

Not

How to Present a Paper

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Caveat Emptor



Do what I (intend to) say – not what I do

The PowerPointers Paradox

- Everything I have to say in this talk is trivial!
- But very few presentations are really good

Why give a *good* talk?

- Your research results deserve to be known!
- You will get more feedback
- Relevant competences also for teaching, interviews, oral exams...
- You're from BRICS – make us proud!

Overview

1. Structure: What to say (and what not to say)
2. Technical aids
3. Rhetoric: Getting through to the audience
4. Concluding and handling questions

Know Thy Enemy!

- Consider what your audience can be expected to know beforehand
 - remind, don't assume
- A department seminar?
- A small but focused workshop?
- A large, top conference?
- ...

Non-goals

- Explain **all details** of your fantastic work
- Explain the **process** that lead to the results (unless the process *is* the contribution)
- “Wow, that guy/girl is really really clever!”
- “Ha ha, that guy/girl is really really funny!”

Goals

- What do you want people to remember after the talk?

- You have succeeded if
 - they are able to give a 30 sec. summary
 - they will read your paper
 - they will contact you for further discussion



- Use the goal as a starting point for structuring the talk
 - often not the same structure as the paper
 - rarely coinciding with the chronology of the work

Drowning in details

HISTORY OF O-RING DAMAGE ON SRM FIELD JOINTS

	Cross Sectional View				Top View		Clocking Location (deg)
	SRM No.	Erosion Depth (in.)	Perimeter Affected (deg)	Nominal Dia. (in.)	Length Of Max Erosion (in.)	Total Heat Affected Length (in.)	
61A LH Center Field**	22A	None	None	0.280	None	None	36° - 66°
61A LH CENTER FIELD**	22A	NONE	NONE	0.280	NONE	NONE	338° - 18°
51C LH Forward Field**	15A	0.010	154.0	0.280	4.25	5.25	163
51C RH Center Field (prim)***	15B	0.038	130.0	0.280	12.50	58.75	354
51C RH Center Field (sec)***	15B	None	45.0	0.280	None	29.50	354
410 RH Forward Field	13B	0.028	110.0	0.280	3.00	None	275
41C LH Aft Field*	11A	None	None	0.280	None	None	-
410 LH Forward Field	10A	0.040	217.0	0.280	3.00	14.50	351
STS-2 RH Aft Field	28	0.053	116.0	0.280	--	--	

*Hot gas path detected in putty. Indication of heat on O-ring, but no damage.
 **Soot behind primary O-ring.
 ***Soot behind primary O-ring, heat affected secondary O-ring.

Clocking rotation of leak check port - 0 deg.

OTHER SRM-15 FIELD JOINTS HAD NO BLOWHOLES IN PUTTY AND NO SOOT HEAR OR BEYOND THE PRIMARY O-RING

SRM-22 FORWARD FIELD JOINT HAD PUTTY PATH TO PRIMARY O-RING, BUT NO O-RING EROSION AND NO SOOT BLOWBY. OTHER SRM-22 FIELD JOINTS HAD NO BLOWHOLES IN PUTTY.



Actual slide from presentation at NASA,
 in request of delaying launch of *Challenger*, 1986

Drowning in details

$$\text{(Act)} \frac{-}{\mu.P \xrightarrow{\mu} P}$$

$$\text{(Repl Act)} \frac{-}{!\mu.P \xrightarrow{\mu} P \mid !\mu.P}$$

$$\text{(Enter)} \frac{P \xrightarrow{\text{in}(n,b)} P'}{P \xrightarrow{\text{enter}(n,b)} \langle P' \rangle_n \mathbf{0}}$$

$$\frac{P \xrightarrow{\text{in}(n,b)} P'}{\text{enter}(n,b) \rightarrow \langle P' \rangle_n \mathbf{0}}$$

$$\frac{\langle P_1 \rangle_n P_2}{[P_1] \mid P_2}$$

$$\frac{\langle P_1 \rangle_n P_2 \quad Q \xrightarrow{\text{enter}(n,b)} \nu \tilde{c} \langle Q_1 \rangle_n Q_2^{(*)}}{\text{enter}(n,b) \rightarrow \nu \tilde{c} \langle [P_1] \mid Q_1 \rangle_n P_2 \mid Q_2}$$

$$\frac{n[P] \xrightarrow{\text{enter}(n,b)} P'}{\text{enter}(n,b) \rightarrow \nu \tilde{c} \langle [P] \rangle_n P'}$$

$$\frac{P \xrightarrow{\text{open}(n,b)} P' \quad Q \xrightarrow{\text{free}(n,b)} Q'}{P \mid Q \xrightarrow{\tau} P' \mid Q'}$$

