

SURVIVAL GUIDE FOR SCIENTISTS

Writing – Presentation – Email

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PRESENTATION GUIDE FOR SCIENTISTS

3.I Questions and interference

A question period can be quite exhaustive. Some aggressive Israeli, Dutchman or Russian is waiting at the end of your presentation to get even (we all feel misunderstood, remember). There is a lot you can do yourself to keep control over the situation.

3.I.1 Repeat the question

A golden rule for which there is no exception:

“Repeat the question and give the answer to the whole public, and not to the questioner”.

This holds for questions during your talk, as well as for questions after your talk.

I am so disappointed that questions are hardly ever (5%) repeated by the speaker. In addition the dialog between questioner and speaker develops without any involvement of the rest of the audience.

3.I.1.A Advantages

If the speaker does repeat the question, there are a number of advantages.

3.I.1.A.1 *Audience participates*

The important people usually sit in the front rows. When they ask their question they will never realize, or they do not care, that people in the back cannot hear their question. By repeating the question you draw the rest of the audience into the debate.

3.I.1.A.2 *Gain of time*

By repeating the question at length you gain time, time you need to find the right answer.

3.I.1.A.3 *Reduce effect of question*

By answering to the whole audience (pan your head slowly back and forth) you have taken back the initiative. You have explained his critical question and your answer to the whole audience. The man that asked the question does not play a role anymore. Do not look at him. Never engage in a two gentlemen's dialog.

If, after you have answered the question, you come back to the interpellator and ask him "Does my answer to your question satisfy you?" you really are asking for trouble.

3.I.2 Politeness

Never show your irritation. Try to create a situation in which people in the audience correct the situation.

Never point at somebody in the audience (saying "I explained this to you before", while at the same time pointing at him, is a deadly sin).

3.I.2.A *Crackpots*

Somebody in the audience might ask you "Don't you think that Einstein's theory of relativity is wrong, whereas my theory ..."

Answer very seriously with something like "Well, to be honest I am not aware of your important contribution. Why don't you show me at the end of my presentation the reference to the international journals where you have published this?" Spot at the same time somebody else in the audience that is eager to ask a question, and – if necessary – overrule the chairman by explicitly soliciting a question from that person: "I see you have a question. Please go ahead."

3.I.3 During talk

In some presentation formats it is permitted to ask questions during the talk. This situation is a challenge. It easily gets out of hand. You can also ask the audience a question yourself. The answers you get, or the questions you get, allow you to gauge whether you already have lost your audience.

3.I.3.A Test of audience

Do not embarrass your audience by testing their knowledge. A real social disaster is to test their level of understanding by asking a double-choice question and request them to answer it by raising their hands.

3.I.3.B Disturbing expert

What do you do if an expert question is asked, to which you know the answer, but only you and the expert are interested in the answer. And the remaining ninety-nine people will get lost if you do answer this question. "This sure is an expert, but highly technical, question. You really must be an authority on this subject. I am quite willing to discuss this after my talk. But I am afraid it would be too much asked from the rest of the audience to answer right now. So, I hope you will allow me to proceed, but again, thank you for the excellent question". Or something like that. But do not answer that question.

3.I.3.C Too many questions

If you get far too many questions during your talk, you should, by looking at the chairman, say "I am very happy with all these questions, but I really have to go on now. And I will probably use part of the question time to be able to deliver the rest of my talk."

3.I.4 At end

Even if you had questions during your talk, you will get questions at the end. If you have gone way over your time, the chairman might not allow any questions. I hope he will do that, because it would teach you the lesson to keep to your time.

Again: always repeat the question for the whole audience. Avoid having a private-like conversation with the questioner. Do not answer the question by continuously looking at the questioner. Answer the question as if it is part of your talk. So look at different parts of the audience while answering.

3.I.4.A Comments

Often (50%) questions are not asked to get an answer, but for showing that the questioner does not agree with you, or is just plain jealous. It is not really a question, but it is a comment ("I did it all before you did").

