Presenting Scientific Work

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(Scientific) Presentation

A speech/talk in which a human **delivers** a **new** **(scientific) achievement, result, idea, piece of work** to other humans (the **audience**)

Research and Collaboration

Once upon a time…

Today!

Collaboration is Triggered by Communication

Presenting scientific work: the key to

- **Disseminate** your own achievements
- See **reaction** of other scientists, get **feedback**
- Find **new perspectives** and **ideas**
- Ultimately build a **research network**
  - With similar + complementary approaches

Teaching

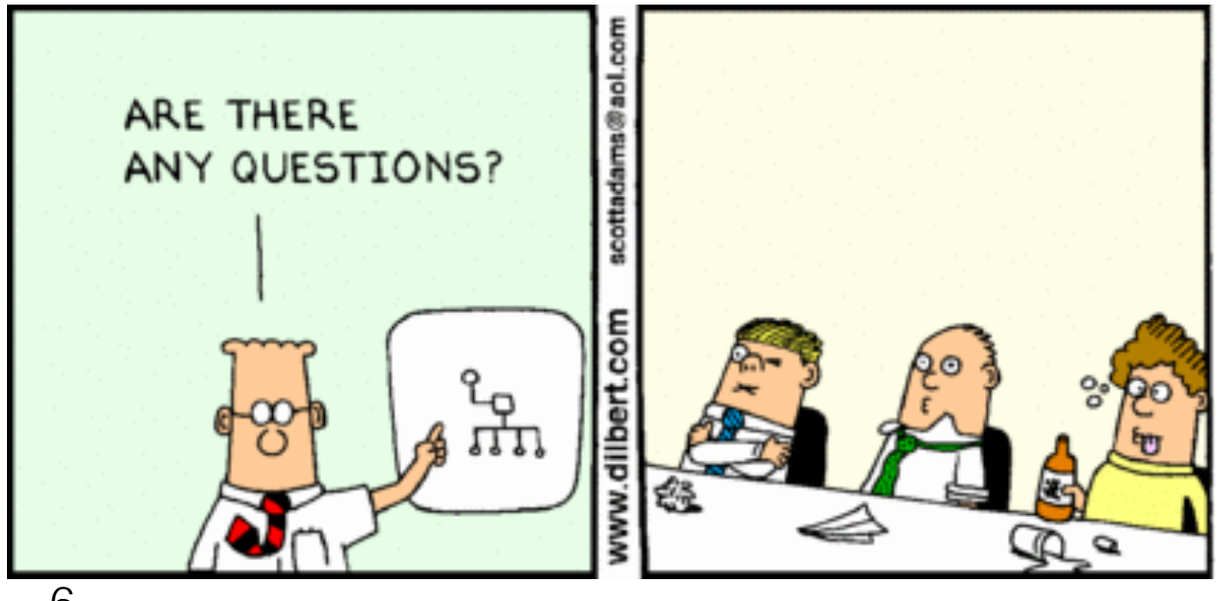
- Possibly the most
  - profound
  - wide
  - direct

  impact we are going to have on society

Our Goal

- Principal types of presentations
- Main characteristics of a presentation
- What makes a presentation strong vs weak?
  - Key principles towards a successful presentation
  - Typical pitfalls

  … with examples!



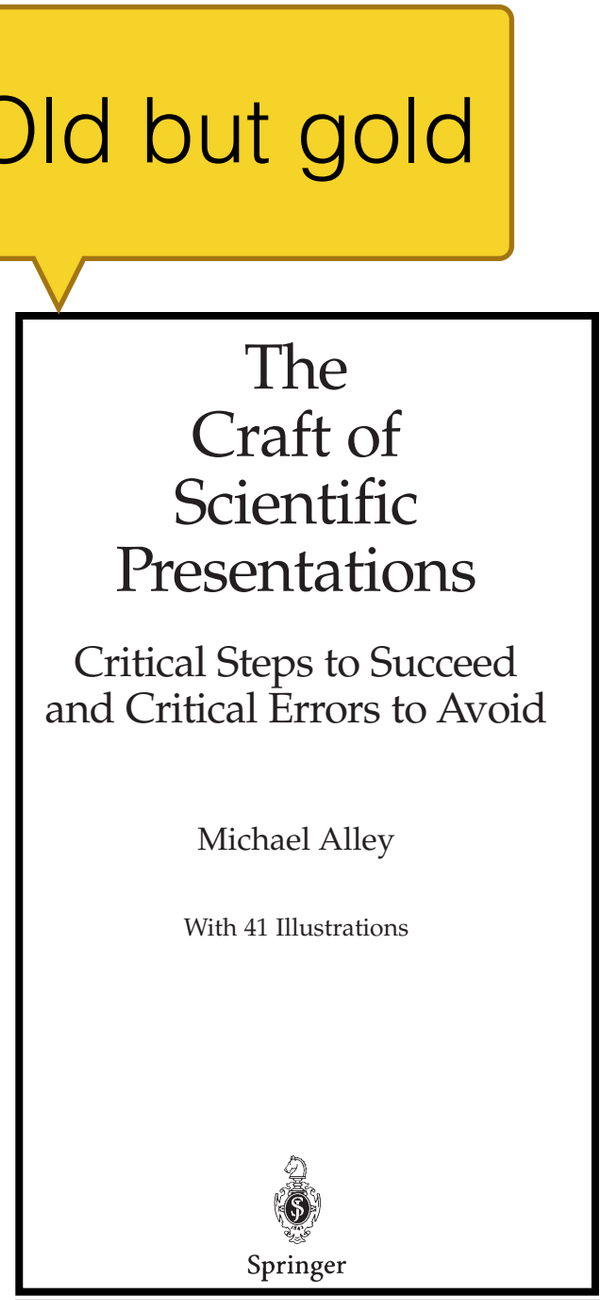
Assignment

- Prepare a *15-20 mins presentation* on your research and study plan, tailored to *this class*
- Prepare a *5 mins research highlight* on your research activity, targeting a *w i d e* audience (computer scientists, people from the industry, your friends)

Background Material

- Plenty of material: web/books
- Extremely complex topic: content, structuring, verbal/non-verbal communication, synthesis, humour, …
- Whenever you feel the need for advice:
  - search for specific answers
  - talk with experienced colleagues

Old but gold



Types of Scientific Presentations

- Conferences - Workshops
  - Paper presentation / poster
  - Keynote
  - Tutorial
- Seminars
- Roundtables and meetings
- Project meetings / reviews

Different goals

Different audience

Different occasions

Different strategies

… and many more

Conference Paper Presentation

Present an accepted paper during the conference

- Fixed time slot
- Q&A moment

Audience

- Scope depends on the size of the conference
- Check track, session, program of your day

Presentation Formats

Standard format

- 25+5 or 20+10 or 15+5 mins
- Session chair
  - Coordinates the speech and checks time
  - During Q&A: makes questions if nobody else does

Presentation Formats

Advertising + poster

- 1-minute madness (or 5 mins) presentation
    - Goal: stimulate people curiosity
- Poster session

Note: posters are getting widespread

Workshops

Like conferences, but less formal environment

- Focused on discussion of ideas rather than presentation of well-established results

Audience: two possible cases

- Very focused (sub-area)
- Very broad (cross-fertilization)

Keynote Speech

- Invited talk at a conference/workshop
  - Target: senior scientists
- Session chair in charge of introducing the speaker
- Time: usually 50+10, 60+10 mins
- Goal: broadly discuss a research line, area, established results, open challenges
- Usually the whole conference audience attends

Tutorials

Conference lecture

- Goal: instruct people about a research area, problem, approach, framework, system

Typical audience

- Students
- Scientists working in related areas or interested in the area

Not Always Slides

- Some conferences ask movies / other material
  - To advertise the work
  - To show a demo of a system
- Other kind of speeches
  - Evening lectures
  - Panels
  - …

Seminars

Informal presentation of your work to another research group

- To establish possible collaborations
- To exchange ideas
- To help each other

Time: 30 mins - 60 mins including discussions

Meetings with Industry

Typical goals:

- Transfer techniques / results from academia to industry

- Collect real experiences / data to validate research

Remember: industry uses a different vocabulary, has different priorities, sees the world differently!

Project Meetings

Meetings with the other partners of a project consortium

- Informal setting
- Goal: update each other about the work done
  - Report progressions and issues on WPs and tasks
    - Broad WP update
    - Specific task-related presentations
  - Discuss general project-related matters
  - Plan what to do

Project Reviews

Formal meetings with the funding agency

- Goal: show that the consortium achieved what promised
- Coordinator orchestrates the meeting, and reports about general topics
- Researchers report on their specific achievements
- Goal: not to inform, but to persuade
    - Remember that we are good scientists, so we never lie

Starting Point

- Presentations reflect the **current** state of the art
  - Papers are old, journal papers are older
- Delivering a presentation gives
  - **visibility** to the presented work *and* the presenter
  - **responsibility** to the presenter

Starting Point

- As scientists: exploit at best the **combination** of **documents** and **presentations**

- General rule: in a presentation **everything must have a reason**

Presenting Scientific Work: Advantages

- Interaction
  - Q&A: audience can drive the information delivery
  - Revise on the spot: presenter can tune the delivery on-the-fly
  - Delivery for emphasis (verbal/non-verbal)
- Support of many different aids (audio/visual/demos)
- Assurance of information delivery

Presenting Scientific Work: Disadvantages

- Linear delivery: one chance to talk, one chance to hear!
  - No undo/redo for the speaker
  - No possibility to catch up for the audience
- Background information unaccessible: “lost implies always lost”

Presenting Scientific Work: Disadvantages

- Pace determined by the speaker
- Success depends on the speaker, and influences how the content is received
- Assembling the speaker and the whole audience (time/space)