$$\text{(Par)} \frac{P \xrightarrow{\alpha} Q \quad \alpha \neq \text{exit}(n,b)}{P \mid Q \xrightarrow{\alpha} Q \mid Q}$$

$$\text{(Par Exit)} \frac{P \xrightarrow{\text{exit}(n,b)} \nu \tilde{c} \langle P_1 \rangle_n P_2}{P \mid Q \xrightarrow{\text{exit}(n,b)} \nu \tilde{c} \langle P_1 \mid Q \rangle_n P_2}$$

$$\text{(Res)} \frac{P \xrightarrow{\alpha} Q \quad n \notin \text{fn}(\alpha)}{\nu n.P \xrightarrow{\alpha} \nu n.Q}$$

$$\text{(\tau Amb)} \frac{P \xrightarrow{\tau} Q}{n[P] \xrightarrow{\tau} n[Q]}$$

“As you all see [wave hands at screen], by defining bla as bla we obtain bla bla...”

Japanese style

Algorithm for making a presentation:

1. Copy all figures from your paper, one slide for each
2. That's it, you're done!

(Don't do that)

Avoid full sentences

I have often seen presentations where each page contains one or more complete sentences. This can be very annoying. Especially if the speaker is apparently saying something different. But there are a few situations where it makes sense:

- 1) Teaching material: If it is important that the slides can be read afterward and there is no supplementary paper or other material.
- 2) If you want to quote someone – in which case, always slowly read the entire quote for the audience or give them time to read it.

After all, we humans do not yet have dual-core brains.

A good structure

- Motivation
 - what is the problem?
 - why is it worth solving?
 - why are existing approaches inadequate?
- The Solution
 - intuitive explanation, examples
 - experimental results (if relevant)
- Technicalities
 - formal definitions, theorems, proofs
- Conclusion

The typical structure

- Motivation
 - what is the problem?
 - why is it worth solving?
 - why are existing approaches inadequate?
- The Solution
 - intuitive explanation, examples
 - experimental results (if relevant)
- Technicalities
 - formal definitions, theorems, **proofs**
- Conclusion

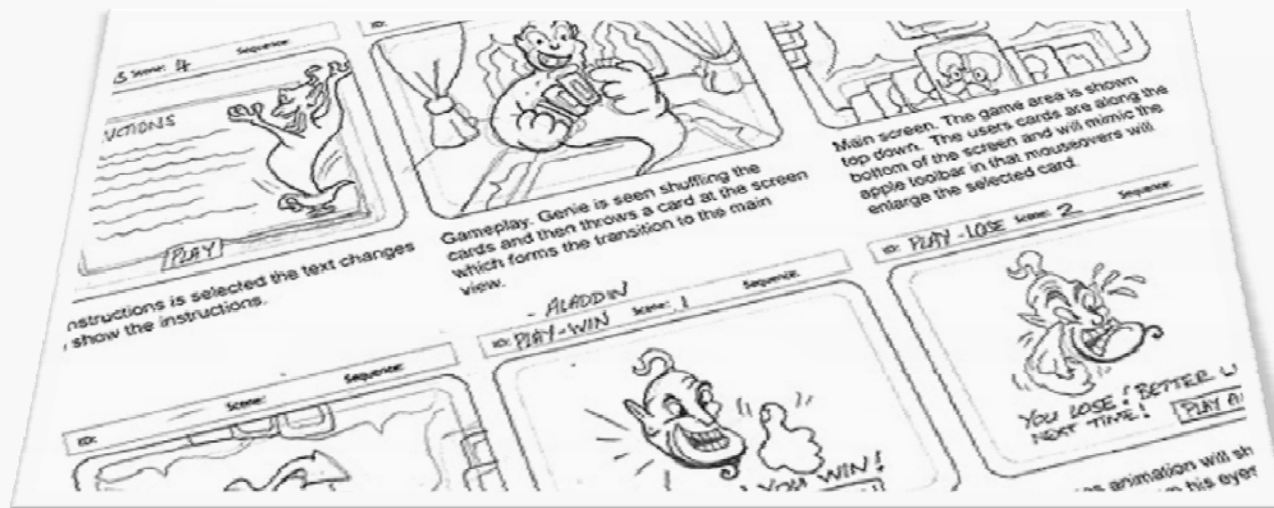
The ideal structure

- Motivation
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 - why is it worth solving?
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- The Solution
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From the bag of tricks

The storyboard trick

- prevents getting into details too soon
- helps ensuring that there is not too much on each slide



Use a roadmap slide

- Roadmap / Agenda / Overview / Outline / Plan / ...
- but not for very short talks
- and don't make it generic:
“First, I want to introduce the problem, then ..., and finally I will conclude”

Overview

1. Structure: What to say (and what not to say)
- 2. Technical aids**
3. Rhetoric: Getting through to the audience
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Use The Force!

