



How to Give a Technical Talk

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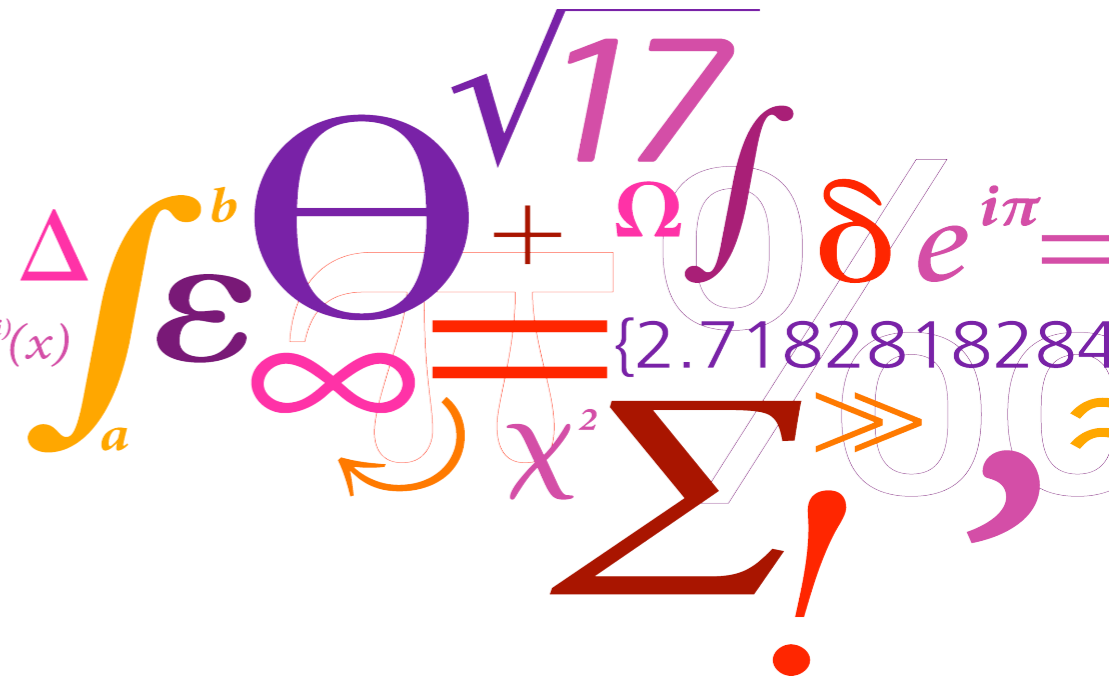
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$$f(x+\Delta x) = \sum_{i=0}^{\infty} \frac{(\Delta x)^i}{i!} f^{(i)}(x)$$



Motivation

- Technical talks can be **good** and **really inspiring**
- Technical talks can also be **poor** and **boring**
- Everyone can learn** to put their talks into the “good” category

Overview

Why should you give a talk?

How to organize a talk

Some more detailed advice

The 10 commandments

The 7 deadly sins

Conclusions

Why Give a Talk?

- I want to **get a job**
- I want to **impress the audience** (with my brilliance)
- I want the audience to **understand** this piece of **research**
- Somebody** is making me do it...

Especially for course **02234**:



GOOD Aims for a Talk: Context

A technical talk is a **good medium** for conveying:

- Context:
 - What has been done before?
 - What problems are still open?
 - Why is the research important?



GOOD Aims for a Talk: Key Idea

A technical talk is a **good medium** for conveying:

- An intuitive feel for your **idea**

If the audience remembers only one thing from your talk, what should it be?

- Be specific! Don't leave your audience to figure out for themselves
- An **overview** and **framework**:
 - What methods were used to solve problems?
 - What does this research contribute?



POOR Aims for a Talk

A technical talk is a **poor medium** for conveying:

- Nitty-gritty **technical details**
- Large amounts of **factual information**

People write **papers** and **reports** in order to convey this kind of information!





How To Organize a Talk

- Why are you giving this talk?
- How to organize a talk
- Some more detailed advice
- The 10 commandments
- The 7 deadly sins
- Conclusions

And now you have to describe your two years of work in 10 slides...