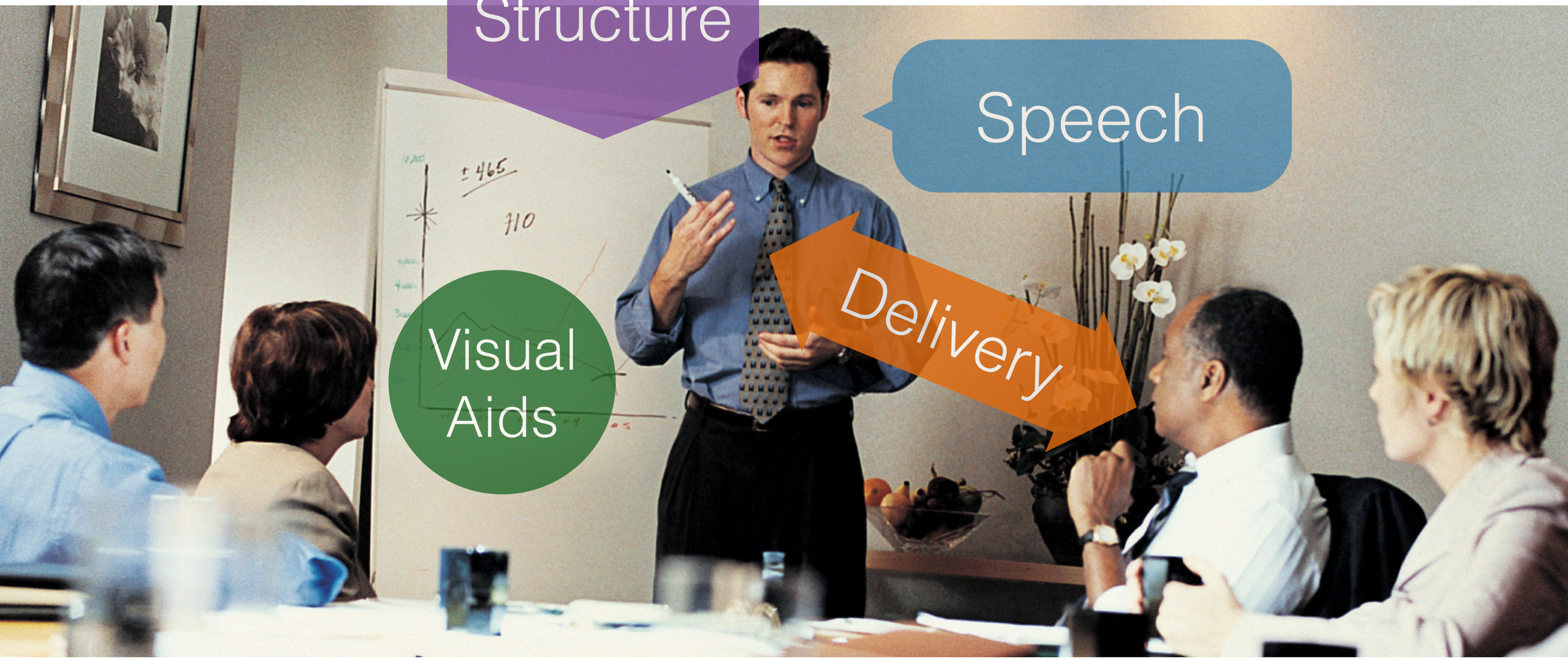
Chances for the Speaker

Preparing and delivering a presentation leads to

- Solidify ideas
- New ways to explain ideas
- Effective examples
- New perspectives

Hence, unexpectedly, **discovery**!

The Four Perspectives



No general strategy

Depends on: **speaker's goal**, **reaction of audience**

General Rule

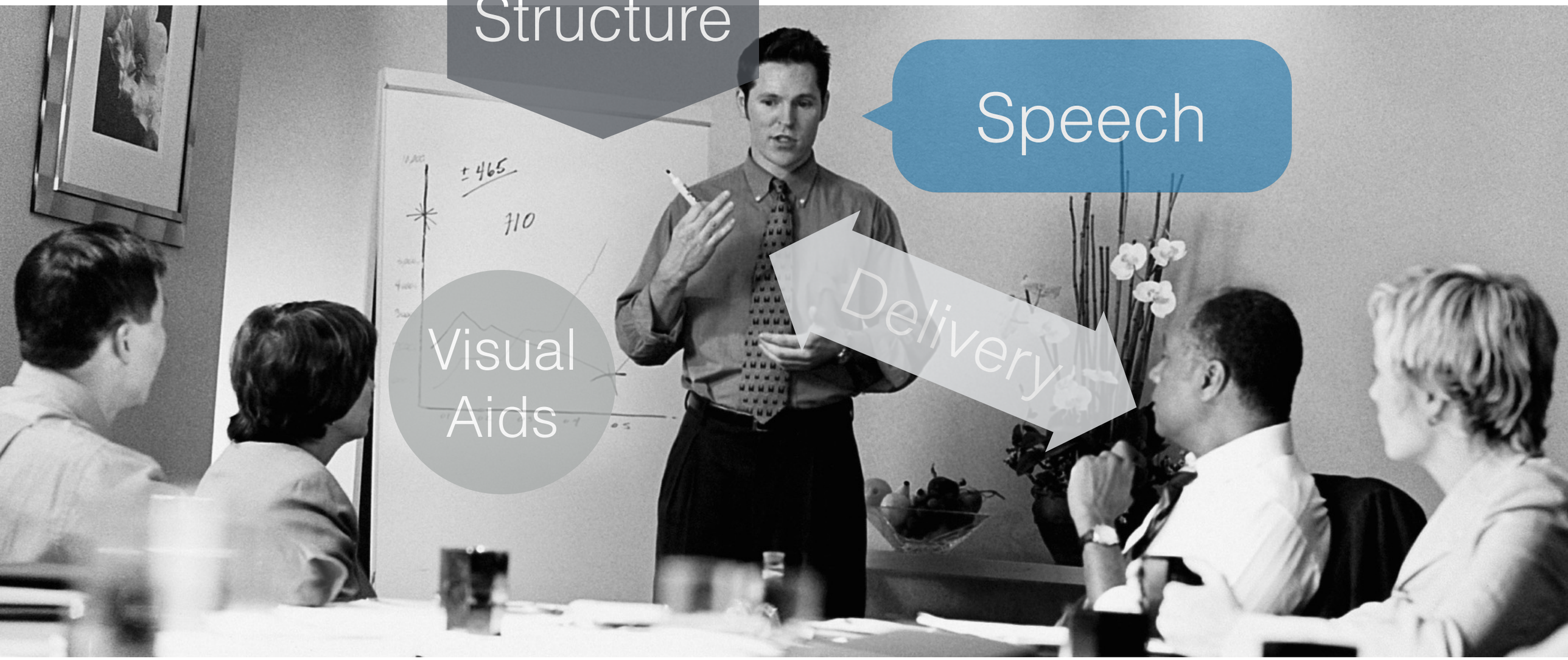
Ne*rds* usually distrust style (**glitz effect**)

Style without content has **no meaning**

"This Venn diagram tells us nothing, but it's *so cute!*"

Content without style gets **unnoticed**

"OK, I'm now going to read out loud every single slide to you, word for word, until you all wish you'd just die."


Structure
Speech
Delivery
Visual Aids

Speech

What you say during your presentation

Flavoring the speech:

- Analogies, examples, stories
- Personal connections
- Humour

The Power of Analogies

The dimension of the nucleus is much smaller than the diameter of the atom (nucleus + electron cloud), by a factor of about 23,000 (uranium) to about 145,000 (hydrogen).

If an atom were enlarged to the size of a bus, the nucleus would be like the dot on this **i**

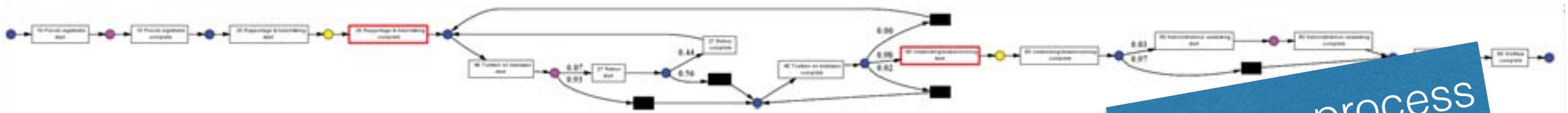
[O. Frisch]

Keepers

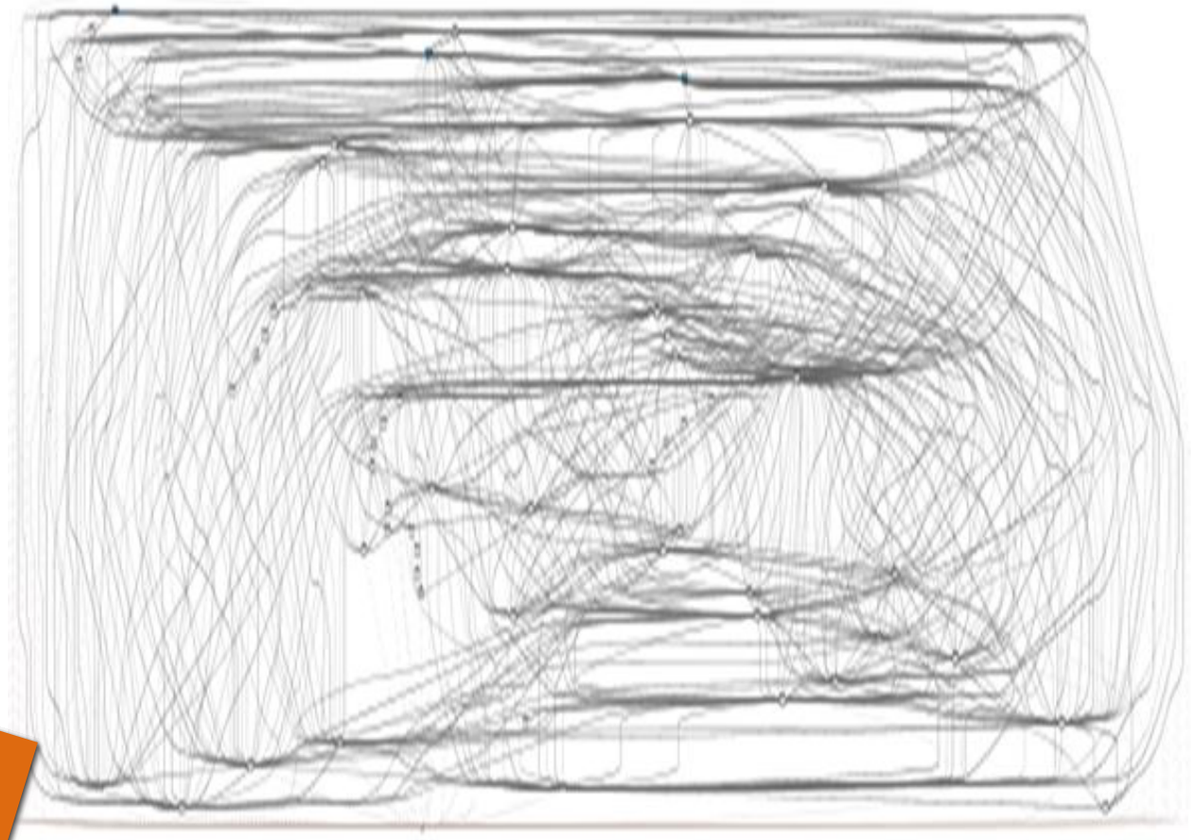
Descriptions/analogies that persist in the mind of the audience after the speech