- **Bad:** Your slides are your presentation
- **Good:** Your slides *support* your presentation

PowerPointless Presentations

- Fonts
- Text size
- Colors
- Placement
- Animations
- Timing

Fonts

- Serif fonts are good for long texts, as in papers and books
- Sans serif fonts are better for short texts!
- *Cartoon fonts aren't funny*

Text size

- Q: “Can you write larger?”
- A: “No, then there is not room for everything I want to write!”
- “You probably can’t read this in the back, but...”
- Axiom: The presentation screen is small, and the projector is not very bright

**USE
BIGGER
FONTS**

OK



Placement

In ordinary rooms (not auditoriums), only those on the front row can see the bottom of the screen

Placement

If you have a slide that is brief (which is good)...

...then make the text larger

This is especially relevant for illustrations

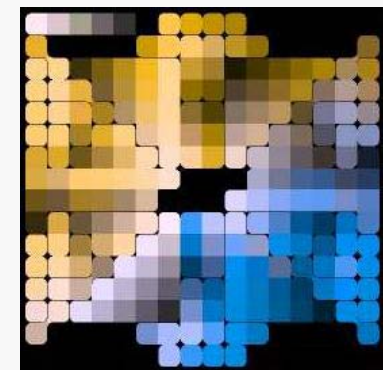
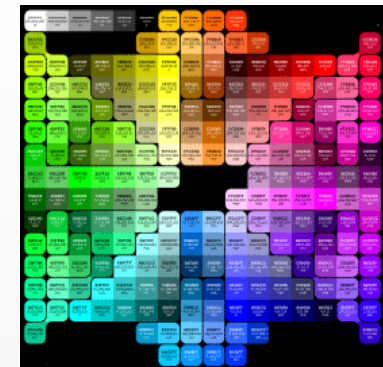
(People using $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ to make slides often forget this)

Itemized text

- Use itemized text
- to structure
 - the contents, not
- as line
- separators

Colors

- Use colors, not as `paintbox` but to
 - highlight important parts
 - emphasize connections
- Be consistent:
 - If `green` means *foo* on slide 12 then it should not mean *bar* on slide 15
- Don't encode too much in colors



Colors

A dark screen
in a dark room
makes people fall asleep...

Colors

- Colors are often less clear on a projector than on a computer screen
- Classical mistake: **yellow on light background**
(Standard comment: “it looked fine on my screen”)

Animations

- Some people HATE animated slides
- I like them :-)
 - especially for explaining examples and illustrations (which can be difficult in a paper)
- But don't overdo the effects...

Timing

- Never flash a slide for 0.2 seconds
 - decide whether it is important or not
- Never browse wildly back and forth in the slides

Slide numbers

Always add slide numbers

- *You* know how far you are
- The audience can more easily prepare questions for specific slides

And don't forget...

spell-check!

(especially for last-minute changes)

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Style matters



“Rhetoric is the art of ruling the minds of men” – Plato

Aristotle (384-322 BC):