Structure of a Talk

- Introduction (~20%)
- Body (~70%)
 - (Technical details)
- Conclusion (~10%)

Structure of a Talk: Introduction

- Define the **problem** to be dealt with
- Give **motivation** to “catch” the audience
 - You have 2 min. to engage your audience before they start to doze
- Introduce **terminology**
- Summarize the **important contributions** of the work
- Give a **roadmap** for the rest of the talk

Structure of a Talk: Body

- Present the **key idea**
- Describe the **major results** of the work
- Explain the **significance** of the results
- IF technical details are to be included THEN:
 - Present one or more key ideas
 - Discuss them in detail
 - Aim is to convince the audience that the work is not trivial!

Especially for course 02234: relate the paper you are presenting to other publications in the same area (use Google, citeseer etc.).

Structure of a Talk: Conclusion

- Summarize the **key points**
- Make observations which audience would not understand at the start of the talk
- Point out **unsolved problems** and **weaknesses**
- Indicate clearly that **the talk is over!**

Some More Detailed Advice

- Why are you giving this talk?
- How to organize a talk
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 - The 10 commandments
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- Conclusions



Your Main Weapon: Examples

- ☑ To **motivate** the work
- ☑ To convey the **basic intuition**
- ☑ To show **extreme cases**
- ☑ To highlight **shortcomings**



When the time is short, omit the general case, not the example!

Your Audience...

The audience *you would like*:

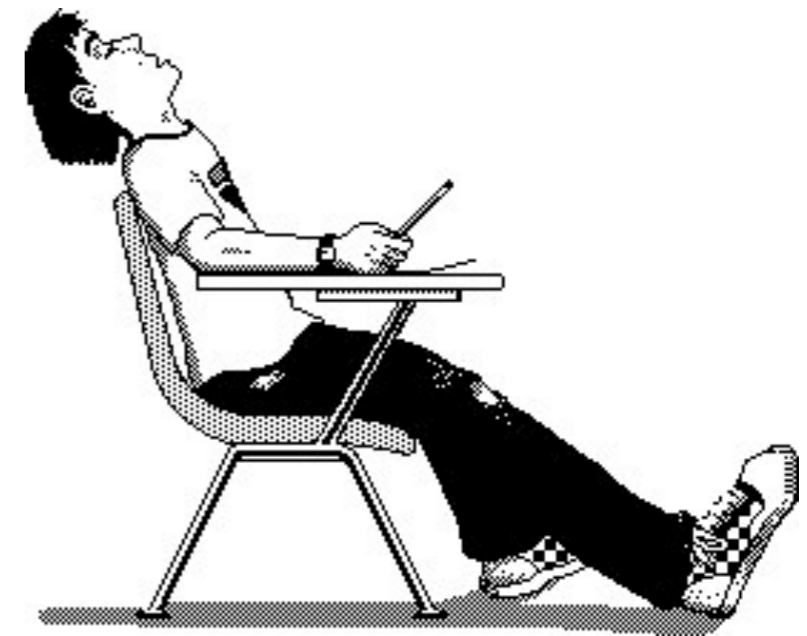
- Have *read all your* earlier *papers* (and related work)
- Thoroughly *understand* all the relevant *theory* of *cartesian closed endomorphic bifunctors*
- Are all *curious* and *excited* to hear about the latest developments in your work
- Are *fresh, alert,* and *ready for action*



Your Actual Audience...

The audience **you get**:

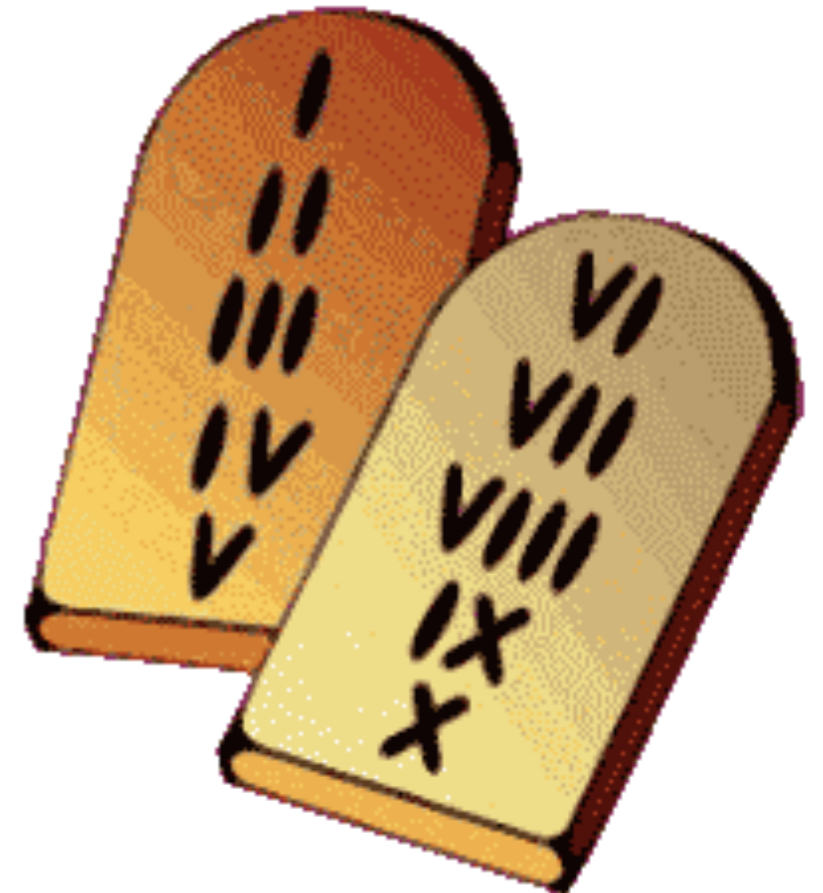
- Have **never heard of you**
- Have heard of *bifunctors*, but **wish they hadn't**
- Have **just had lunch** and are **ready for a doze**

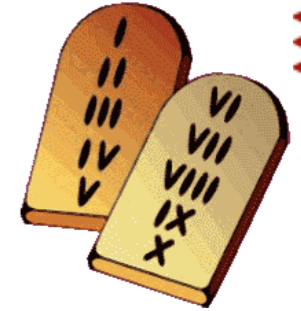


Your mission is to
WAKE THEM UP
And make them glad they did

Some More Detailed Advice: the 10 Commandments

1. Know your material
2. Communicate the key ideas
3. Use logical order
4. Give concrete examples before abstract ideas
5. Keep within the time provided
6. Maintain eye contact
7. Maintain ear contact
8. Use simple visuals
9. Quality over quantity
10. Practice giving talk to real people





3. Using Logical Order

- You are “telling a story”: find the **order** which makes most **sense to your audience**
- Avoid forward references (if possible)
- Motivate each step** – don’t just emit a stream of facts
- Remember the audience is **not** as **familiar** with the material as you are!

Who Is Your Audience?

General Public

- Concentrate on introduction
- Body presented at a high level
- Eliminate technicalities

CS People

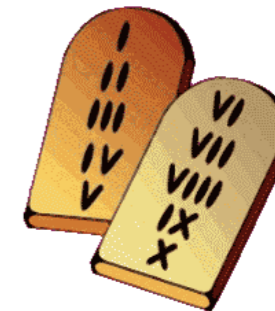
- Introduction important
- Substantial body
- Skimpy technicalities

CS People in Your Area

- Can cut back on introduction
- Meaty Body
- Moderate technicalities

Experts in Your Exact Area

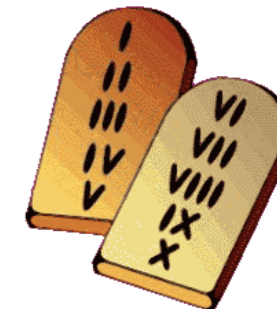
- Skimpy important
- Meaty body
- Meaty technicalities



6. Maintain Eye Contact

- It is a way to communicate, it helps you to talk to your audience
- LOSS DETECTOR:** It tells you whether the audience is with you or is lost or bored
- Don't forget:
 - Don't talk to your feet
 - Don't read your talk
- Don't use distracting mannerisms