- 2-days test: what do you remember after 2 days?
- Point to something the audience is familiar with

Keepers



Lasagna process

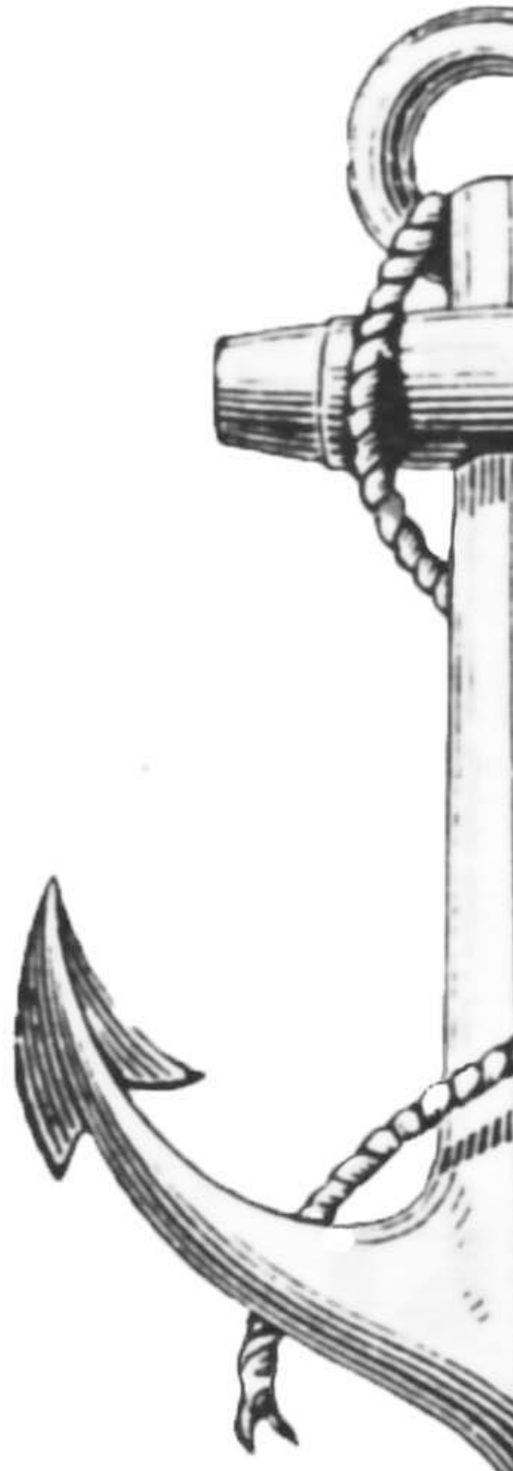


Spaghetti process

Anchoring Abstract Notions

Most people cannot follow a pure mathematical/ abstract presentation

- **Examples** and **stories** anchor such notions to concrete objects/experiences
  - Cf. Feynman and equations vs physical phenomena (the need of “grounding”)
- Again, 2-days test…
- They make the audience breathe



Personal Connections

Self-reference: creating a warm/personal atmosphere

> Boltzmann had no inhibitions whatsoever about showing his enthusiasm when he spoke, and this naturally carried his listeners along. *He was fond of introducing remarks of an entirely personal character into his lectures.*
> I particularly remember how, in describing the kinetic theory of gases, he told us how much difficulty and opposition he had encountered because he had been convinced of the real existence of atoms and how he had been attacked from the philosophical side without always understanding what the philosophers had against him.

Personal Connections

Reference to the audience members: connect own work to the work of people attending the speech

Especially useful when

- The speech is provocative
- It is important to acknowledge work by others
- Top experts of the topic are present

Humour

Effective way to:

- Relax audience
- Allow audience to respond (interaction)
- Engage audience, draw a more intimate connection
- Give audience a rest

But… Trying to be funny in a professional situation is **risky**

Prophetic Answer: **YES**

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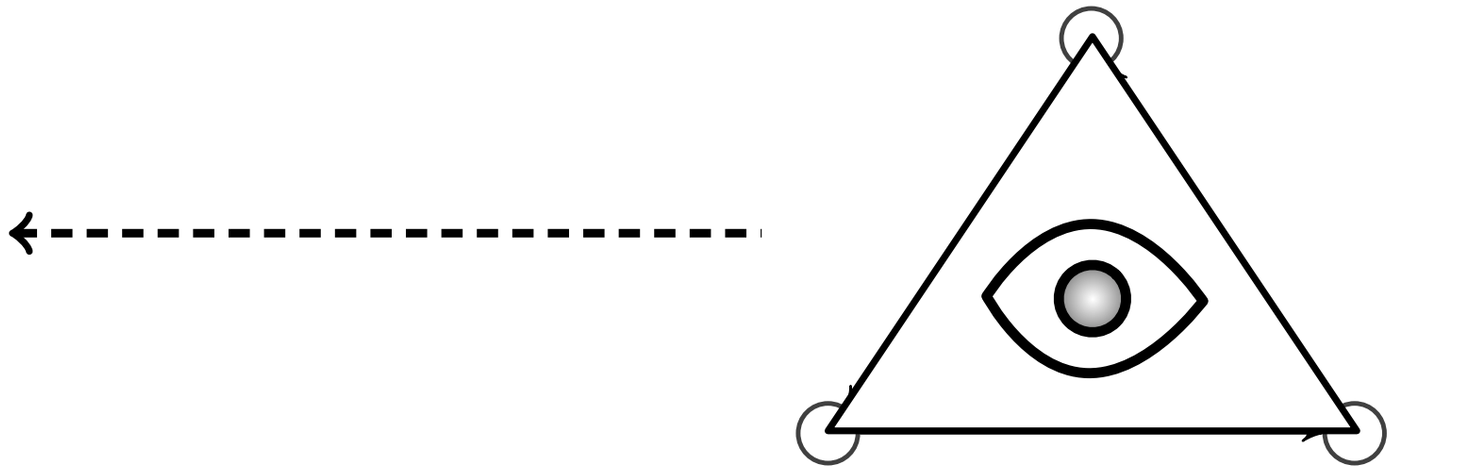
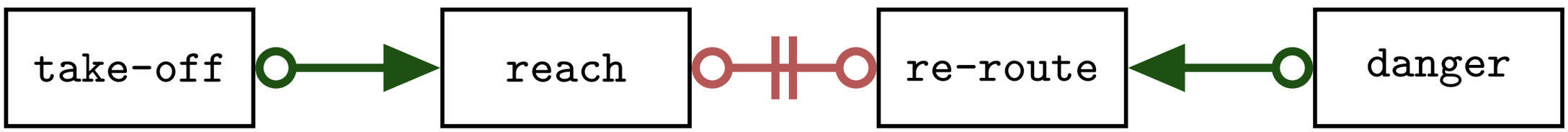
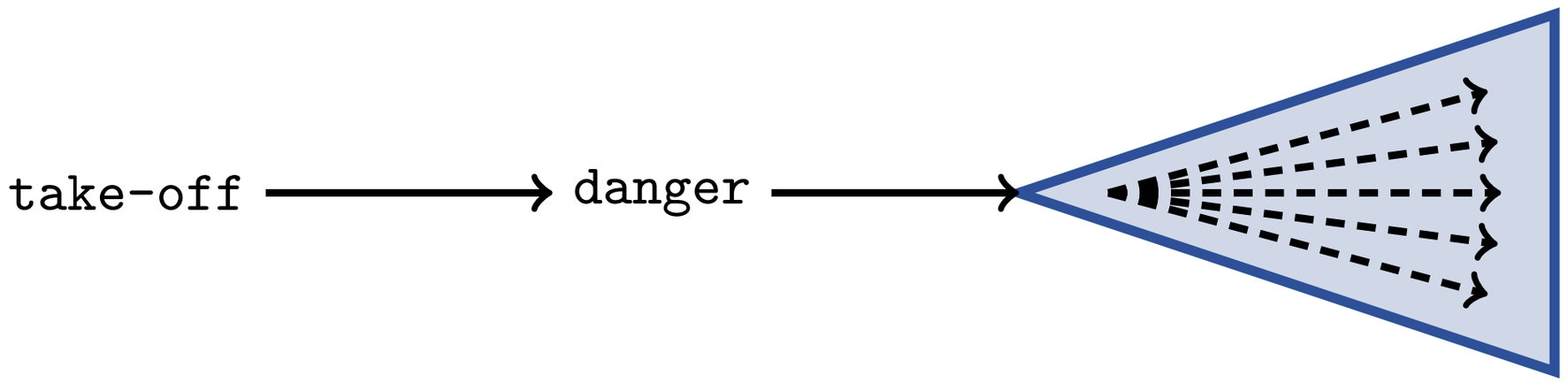
Proactive Monitor

- Checks the partial trace observed so far.
- Looks into the future(s).