If the comment is really unpleasant or unfair, just answer with "Thank you for this comment. Are there any other questions in the audience?" If you decide to do answer his nasty comment: Answer his question without ever looking at him. Always stay very friendly and polite. You will get the audience and the chairman on your hand.

Some nasty questions you could – and should – anticipate. Have some slides ready (put them after the last slide of your talk) to back up your arguments.

3.1.5 Hostile participants

To the outside world, the community of scientists is a peaceful community, readily sharing credit and information. The truth is different. The community is just like normal life, with all the positive and negative phenomena, like jealousy, theft, lying, gossip, etc. What makes science unique is that the world 'out there' is objective and the set of rules called the 'scientific method' will in the long run separate bogus from the really good stuff. However, this in the long run, can indeed be very long. In the mean time you have to defend your 'baby' regularly.

Do not take revenge at a nasty interpellant. He is very likely a singularity. He will speak too fast. Get a red face. And use technical terms, so by default the rest of the audience is on your hand. Answer his opposition by talking to the whole audience. Repeat the question. Do not let him interrupt you when you repeat the question. Do not let him repeat his arguments. Answer decisively, clearly, loudly, and very slowly.

3.1.5.A Priority claim

You will always have people in the audience that claim that they have done it before you ("This has all been done in the former Soviet Union" or "This has all been done in the 1940's by the microwave engineers at MIT").

A good answer is the following: "I have heard this claim several times before (in this way you show he is not original). I have asked on those occasions to give me the reference where this work has been published before. Naturally, I will give due credit when this will be pointed out to me. But up to now nobody has come up with a literature reference to back up this claim. Are there still any other questions?" Now the monkey is on the back of the hostile participant.

3.1.5.B Trap

A good way to neutralize a hostile participant is to trap him. You ask him something like "Do you claim that you can prove this ...?" When he answers affirmative, you reply: "You just got yourself a new *Letter to Nature*. If I were you I would write this up immediately".

3.1.5.C Backup slides

It is always good when you expect strong opposition to have special slides available to prove your point. Put these backup slides after your last slide. If you do not need them, nobody will ever know that they were there.

3.1.5.D Humor

A good laugh is the following. You prepare a slide with a long title on the subject for which you expect the opposition. For instance a slide with as title: "This has not all been discovered before in the former Soviet Union ..." With the reasons given on the rest of the slide. You show this slide only if the anticipated opposition really materializes.

3.I.6 Hostile audience

A whole hostile audience should not come as a surprise for you. You know when you are invited in the lion's den. Rehearse very well.

An interesting trick is to power down your laptop right after your talk. Questioners cannot ask you any longer to show a particular slide.

Keep on smiling. Keep on staying friendly. Do not let them steal your talk by continuous interruption.

3.I.7 Evaluation committee

Presenting for an evaluation committee is difficult. These are once in a lifetime chances, and you can blow it all. But you also have an opportunity to gain a lot.

Committee members know a lot about you. They had to read your 20-page proposal, or your job application.

3.I.7.A Atmosphere

Be prepared for some serious opposition. The members want to show to each other that they really know what they are talking about. And it is not uncommon that they will fight over your back. Never accept an insult. Remain polite under all circumstances.

Be prepared for a serious reorganization of your talk. If you do not agree, say so, but very friendly and persistently. Talk slowly and decisively. Try to get, keep, or regain the initiative. This is the only situation where some character of talks of type **a)** is allowed.

Set traps for the members. Hesitate slightly on a subject you are absolutely sure about. If they take the bite you can show off your knowledge. Give them hell.

3.I.7.B Hostile questions

Anticipate questions and comments like: "Why should one be interested in this?" "This has all been done before." "This sounds like an iteration of your earlier research." "What results will make you happy?" "Is your ambition not too high?" When you deny, they will ask "Is your ambition not too low?"

If you know your field well, you can anticipate the majority (75%) of the nasty questions. Do not be arrogant by using sentences like: "This really is a good question." If they ask a silly or wrong question, blame it on yourself: "Apparently I have not explained this point very well. Let me put it in another way."