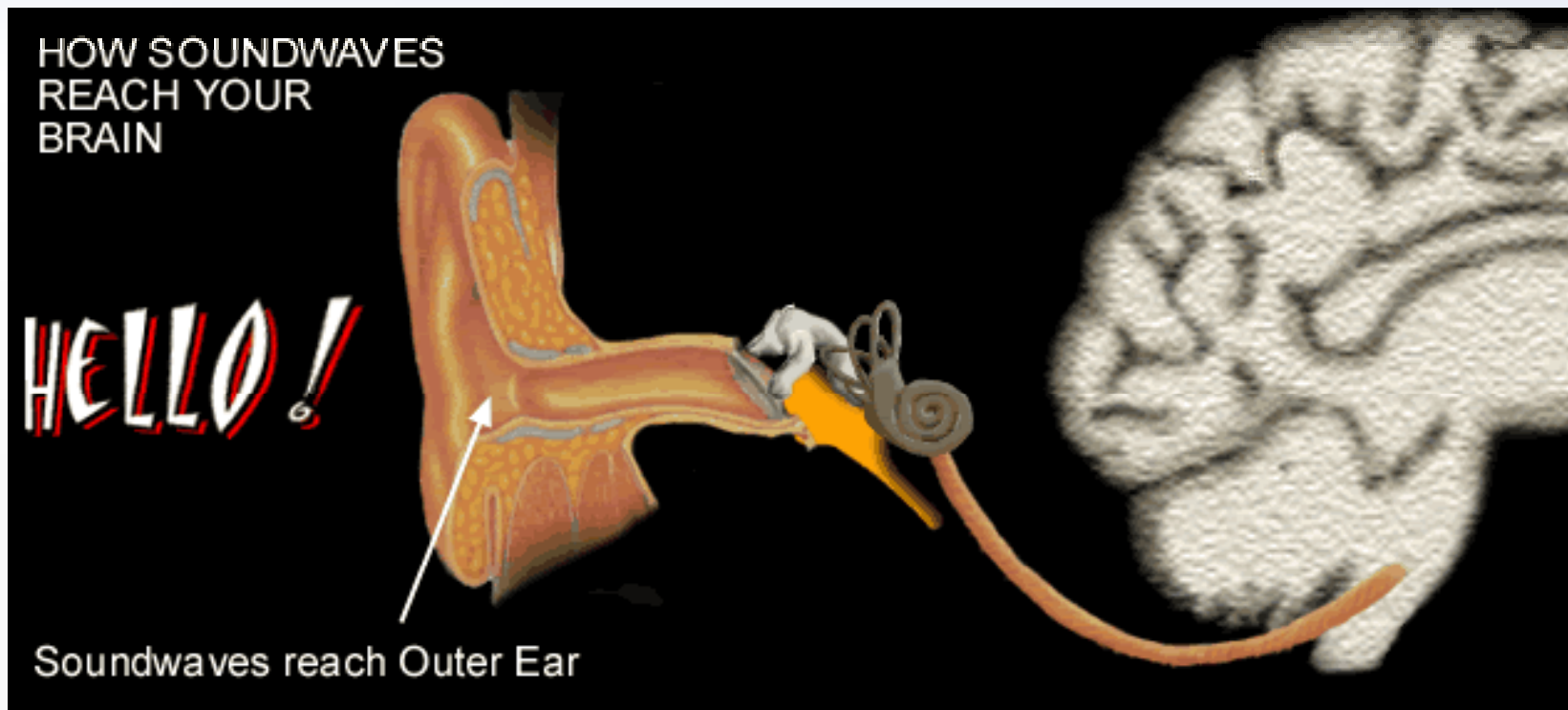
- **Ethos** – character, position, reputation, ...
- **Pathos** – emotion, metaphors, amplification, ...
- **Logos** – objective reasoning, math proofs, ...

“The broad masses of a population are more amenable to the appeal of rhetoric than to any other force” – A. Hitler

The basics

- Breathe, relax
- Water - not sparkling (burb + microphone = not good)
- Speak LOUDLY and *clearly*
 - if there is a microphone, use it
 - no uhm's
- Look at the audience (as much as possible)
- OK to use a laser pointer (but make sure it's visible!)
 - never point with your finger at your laptop

To all non-native English speakers



Not good if the audience must spend 98% of the mental CPU power on identifying the phonemes...

Jokes and puns

- Can spice up the show and increase attention
- Can backfire (everybody hate jokes they don't understand)

“A SQL query walks into a bar. He sees two tables, walks over and asks...May I join you?”