Prophetic Answer: **YES**

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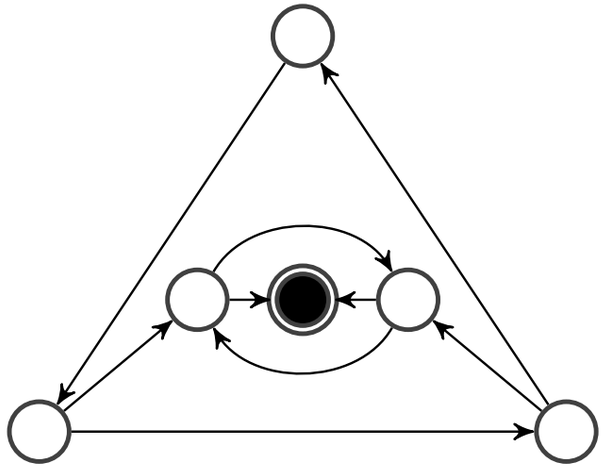
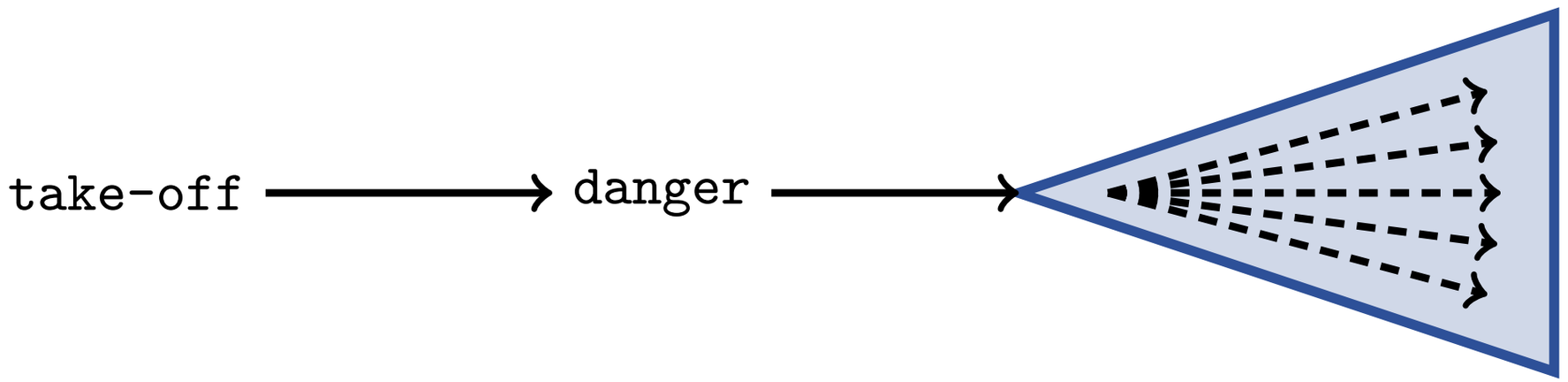


$$\Box(\texttt{take-off} \rightarrow \Diamond\texttt{reach}) \wedge \neg(\Diamond(\texttt{reach}) \wedge \Diamond(\texttt{re-route})) \wedge \Box(\texttt{danger} \rightarrow \Diamond\texttt{re-route})$$



Humour is Risky

- Difficult to predict whether it will work or not
- Especially risky at the opening
  - Audience does not know you:
    you fail —> your credibility is lost
- A speech is a “formal event”
  - Avoid controversial/taboo topics
  - Your audience will surely contain someone sensitive to religion, race, gender, death…
  - Talking about yourself is usually safe

Supporting Arguments

A speech must contain evidence to support speaker's assertions

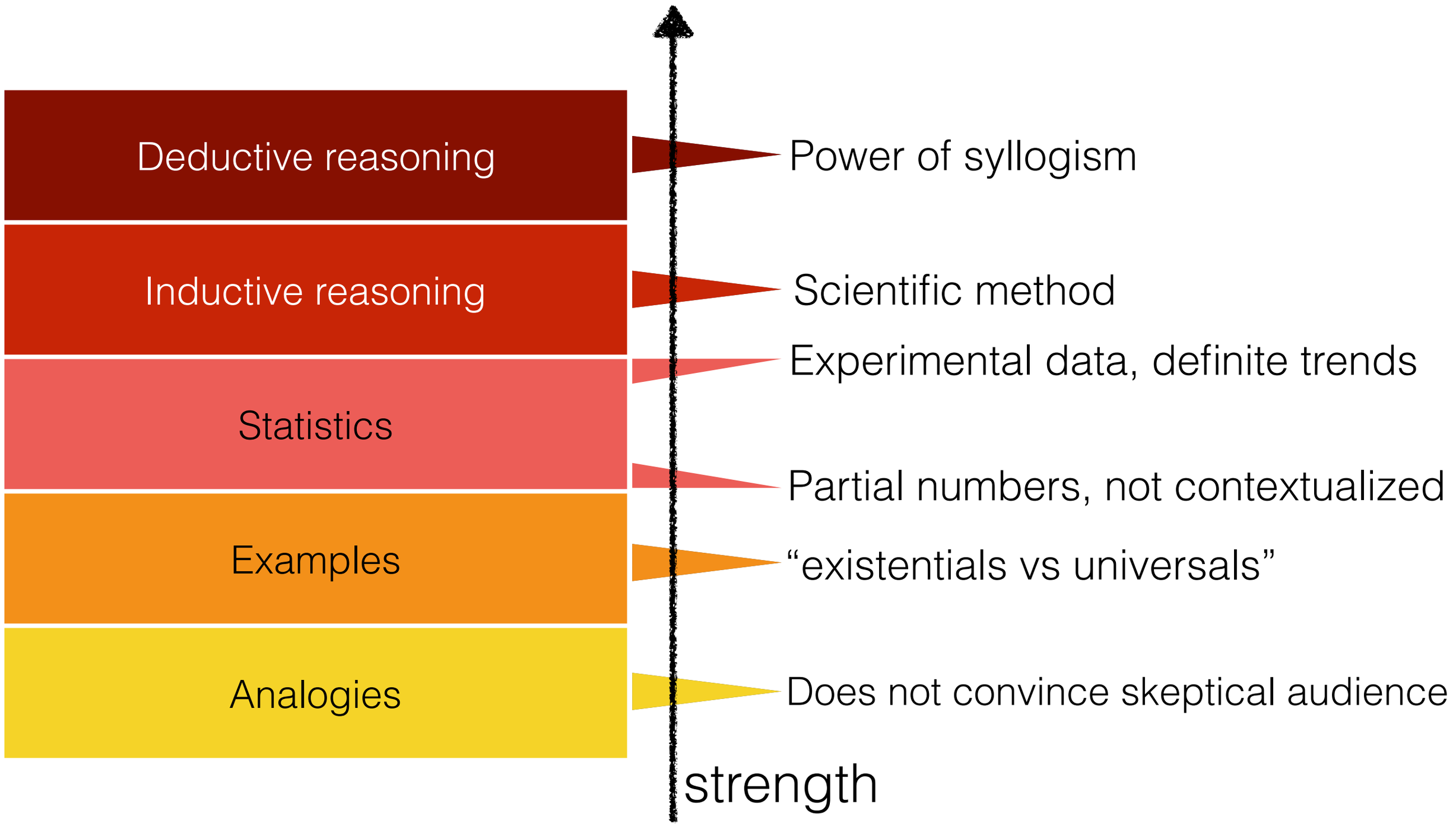
Appeal to:

logic

emotion of the audience

your own character

Logical Evidence



Emotion and Character

Appeal to character influences how well an information is received

- Ref. to yourself or neutral persons according to reputation: I vs a Nobel prize in economics say “Eurozone is in a crisis”

- Ref. to yourself with a statement contrasting your background/bias

- Connection to the audience, and ref. to specific experts in the audience

Critical Error 1

Giving the Wrong Speech

Key Forces

Who? Members of the audience

Why? Purpose of the presentation

When/where? Presentation context

The *Challenger* Story

- Space shuttle launch planned for Jan 28, 1986
- Jan 27, 1986: forecast indicates temperatures on Jan 28 much lower than expected
- Engineers from Morton Thiokol **know deduction**: the lower the temperature, the bigger the risk of explosion
- They organize a *urgent telecon* with NASA

The *Challenger* Story

- *Nasa has a strong bias against a delay*
- The presentation does **not** convince NASA
- The launch is confirmed
- On Jan 28, during its launch *the shuttle explodes*, killing all 7 crew members

Targeting the Audience

The content of a presentation cannot be decoupled from its intended audience

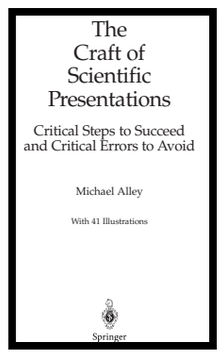
- What are the competencies and background of the audience?
- What is the general feeling the audience has towards the presentation topic?
- Which specific subjects from the audience are you specifically interested in?

1st Slide by Morton Thiokol… Issues?

Temperature Concern on

SRM Joints

27 Jan 1986



2nd Slide by Morton Thiokol… Issues?

HISTORY OF O-RING DAMAGE ON SRM FIELD JOINTS

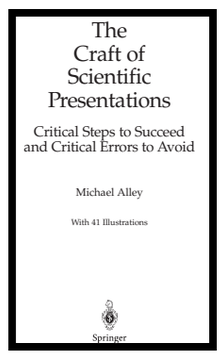
	SRM No.	Cross Sectional View: Erosion Depth (in.)	Cross Sectional View: Perimeter Affected (deg)	Cross Sectional View: Nominal Dia. (in.)	Top View: Length Of Max Erosion (in.)	Top View: Total Heat Affected Length (in.)	Clocking Location (deg)
61A LH Center Field**	22A	None	None	0.280	None	None	36º - 66º
61A LH CENTER FIELD**	22A	NONE	NONE	0.280	NONE	NONE	338º - 18º
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	--	--	50

*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 0-RING, BUT NO O-RING EROSION AND NO SOOT BLOWBY. OTHER SRM-22 FIELD JOINTS HAD NO BLOWHOLES IN PUTTY.