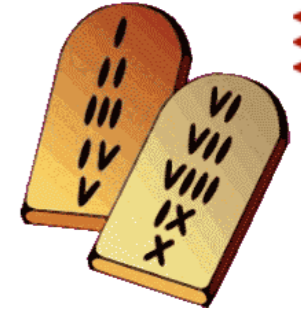




7. Maintain Ear Contact

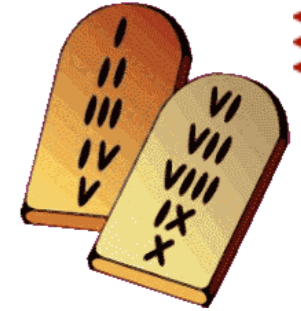
- Speak **slowly** (but not too slowly)
- Speak **clearly**
- Don't talk in a monotone
- Don't use **jargon** or (as yet) **undefined terms**
- Project your voice** (if you can...)
- Pause** between sections of talk, or if you are asking a question





8. Simple Visuals

- Make sure the text on the slides is large enough to read
- The purpose of the slide is to give the audience a structure, as something to jog their memory as to the point you are trying to make, or as a concrete expression of a formula, etc. **It should not be** a *verbatim transcript* of what you are saying. **If you are saying exactly what is on your slide, you are doing something wrong.**
- Use pictures to help the explanation
- Complex special effects are **very distracting**



The 11th Commandment: Be Enthusiastic!

If you do not seem **interested** and **excited by your idea**, why should the audience be?

- It wakes them up
- It gets you loosened up, breathing, moving around
- Enthusiasm makes people **dramatically more receptive**



Some More Detailed Advice: the 7 Deadly Sins

1. Getting bogged down in details
2. Trying to include too much
3. Going over your allotted time
4. Being boring
5. Speaking unintelligibly
6. Losing your audience
7. Arrogance (“any fool can see that...”)

Sin: Including Too Much



AND NOW LET'S WALK THROUGH SLIDE #67, FIFTY WAYS TO MAKE YOUR PRESENTATION MORE EXCITING. NUMBER ONE...

Sin: Including Too Much

- Symptoms:
 - Time almost up and you are halfway through your talk
 - Tearing through slides faster than the audience can read them
 - Planning on showing more than 30 slides an hour (2 min per slide)
- BIG DISASTER:** You left the important stuff to the end, and have run out of time!