3.I.7.C Divide et impera

If a member is persistently nasty, try to neutralize him by showing that he is attacking the field of another member of the committee. Have them fight among themselves. Try to balance your answers and comments over all the members.

4 SLIDES

I repeat the golden rule: “Keep it simple, and then even simpler”.

Later on I will explain that whatever you do, when you start preparing your slides , start with the master slide(s).

4.A General structure

4.A.1 File size

Try to minimize the size of your presentation.

This has nothing to do with minimizing the number of slides . It all depends on how large (in bytes) your figures and graphs are. Make small presentation-quality compressed bitmap files (like jpg) out of large bitmaps (like tiff files) or out of large vectorized figures (like ps and eps).

The size minimization will help to load your slides fast (slow loading is irritating for your public) and in fast saving during preparation. Small files will also help in prolonging the life of the battery charge on your laptop.

4.A.2 Reusability

In the field of software engineering reusability is a paradigm. Structured computer languages as C++ are designed with reusability as major design goal. The ‘re-user’ can be yourself at a later point in time, or one of your group members. To make individual slides reusable they must be loosely coupled. That is to say they must be usable without reference to other slides .

If you buy a cupboard or bed from a furniture shop, your new purchase looks beautiful from the outside or front side. If you look, however, at the rear side, or under your new bed, you will discover a lot of not-painted, not-finished woodwork. The reason is economy: why spend effort (money) on something that no one ever sees.

The same applies to digital presentation slides . You can import oversized pictures, group, cut and paste and do ugly things with nontransparent boxes. As long as it happens outside the margins or below other drawings, no viewer will ever notice the chaos.

Yet this minimal, carpenter approach limits seriously the reusability. For another user your slide will look like one big mess. I have seen examples where people put the whole text of a slide in a title box. Even *PowerPoint* stupidly suggests doing so in its template for new slides. It works, but it is awful, amongst other things because the *Normal View* is meshed up. Be disciplined and try to do away with the carpenter approach. If your colleague group members still use this messy practice, correct them.

4.A.3 Composition

Composition is a matter of taste. My credo is, the less there is on the slide the better.

Out of mere stupid laziness, many presenters, when they discover during the preparation of their presentation that a slide gets too full, start to reduce the font sizes, to reduce the line spacing, to reduce the margins, etc. This guaranteed leads to disaster. Busy slides are chaotic, irritating, and poorly legible.

4.A.3.A Landscape

Always use landscape format. In this way there is less danger of clipping. The disadvantage is that you are used to writing text in portrait (as any book and journal has an aspect ratio similar to portrait).

4.A.3.B Separators

If you have to put several objects that are logically unconnected on one slide, do what the newspaper lay-out people do: use separators, vertical or horizontal.

These separators are thick, colored lines (use narrow, filled, borderless rectangles).

By using a thick vertical separation line in the middle of your landscape slide you can still mimic portrait slides. Beware that the two parts (left and right) should be connected in content. And do not use a smaller font size when you use this separation line.

4.A.3.C Plots

The rule of thumb is to put only one figure on a slide and have it occupy about one half to one third of the slide.

The rest could be caption and explaining text. Only in this way the important 60-years-old eminence grise in the back of the audience can read your slides and might offer you a position at a prestigious university.

4.A.3.D Alignment

A lot of the clutter can be reduced by aligning text and figures as much as possible horizontally and vertically and introducing separating lines. Of course, much better is to spread it out over more slides.

4.A.3.E Margins

Use the same margins for all the slides of the same presentation. The more consistent you are throughout your presentations, the less you have to change when you reuse an old slide.

4.A.3.E.1 Top

Do not use any margin at the top. Try to move things as much to the top as possible. Even at the cost of cosmetic or composition quality. People sitting in the last rows will love you for it.