Bohr's Nobel Prize Talk

First sentence:

> Today, as a consequence of the great honor the Swedish Academy of Sciences has done me in awarding me this year's Nobel Prize for Physics for my work on the structure of the atom, it is my duty to give an account of the results of this work, and I think that I shall be acting in accordance with the traditions of the Nobel Foundation if I give this report in the form of a survey of the development which has taken place in the last few years within the field of physics to which this work belongs.

General Guidelines

Before the presentation

- Imagine how the audience will be
- Prepare the presentation asking yourself:
  - Will the audience be interested?
  - Will the audience understand?
- Mentally run the presentation accordingly
- Ask for advice

General Guidelines

During the presentation

- Ask exploratory questions
- Constantly monitor the audience reaction (eye contact)
- Dynamically re-tune

General Guidelines

After the presentation

- Fix immediately all the detected errors
- Reconstruct how the audience react when
- Reconstruct Q&A
- Revise accordingly
- Annotate important issues and new ideas as they come!

Targeting Multiple Audiences

people

Nontechnical

General Technical

Specialist

depth

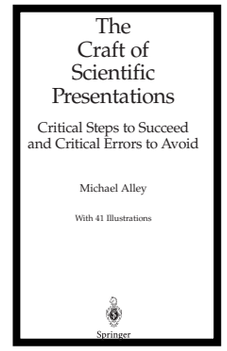
Intro

First Major Topic

Second Major Topic

Ending

time



critical!

Presentation Purpose

A mixture of three goals

- Inform
- Persuade
- Inspire

Their balance is fundamental to succeed

Presentations to Inform

- Audience does not doubt the content
- Strategy: deliver information logically and directly

  tell them what you are going to tell them,
  tell them, and
  tell them what you have told

Example: a tutorial

Presentations to Persuade

- Many strategies, depending also on the stance of the audience
- Usually the goal is to achieve a compromise
- Sometimes cooperation is better than competition

> Pauling's talk was made with his usual dramatic flair. The words came out as if he had been in show business all his life. A curtain kept his model hidden until near the end of his lecture, when he proudly unveiled his latest creation. Then, with his eyes twinkling, Linus explained the specific characteristics that made his model—the α-helix—uniquely beautiful.... Even if he were to say nonsense, his mesmerized students would never know because of his unquenchable self-confidence.

Presentations to Inspire

- Inspire is often one of our goals
- Think about teaching, keynote talks, conference openings, …
- Also conference presentations aim at inspire other people to work on the topic (and hopefully collaborate)

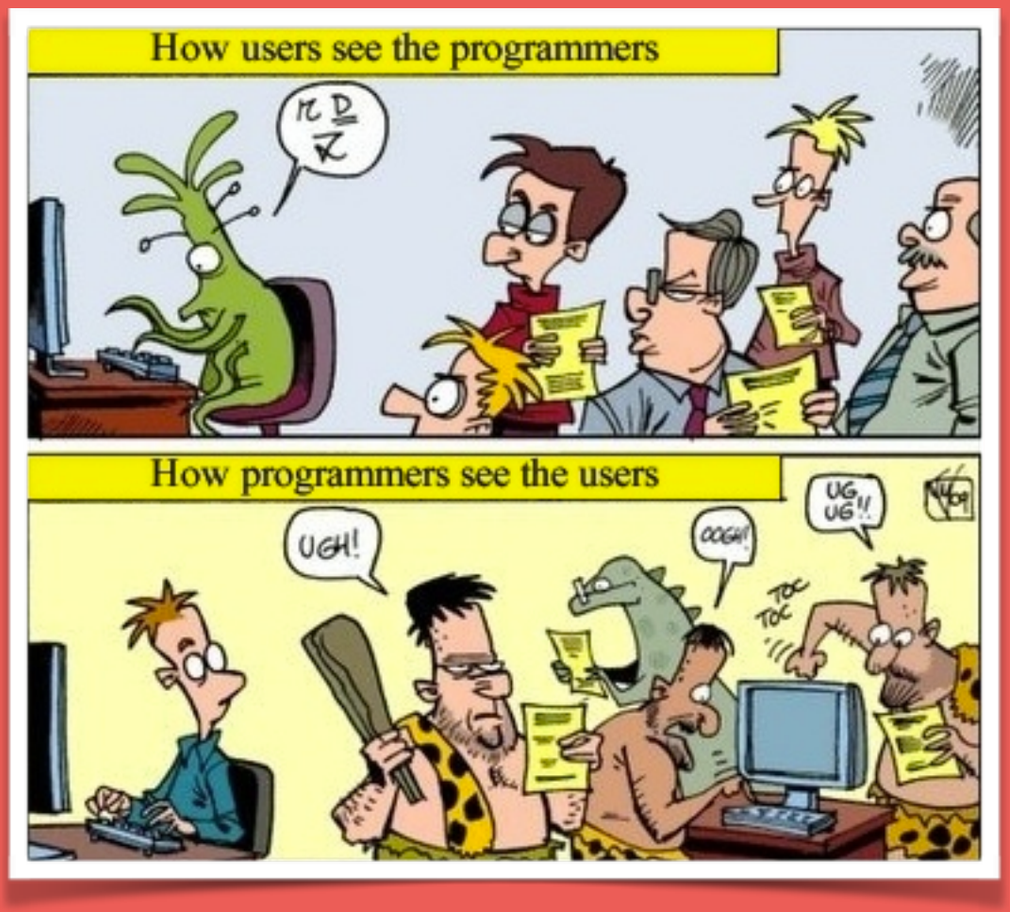
Check **TED.com** (“ideas worth spreading”)

Presentation Context

Tune parameters for presentations:

- Degree of formality (conf. vs business meeting vs. informal seminar)
- Location (room size, #people, slide projection)
- Logistics (face-to-face vs telecon, mic amplification)
- Time (morning vs after lunch vs late afternoon)
- Time limits: never exceed them!!!

Critical Error 2



Drawing Words from the Wrong Well

Bohr, Churchill, and the Bomb

- During WW2, Bohr predicted the atomic arms race
- He wanted to alert Churchill, but was not proficient in English
- So he wrote a draft, and made his friend Jones improve it
- He **memorized** the speech
- On the day of the meeting, he failed miserably
  - Churchill was hostile to the topic
  - Bohr needed to **improvise**
  - Churchill lost patience

Sources of Speech

Speaking from points

Speaking off the cuff

Memorizing

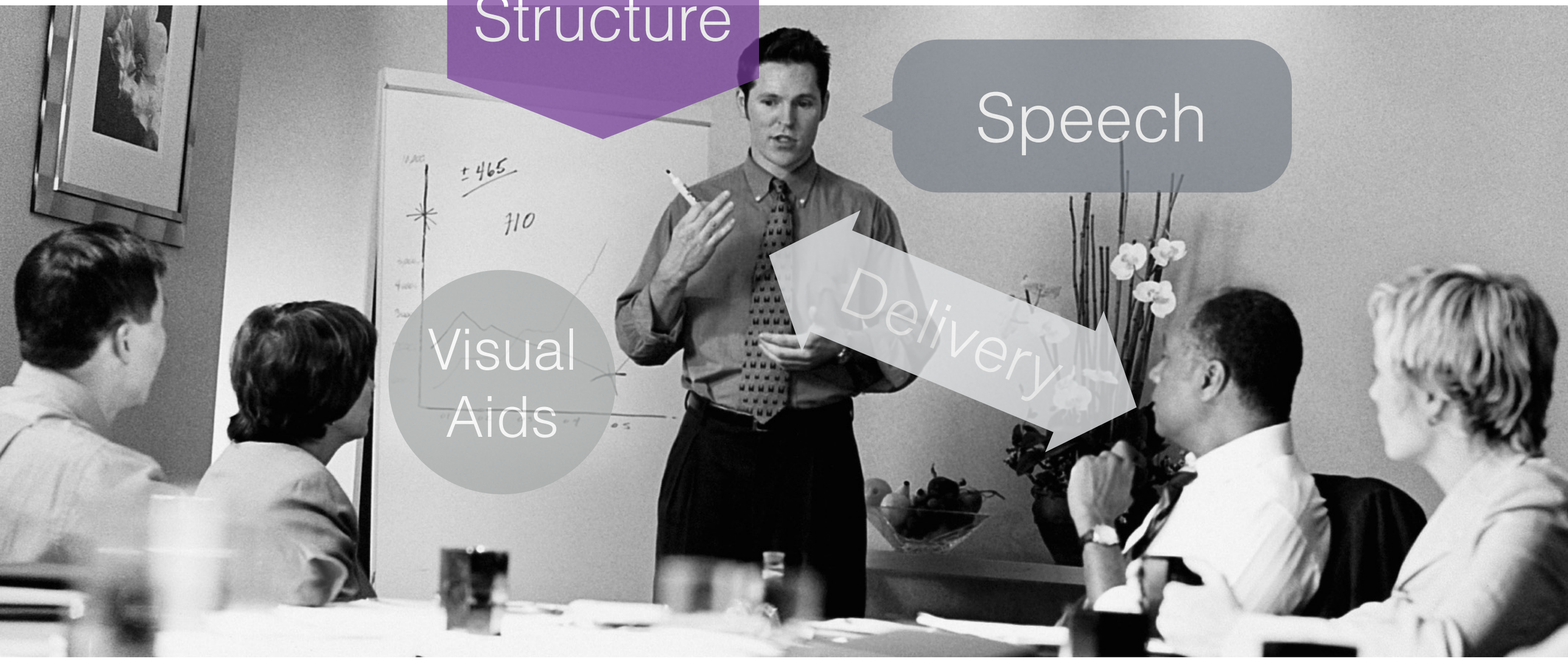
Reading

+ and -

Sources	+	-
Speaking from points	earn credibility ease of retuning eye contact natural pace	wording not exact long preparation time
Speaking off the cuff	no preparation time eye contact natural pace	potential for disaster difficulty in organizing no visual aids risk of using “fillers” (er,um)
Memorizing	precision smooth delivery earn credibility eye contact	potential for disaster unnatural pace inability to adjust speech long preparation time
Reading	precision smooth delivery	credibility undercut no eye contact inability to adjust speech long preparation time