Sin: Going Over Your Alloted Time

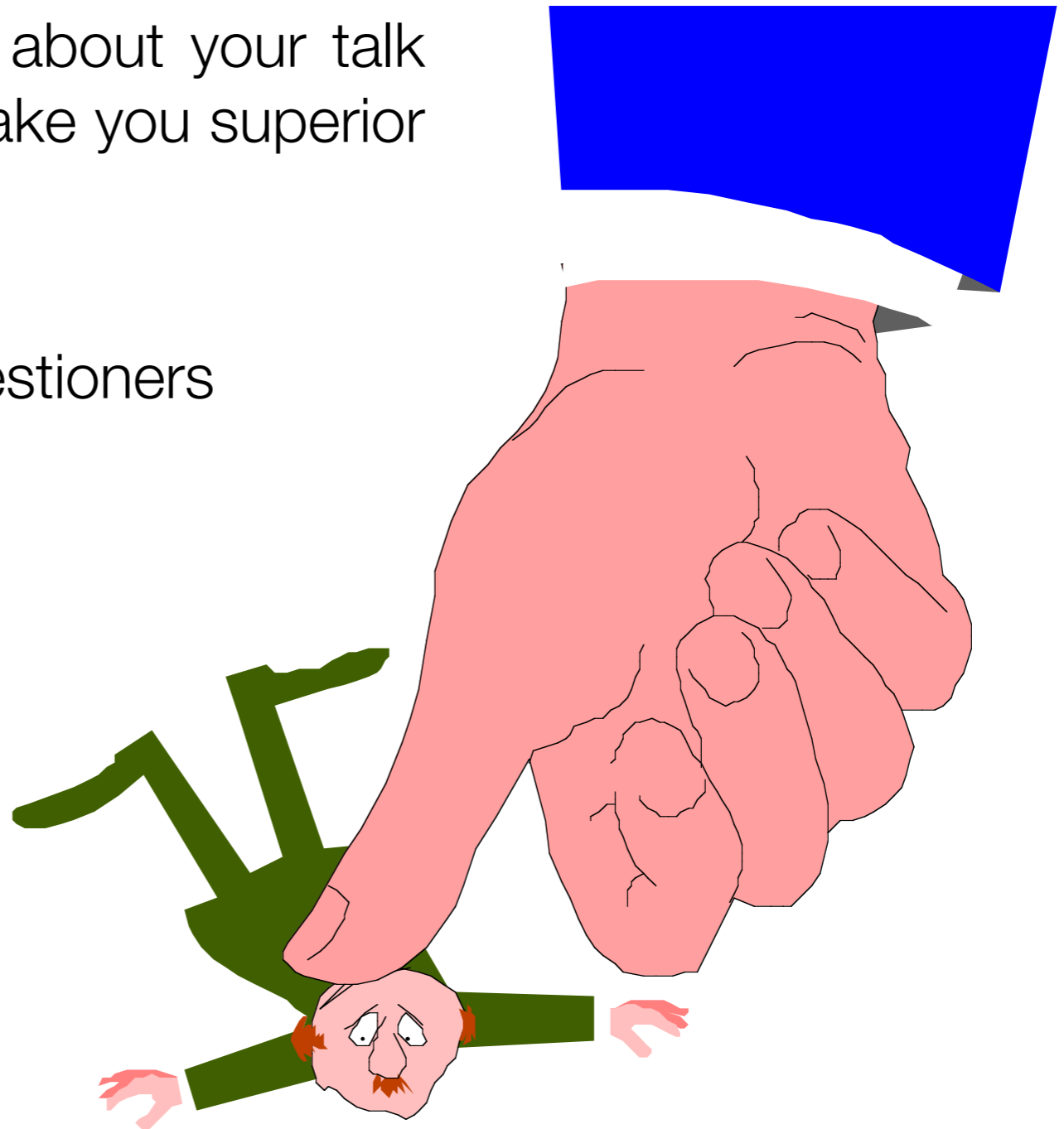
Absolutely without fail,
finish on time!

- ☑ Audiences get restive and essentially **STOP LISTENING** when your time is up
- ☑ Continuing is very **counter productive!**
- ☑ Simply **truncate** and **conclude**
- ☑ Do not say “would you like me to go on?” (it’s hard to reply “no thanks”)



Sin: Arrogance

- The fact that you know more about your talk than the audience does not make you superior to them
- Do not put down or belittle questioners



And Remember... Do Not Apologize!

- “I did not have time to prepare this talk properly”
- “My computer broke down, so I do not have the results I expected”
- “I do not feel qualified to address this audience”

Especially for course 02234!



The Jelly Effect

If you are anything like me, you will experience apparently-severe [pre-talk symptoms](#), such as:

- Inability to breathe
- Inability to stand up (legs give way)
- Inability to operate brain
- Anxiety
- Stress



The Jelly Effect: What To Do About It

- ☑ Deep breathing during previous talk
- ☑ Script your first few sentences precisely (=> no brain required)
- ☑ Move around a lot, use large gestures, wave your arms, stand on chairs
- ☑ Go to the toilet first
- ☑ You are **NOT** a wimp!

Everyone feels this way



And Especially... There Is Hope!

The general standard is so low
that you don't have to be outstanding
to stand out!

Watch other people's
talks intelligently:
pick up ideas for
what to do
and
what to avoid



Conclusions

- Why are you giving this talk?
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Summary

- ☑ You (too) can learn to give **good** talks
- ☑ Plan and **organize** your talk
- ☑ Think from the **audience's point of view**
- ☑ Follow the Commandments, **avoid the Sins!**
- ☑ Practice!



Further Material on Talks

Two good sources (most of the current talk has been shamelessly borrowed from these references):

- ✓ Scot Drysdale: “Giving Technical Talks”

www.cs.dartmouth.edu/~scot/givingTalks/

- ✓ Simon Peyton Jones: “How to give a good research talk”

research.microsoft.com/en-us/um/people/simonpj/papers/giving-a-talk/giving-a-talk-slides.pdf

- ✓ You can find several more suggestions **on the Web**



Thanks
and
Good Luck!

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