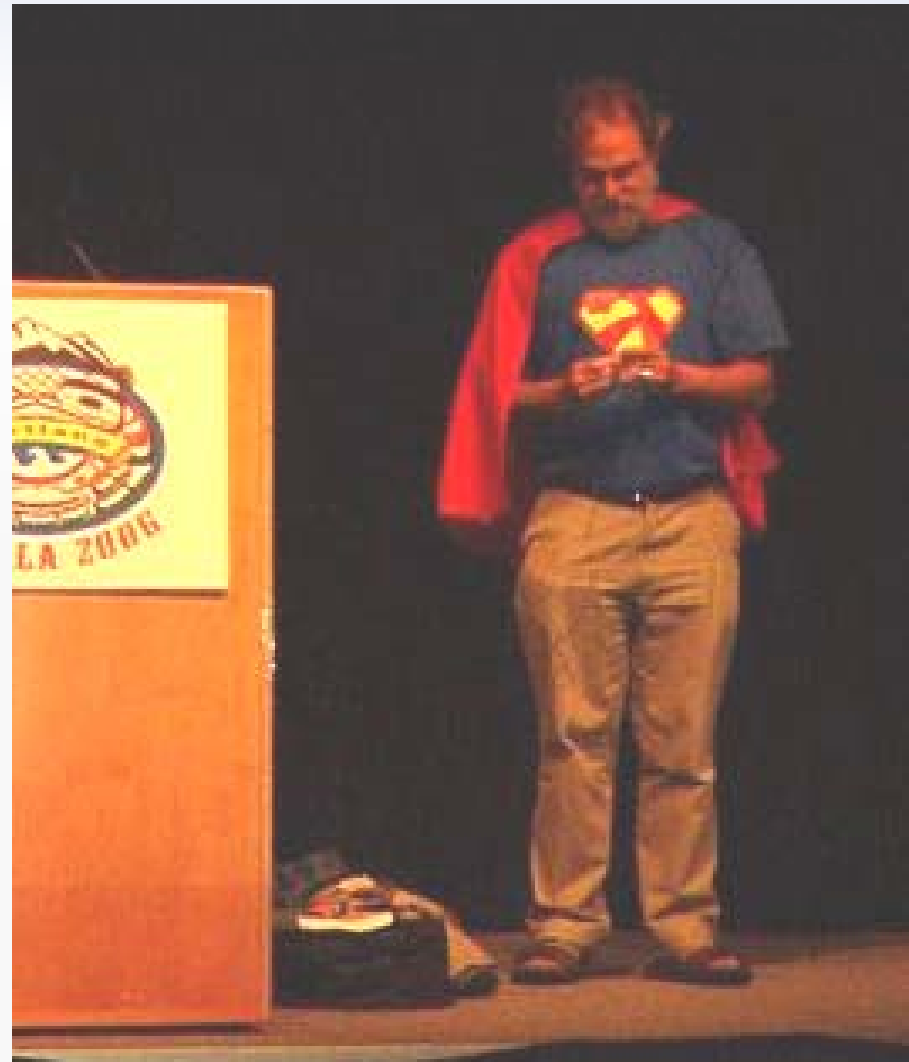
- Do you want to be remembered as the clown or the rising star?



About gimmicks

Forbidden

- except if you are Phil Wadler →



How to...

- Remember what to say?
 - Slide notes, printed slides / dual screen mode
 - Practice talks – if something is important but you keep forgetting it at the right moment, add it to the slide!
 - Memorize what you want to say for the first slide
- Keep the time? (***never*** spend too much time!)
 - Practice talks
 - Be prepared for sections to stretch or squeeze if necessary
 - Don't ignore signs from the session chair



5 MIN.

2 MIN.

1 MIN.

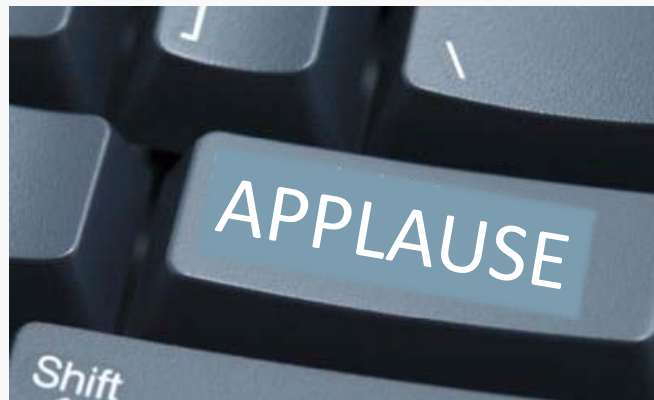
STOP!

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The Conclusion

- Briefly summarize the main points
- Indicate the potential for future work (open problems)
- Saying “Thank you”: A button to start applause



Question time

- Control freaks (yes, you!) fear this part!
- Do:
 - Study related work before the presentation
 - Repeat the questions you get
 - Shows your interpretation of the question
 - Ensures that everybody has heard the question
 - Gives you time to think
- Don't:
 - Look for your advisor somewhere in the room

Handling difficult questions

- Q: “bla bla bla.... 20 years ago I bla bla bla...”
- A: “I’m sorry, what was the question?”
or “Thank you for the comment”
or “I believe the question was ...” (and then an answer)
- Q: “Isn’t this essentially the same as Schönfinkel’s work on bla?”
- A: “I’m not familiar with that work, but maybe we can discuss it offline”

About bonus slides

- If you can anticipate certain questions
 - but maybe it should have been in the talk then?
- A good place for technical details
(formal definitions, detailed examples, ...)

Credits

- Olivier Danvy: *On Presenting a Scientific Talk*
- Ian Parberry: *How to Present a Paper in Theoretical Computer Science: A Speaker's Guide for Students*
- Jonathan Shewchuk: *Giving an Academic Talk*
- Peter Norvig: *The Gettysburg Powerpoint Presentation*
- + 100s of (good and bad) talks I have seen...