Situations and Sources

Sources	+
Speaking from points	Conference presentation Business meeting presentation University lecture
Speaking off the cuff	Q&A On-the-fly explanations
Memorizing	First few words of a presentation Short introduction of a speaker
Reading	Press conference Quotation within a presentation Complex wording within presentation


Structure
Speech
Delivery
Visual Aids

Presentation Structure

- Organization of the major points
- Transitions between points
- Emphasis of details

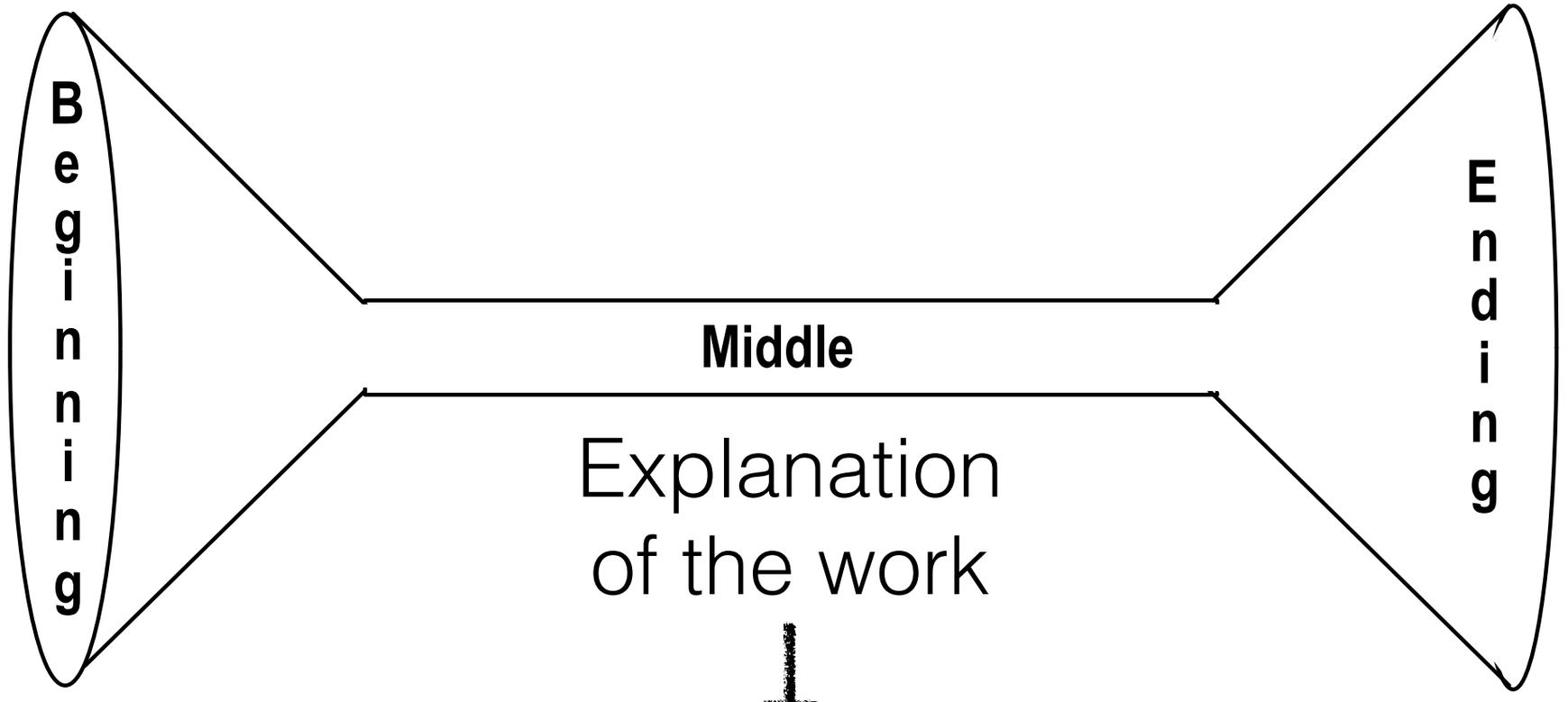
A Presentation is not a Document

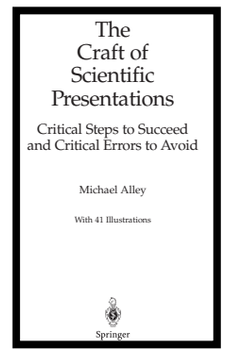
- The opening must orient the entire audience
  - Linear structure, no access to background info
- Mapping from speaker to audience
  - Audience only access the current “moment”
- Importance of signalling transitions
  - No Sections / Subsections in a presentation

Organization

Big picture

Impact of the work on the big picture





Explanation of the work

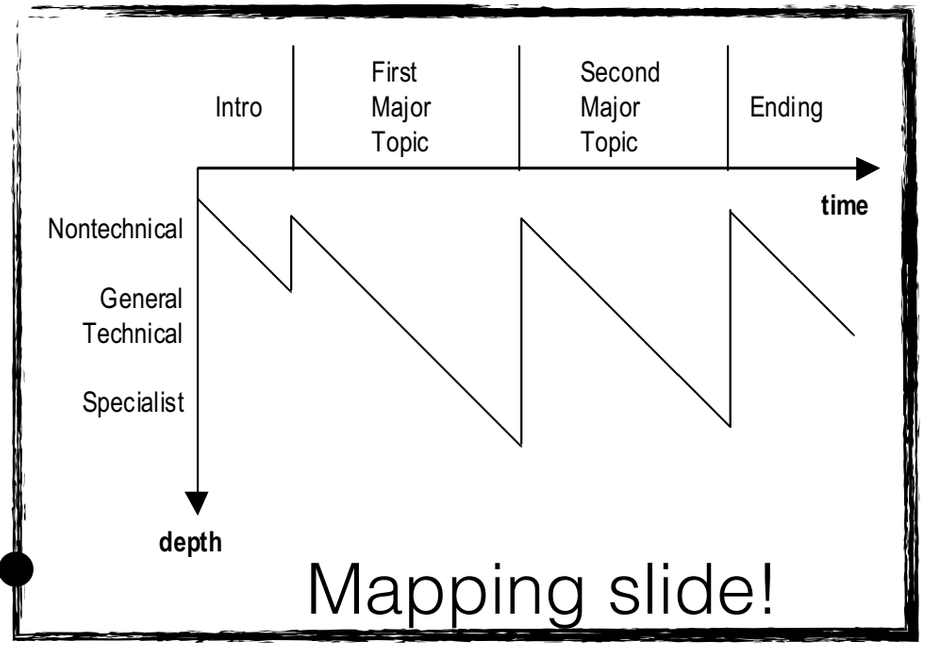
↓

Modularization

↓

Each module explained: chronologically, spatially, logically

Transition Management



Middle

Topic 1

Topic 2

Topic 3

Beginning

Ending

Important for the audience but also for the session chair

2 Personal Examples

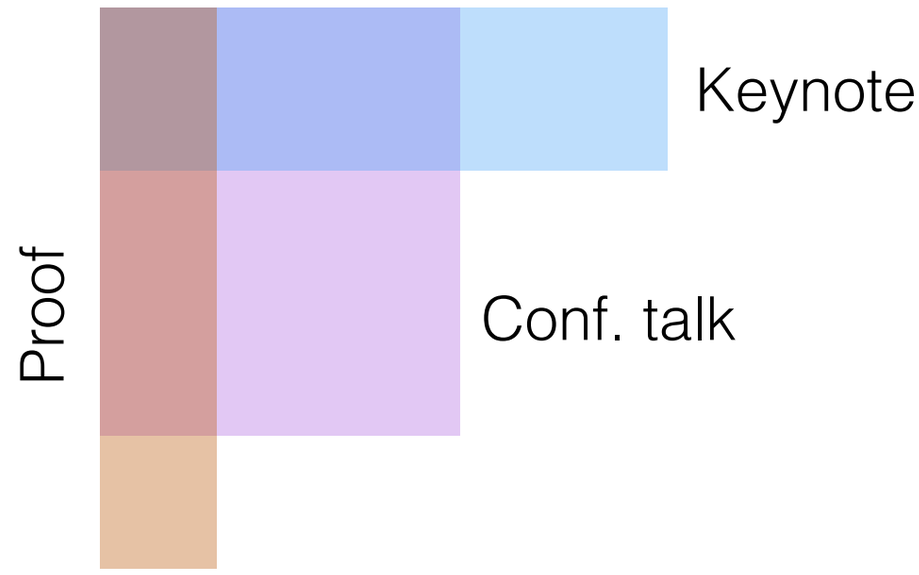
- KR 2014
  - Highly technical audience
  - Work uses techniques non-standard for the KR community
- BPM 2014
  - Highly diversified audience
  - Highly technical work, with repercussions to practice

Look at phases, transitions, mapping slides and watchpoints

Tuning Depth

- Possibly the most widespread reason for failing a talk: too many slide, too detailed

- General rule:
  time = depth X scope



- Time is usually fixed

- Scope determines the presentation boundaries

- The wider the scope, the more challenging to satisfy the audience

Tuning Depth

Strategy: sacrifice completeness for clarity!

