

## Great Scientific Presentations

by Roger Wattenhofer

### Part 1: General Tips

- If you can pull off to give a talk **without slides**, you will be admired! Don't hesitate to use the blackboard (if one exists) for some parts of your talk. That said, slides do help the rest of us. The second part of this document has advice specifically for slides.
- Do *not* explain **every detail** of the work. Give an exciting talk, not a talk that lists everything that was done.
- Your talk must have parts that can be fully understood by the audience, and parts where the audience **learns something**. You want to reach everybody in the audience, whether they have little or a lot of prior knowledge.
- Maybe (hopefully) there is not enough time to show every detail? Or maybe some details are just tedious, but not really interesting? It is okay to **sketch** some parts only. If some aspect is only presented on a high level, make sure that the audience understands that you simplified for the sake of the presentation.
- On the other hand, don't do a super high level ("management") talk. You definitely must present the most **interesting technical and theoretical aspects** of the work!
- What are the **motivating examples**? What are the examples that render a naive approach impossible? Why does the model need this strange additional assumption? Where is the struggle and why? What is the most surprising part of the work? Your talk should be full of these examples. Instead of explaining a dry model, explain a problem in a natural way, and then explain the model along with examples.
- Everybody loves a great **demo**. Don't wait with your demo until the end of your talk. A demo could also be at the very beginning of your talk, or in the middle, or throughout your talk.
- **Know your audience**: A lecture to undergrad students is different from a conference talk. Is your audience waiting for your talk (job interview presentation), or is it sitting there for three days already, listening to one mediocre talk after the other, desperate for something different? What do you need to explain, and what can you assume to be common knowledge?
- **Presenting your own work**? Many scientific speakers seem to feel most comfortable when they can show off their genius. It's almost as if they don't want their audience to understand their talk, since this makes them look smarter?!?
- Try to **keep your audience** throughout your talk. It may be okay to lose a certain fraction of the audience for a minute from time to time, but it is *not* okay to lose 50% of the audience during 50% of the talk.
- If possible, **interact** with your audience during your talk. And reserve time for questions.
- Have a good standing **posture**.
- **Explain naturally**, do *not* read your text.
- Be **on time**. Actually, don't mind finishing 1' early.
- Be funny, be deep. A metaphor is a glorious thing. **Don't be boring!**

## Part 2: Tips for Slides

- Slides help, as some ideas are more easily explained with a **picture**.
- Slides should be as simple as possible, each slide should have **one** quote, **one** picture, **one** figure. Sometimes **two** of these do make sense (picture and quote, or two figures that need to be compared, etc.). There is no law to fill up a slide.
- **Do not copy** whole slides from other talks. It is to copy a picture or figure, properly referenced.
- Be careful about **page numbers**. Often they do not help, but if you want to use page numbers, do *not* write "Page X out of Y" (especially if  $X \ll Y$ ).
- Use a **basic style**: Just a plain single color (white or black) background, one basic font (e.g., Helvetica, Calibri), no silly repetitive background style (just because PowerPoint says so).
- Do not show **your name**, affiliation, university logo, title of the talk, structure of your talk, etc. on every slide. It is just ugly. Show this information on the first slide and the last, so that people know how to contact you. Apart from the information you want to convey, your slide should be empty.
- Be careful about (bullet pointed) **lists**. Lists are a great tool for summarizing some vaguely related aspects of a topic; this text is a list after all. However, if a slide uses a list, there is something wrong. If you have a slide with a list, think carefully whether all these points need to be on one slide. Maybe it is possible to replace the list with a single picture, and then explain all the items of the list as aspects of the picture.
- **Text** is generally discouraged. A single word or two words on a slide are more powerful than a paragraph of text. (No matter how bad you think your English is, just put the most difficult technical terms on the slide, and not a transcript of what you are actually going to say.)
- Audience members tend to read a text as soon as they see it. Same for complicated figures. **Reveal information** exactly when you are discussing it. So if you want to show a famous quote, read it out loud as soon as you show it.
- Some claim that each slide should take **2 minutes**. This terrible advice is the main reason why so many talks are dull. You may spend 15 minutes on one slide (actually, you may have no slides at all!). But it's also fine if you show a slide for 5 seconds only. The 2 minute rule usually makes presenters fill their slides with content until they can spend 2 minutes on each slide, which is in contradiction to the one item per slide rule above. Slides are not a replacement for text.
- **Overview slides** are usually boring, and hard to understand for an audience that does not know the subject: "first I give an introduction to X, then I present some details, and finally some more details!". If you think you need an overview slide, try putting it after some motivation slides. However, it is certainly good to bring structure to your talk: "After we discussed X, you surely wonder about Y. So let's talk about Y!"
- What is the **best tool** to prepare slides? PowerPoint, Google Slides, Keynote are all fine. Prezzi is a tool that naturally supports many of the points made above. (Do *not* use Beamer; it's not a coincidence that bad talks often use Beamer.)