4.A.3.E.2 Bottom

Use a large, to a very large margin at the bottom, dependent on the size of the presentation room. If the room has many rows (>15) and no inclined floor, 25% of the bottom will not be visible (clipping) for 2/3 of the audience. In a very large auditorium, this 25% can get as large as 50%. With the master slide you can force yourself not to use part of the bottom: put an attractively-colored band on the bottom of the master slide.

4.A.3.E.3 Left and right

Left and right text margins should be used. It is ugly when text starts right at the beginning of the slide and/or continues right up to the right side of it (text is almost flowing off the slide).

4.A.3.E.4 Large left margin

Use a very large left margin if otherwise the slide becomes unbalanced (everything is on the left, and the right is empty).

4.A.3.F Guides

Use the guides (a movable horizontal and a movable vertical line) for all your alignments. They are very handy. Try to reset them both to a default position after you have moved them to align something that should not follow your default. In this way you are always reminded of the default position of all text as you start designing a new slide. If you put your starting text there, it will make transitions from slide to slide smoother for your audience.

You should also use the guides to align text with figures. Try to align, horizontally and vertically, as many items on your slide as possible. It improves the symmetry and design, and makes the slide less busy as the eyes are guided by this alignment.

4.A.4 Credit

Credit is an important issue in science. You should always give credit where credit is due. It does not hurt to give more than due credit. Published papers are for eternity. Giving credit in papers should be done with great care. Presentations hardly live longer than a day. So you can give much more credit on your slides than in your papers. You probably know in advance who will be in the audience.

Giving credit by only mentioning the work of a colleague, but not having his name on your slide, is not impressive.

The praised participant knows that next time when you give your talk, when he will not be in the audience, you will not give him credit. So put the credit on your slide. If the slide is part of your introduction, say something like "Whenever I present this slide I notice that ...". This will give your colleague in the audience the impression that you give him credit in all of your talks.

If you publish your presentation (on a website) or distribute handouts, you must be more careful with undue or exaggerated credit on your slides.

4.A.4.A Full references

Do not put full references on your slide.

Nobody will need those details. Nowadays, with *Google* it is very easy to find the paper. So no initials, no pages, just the abbreviated journal name and the year. Example: "Smith and Johnson, Phys. Rev. Lett. (2005)". High-impact journals can even be abbreviated beyond their standard abbreviations. Be careful with "et al." if you know that the senior scientist belonging to "et al." is in the audience. A solution in such a case is: "Smith, ..., and Johnson, PRL (2005)"

4.A.4.B Advertising own work

Science is about discovering something and then publicizing it. And keep on claiming it. Your friendly colleagues in different parts of the world are very willing to take away your discovery. There are a number of tricks to advertise your own work in your own presentation. You should do it in a subtle way. As an understatement.

Advertise your work, but do it subtly. You can, when you explain your work on a slide, put in a small (this means you are modest) but still legible (yes, you are modest, but not crazy) reference to your own work. If the number of authors is small, put all the names there and abbreviate your own name to initials, and abbreviate the journal name to the absolute minimum. This is a real sign of

class: "Belly and J.L., PNAS (2005)". The only requirement is that the reference is unique enough to find it with *Google*.

If the explanation of your new findings takes more slides, put the referral there only once, on the first or last slide of the series. If you do it more than once, people will notice the duplication, and they will assume that you do not have any other papers to show.

4.A.4.B.1 Website

At the end of your talk advertise your website on the last slide. Make sure that all your papers are available there, with high-quality pdf files (not hyperlinked to journal websites, just put the files there physically, and no *Type3* fonts please). I assume you have bought your own relevant domain name for \$25 per year (which is 5000 times cheaper than the lasers you buy every year).

4.A.4.B.2 Hyperlinks

Nowadays credit and references are often given in the form of a uri ([Unified Resource Identifier](#)). Do not fully reproduce the uri if it is ugly and long. Nobody in the audience will be able to follow that link anyway. Put something more useful there: "all information and papers can be found on our website [www.mydomain.edu](#)".

http://en.wikipedia.org/wiki/Uniform_Resource_Identifier