- Guess what the audience will be interested in
- Pick and choose 2-4 topics to expand
- Just overview the others
    - People can find them in the paper

See again the KR 2014 example

Emphasis

As important as organization of details

- People remember ~10% of what they hear
- No proper emphasis: people will remember a random 10% of the content

Emphasis

Emphasis to be placed on transitions

- Major points: beginning-conclusion
  - Do not skip the conclusion slide
  - Keep the conclusion slide during Q&A
- Minor points: in the middle
  - Break-down of phases: people remember groups of 2-3-4 items

Critical Error 3

Leaving the Audience at the Dock

Typical Opening

- Title slide: 20-30 secs at most
- Audience cannot even remember who is presenting and what is the topic
- Second slide: outline of the speech
  - at the meta-level (hence, useless), or
  - with 200 bullet points (hence, again useless)
- Effect 1: too many people lost at the dock
- Effect 2: too much time lost

The Beginning is Crucial

- Must be understandable by the widest part of the audience
  - You have your target, but don't forget the others
  - Don't fear to be simplistic (we already know you are smart…)
- Must anticipate the audience bias and initial questions
- Must be short
  - <10 out of 60 mins, <5 out of 15 mins
  - You have something to say about your work, right?

Questions to be Answered

- What exactly is the subject?
- Why is this subject important?
- What background is needed to understand the subject?
- How will be the subject presented? (outline)

The entire audience must be aware of this when intro is over

What is the Presentation About?

Explain it

- Without overwhelming the audience
- Calmly (20-30 sec do not suffice)
- Without assuming prior knowledge
- Possibly with an image on the title page
  - Also including your name, affiliation, sponsor, co-authors / supervisor / …

Subject Importance

- “Locate” your work inside the map of the research area
- Contextualize the subject and the impact of your work
  - Money, safety, health
  - Data management, software engineering, …

Subject Importance

- Make connections explicit
- Stimulate curiosity (independently from importance)
- Use examples to the point
  - Carefully choose between made-up and realistic examples

Needed Background

- Crucial to understand the presentation
  - Do you know the frustrating fear/feeling of total ignorance when listening to a talk?

- **Explicitly** mention which preliminary knowledge you assume
  - This prepares the audience
  - Details can be given later on

- Also **working assumptions** must be clarified upfront
  - Again: anticipate audience questions/doubts!

Outline

Goal: reveal the plan of the speech, clearly and memorably

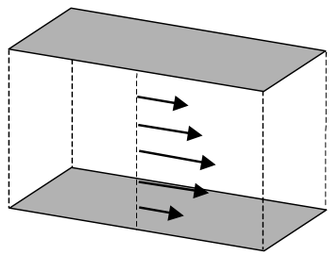
- Anticipate the path and where it is going to lead

Outline

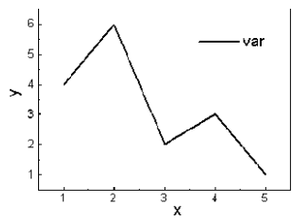
- Introduction
  - Channel flows
  - Couette flows
- On the difference between channel and Couette flows
  - Simulated cases
  - Long-term statistics
  - Visualization techniques
- Conclusion
- Future Work

VS

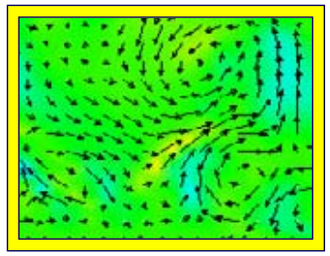
This presentation examines differences between channel and Couette flows



Simulated Cases



Long Term Statistics



Visualization

Anticipating Audience Bias

- Do not make the mistake of just focusing on “inform” the audience
- Usually you have to persuade the audience, considering its bias
  - This should deeply affect the organization of the presentation
  - For conference presentation: check the reviews carefully

Anticipating Audience Bias

- Audience has initial positive bias: aim at reinforcing it
- Audience has initial negative bias: aim at mitigating it

Handling Antagonistic Audience

Define the questions up front, without giving away your result

- The audience will at least listen

Do not set too high expectations

- “An important scientific innovation rarely makes its way by winning over and converting its opponents” (M. Planck)

Handling Antagonistic Audience

Rogerian strategy: show that you understand the arguments of the opposition

- Throw a bridge and mitigate the bias
- Especially effective when you want to reach a compromise

Critical Error 4

Losing the Audience at the Sea

Losing Audience in the Middle of the Talk

- Structure with logical gaps
- Major change without any warning
- Audience drown in details

Avoiding Logical Gaps

- Confidently discuss aspects that are “set-in-stone”
- Tentatively expand the boundaries and discuss conjectures
- Especially if the setting is informal (e.g., workshop)
- Risk: embarrassing yourself
- Gain: get feedback and help

Avoiding Logical Gaps

Do not downplay results that you don't understand

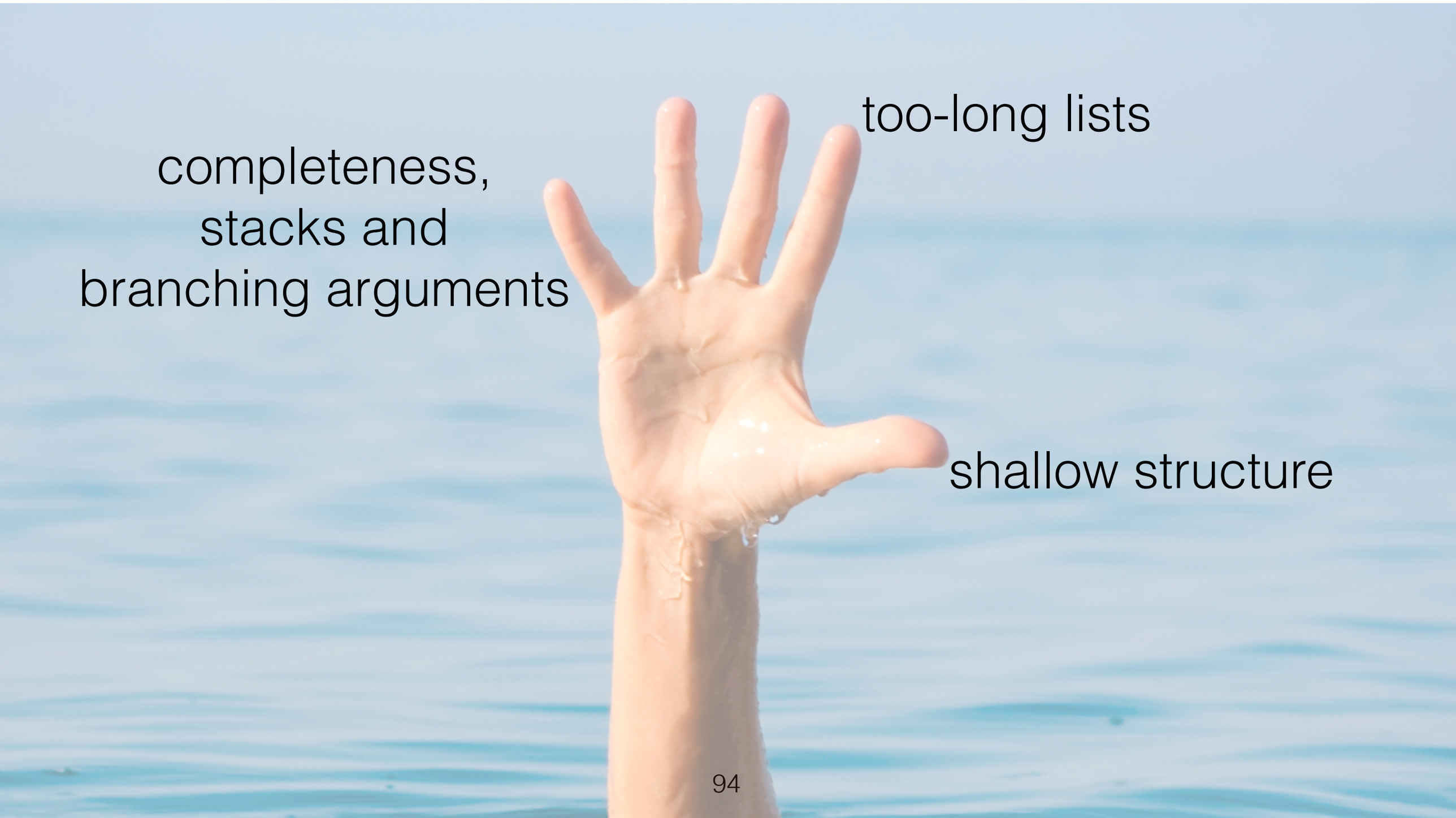
- The audience will "surely" spot weak arguments
- Strategy: "if you can't fix it, feature it"

Keeping Audience on Track

The audience must always be aware of “where we are”

- Spell out every transition between phases!
  - Verbal communication (warn, summarize)
  - Visual communication (mapping slides, images, icons)
  - Non-verbal communication
    (pause, change voice volume, gestures, movements)
- Last transition to be clearly announced
  - Regain audience attention and prepare it for Q&A

Drowning Audience in Detail



Bohr's Nobel Speech

The present state of atomic theory is characterized by the fact that we not only believe the existence of atoms to be proved beyond a doubt, but also we even believe that we have an intimate knowledge of the constituents of the individual atoms. I cannot on this occasion give a survey of the scientific developments that have led to this result—I will only recall the discovery of the electron toward the close of the last century, which furnished the direct verification and led to a conclusive formulation of the conception of the atomic nature of electricity which had evolved since the discovery by Faraday of the fundamental laws of electrolysis and Berzelius's electrochemical theory, and its greatest triumph in the electrolytic dissociation theory of Arrhenius.

Nüsslein-Volhard Nobel Speech

> In the life of animals, complex forms alternate with simple ones. An individual develops from a simple one-celled egg that bears no resemblance to the complex structure and pattern displayed in the juvenile or adult form. The process of embryonic development, with its highly ordered increase in complexity accompanied by perfect reproducibility, is controlled by a subset of the animal's genes. Animals have a large number of genes. The exact number is not known for any multicellular organism, nor is it known how many and which are required for the development of complexity, pattern, and shape during embryogenesis. To identify these genes and to understand their functions is a major issue in biological research.

