in your study, but also helps with nerves. If you're presenting at a conference and you're *really* worried about questions, you must remember that this is your research and *nobody knows this stuff better than you do!* If you don't know the answer to a question, just say so...

A Talk to Remember

Bulletin of the British Ecological Society 2012 43:2

The hardest part of a talk is the first few sentences and it's really important to get a good start, so practice their delivery more than anything. Start off with an interesting statement: tell your audience what they will get out of your talk, or why you find the subject fascinating – anything that gets you into the flow and will grab people's attention.

Poise and Elegance

Feeling confident automatically gives you some 'poise and elegance' but you can improve your delivery by being aware of the impact your tone of voice and physical appearance has on the audience. Hyperactive babbling is just as inelegant as monotonic delivery. If you have to talk fast to fit everything in, then you are probably trying to say too much – cut down on the content or detail. If you're speaking in a monotone drawl then you're definitely not transmitting much enthusiasm for the subject, even if you feel enthusiastic. Short pauses between slides or statements (especially important ones) allow you to collect your thoughts and give the audience time to let the information sink in. If you have a sudden mental block, take a breath, clear your throat, have a sip of water – it usually only takes a couple of seconds to get back into the flow and your audience won't notice.

Body language is important but takes time to correct (it's really hard to stand up straight for a presentation if you slouch around the rest of the time). One thing that is quite easy to remedy is controlling how much you move. Dancing around is probably inappropriate and you don't want to stand there like a block of wood. Attempt to move with purpose. If you tend to wave your hands about when you talk, try to do something with them that doesn't involve stuffing them in your trouser pockets: clasp them in front of you, clasp them behind you, or hold onto the remote control. Only move your hands when you want to emphasise important points. Other movements to watch out for are pacing or stepping back and forth. Apparently, a good remedy for restless feet is to practice your talk while standing on a sheet of A4 paper. This is obviously an extreme restriction of foot movement but it will make you aware of how much you move around, and when it is actually necessary. Above all, practice.

Making eye contact is a classic presentation tool – it helps you read your audience and change pace or pitch. Find a few people that you know, or who look genuinely interested, and give the talk to them. It's good if they're dotted around the room so that it looks like you're talking to the whole audience and not just the front row (or the wall at the back).

Lastly, if you're aiming for poise and elegance, avoid geeky jokes or puns – there isn't anything more embarrassing than a joke that falls flat. There are very few lucky scientists who are genuinely funny and only a handful of ecologists who can get away with rubbish jokes – mostly because they've been sneaking them into talks for so long that their audience actually expects them. A good anecdote is different because it could help to make your study/talk more memorable (as long as it's relevant – and short).

Finally

Watch, listen, and learn when you attend a talk. Pick out things you really like or dislike and see if you can incorporate them into, or eliminate them from, your own presentation style. Don't assume a talk is good just because the presenter is a renowned scientist. You should know if you've heard a good or a bad talk, regardless of how many *Nature* papers the presenter has – there are a lot of very eminent researchers who give abysmally bad talks.

The bottom line is that you need to be clear about what you're trying to do when giving a talk. Communicating science is about getting a clear message across and *how* we communicate that message matters a lot. Papers, posters, and presentations are all distinct forms of communication that will help you achieve your goal but each one requires thoughtful consideration of structure, content and delivery. The ability to use a variety of methods to communicate your science (and to use them properly) is a valuable skill set that will allow you to reach the widest possible audience – and that's the best way to ensure you can continue your research career.

Written using Oxford commas, on a Mac, and with input from: Jane Wilton, Matt Heard, Bill Sutherland, Nick Isaac, Tom August. (Thanks!)

Box 1. Quality of Presentation Slides

Your slides may just be a *visual aid* but bad design can be distracting.

DOs

Follow the guidelines for poster design regarding colour schemes, contrast and text-image-space ratios (June 2011 issue of the *Bulletin*)

Keep the information on each slide to a minimum

Use templates if you have no idea where to start – but make sure the design leaves you enough space for figures and does not distract from your content

Use large fonts. You should *never* be caught saying: “You probably can’t read this at the back.”

Redraw figures to make sure the axis labels are legible and the level of detail is appropriate

Check your presentation on a different computer or face the wrath of MS PowerPoint. Does it have to be PowerPoint? PDFs of your slides are great for portability and easier to email.

Only use pie charts for politicians and children. Or just never use pie charts.

DON'Ts

Don't start with a table of contents. It's a waste of time, and it isn't ever interesting

Don't use flashy animations, garish colours, or small fonts; use tables sparingly

Don't use a different background for each slide

Don't use lots of abbreviations. Even if you explain them, people will quickly forget what they are.

Don't rely on autocorrect. It won't detect wrong words that are spelled correctly. Think 'effects' vs. 'affects' or 'asses' vs. 'assess' (Em's personally guilty of this one).



Emma Sayer is currently at the Centre for Ecology and Hydrology in Wallingford and is Associate Editor of the Bulletin.



Andrew Beckerman is currently a Senior Lecturer in the Department of Animal and Plant Sciences at Sheffield and is Chair of the BES Meetings Committee.