Handling Lists

- Rule: people remember 2-3-4 bullets

- Game: count the average bullets in presentations ;-)

- How to handle big lists? Divide and conquer

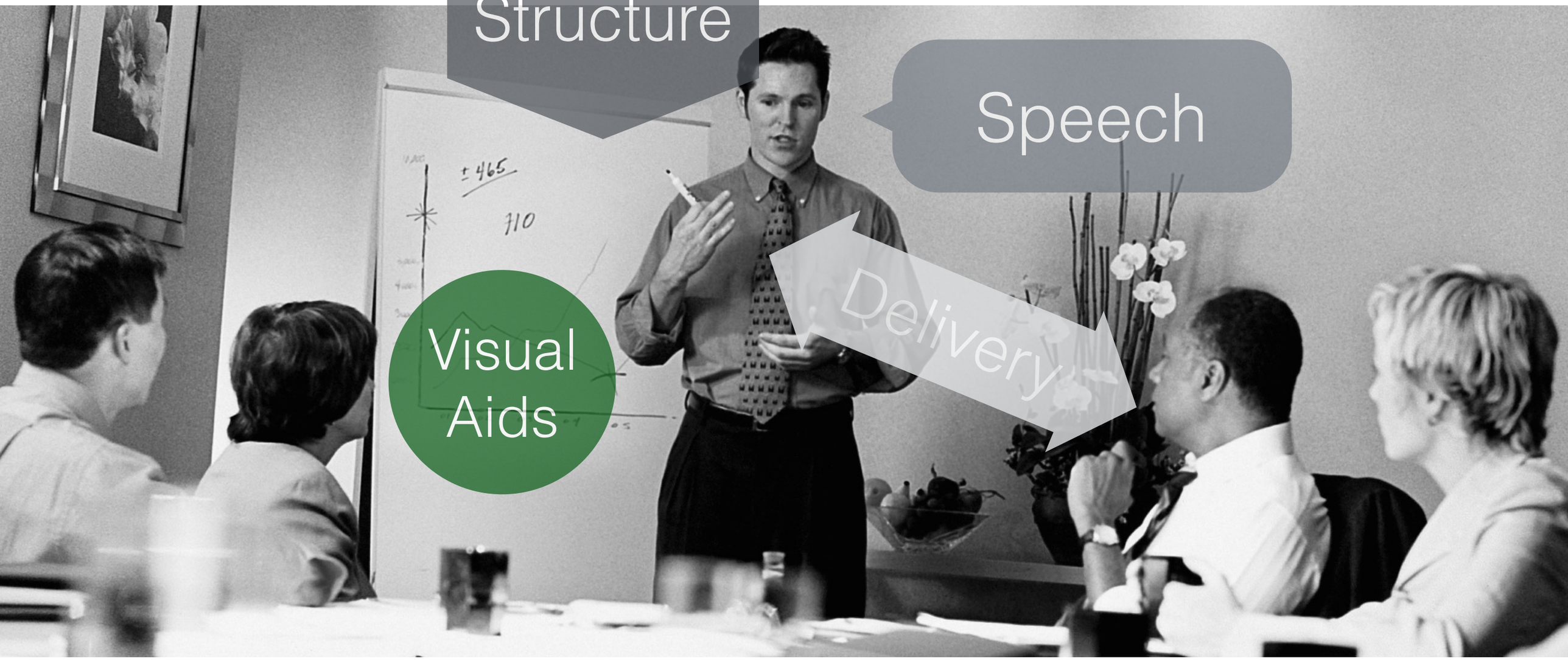
“Structure Must be Structured”

Details must be carefully

- filtered and selected
- hierarchically organized

Make sure that important details are perceived as important

- Images/text vs speech-only
- Non-verbal communication to give “structure”


Structure
Speech
Delivery
Visual Aids

+ and -

Type	+	-
Slides	images emphasis of key details	risk of being boring risk of being too dense
Posters	audience drives one-on-one discussions	readability depends on location risk of being too dense
Writing boards	good for derivations slow	too slow for detailed drawings readability depends on handwriting
Movies	good for dramatic changes sounds	audience focuses on screen audience has high expectations

+ and -

Type	+	-
Demos	engaging the audience show that a system exists multisensorial	can fail
Models	leverage on 3D	ineffective unless correctly dimensioned for the audience
Handouts	audience leaves with the message	could distract the audience
Passed objects	multisensorial	could distract if audience is large

Slides

Observation: people remember

- 10% of what they hear
- 20% of what they read

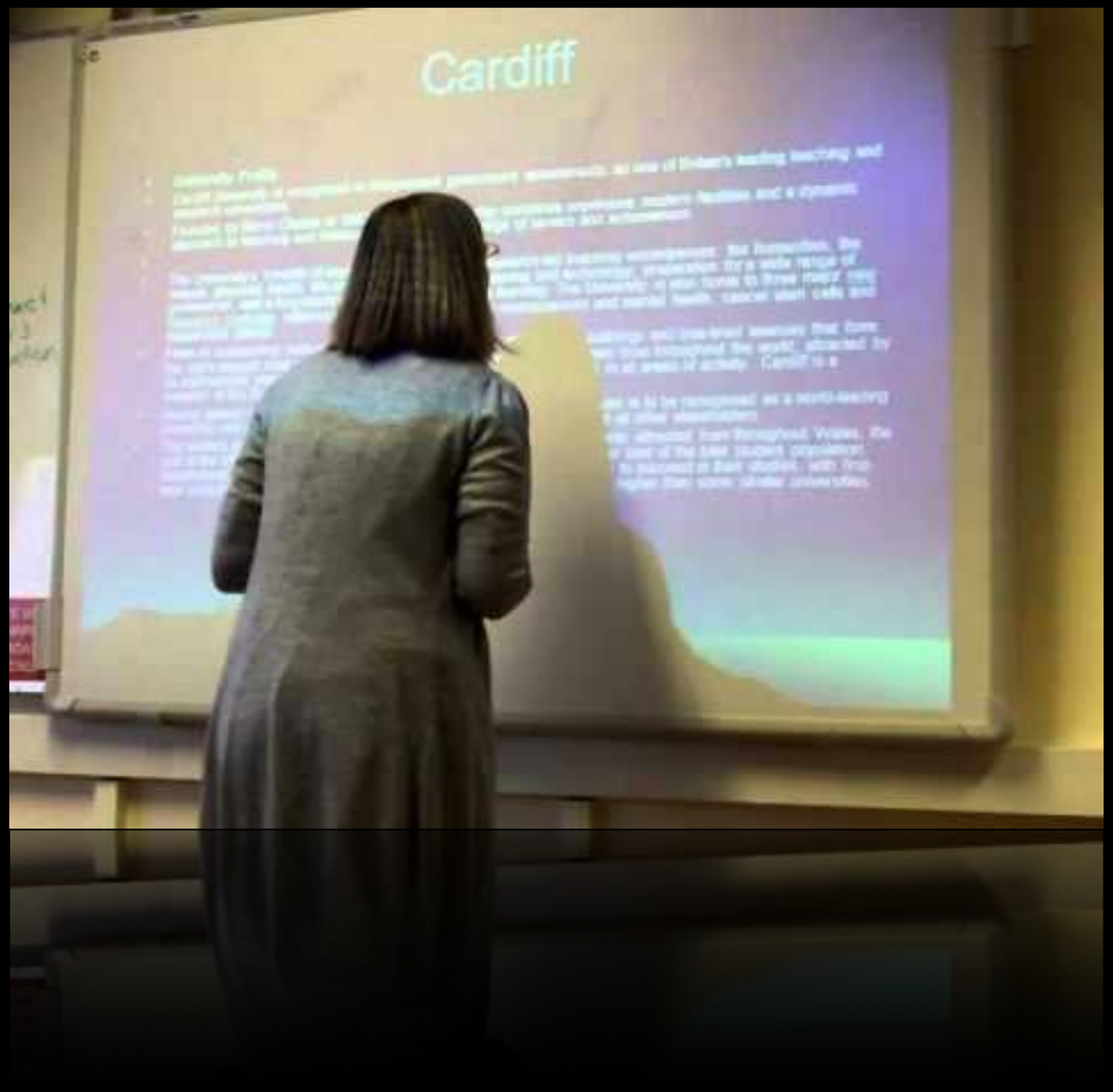
Effective slide can increase both to 50%. How?

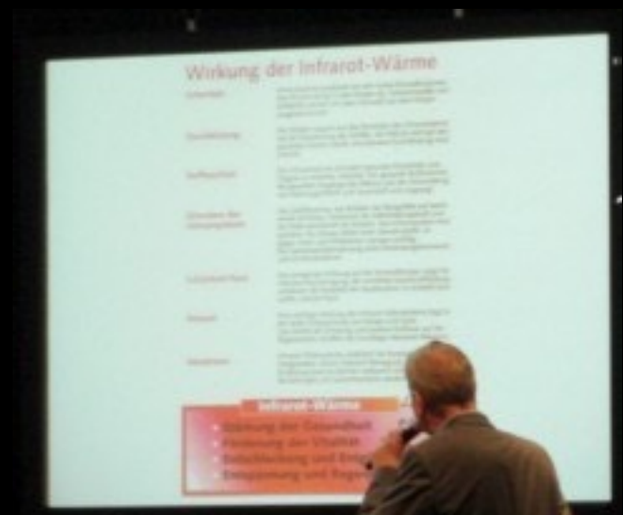
- Content
- Structure
- **Design**

Critical Error 5

Projecting Slides that no One Reads

Sounds Familiar?





A Recent Example

Slide Numbering

- Put it… always
- Also helps during Q&A

Fonts

- Defaults
  - Don’t trust Powerpoint
  - Beamer and Keynote are ok
- Sans-serif fonts are more readable than Serif fonts
- UPPER CASE REQUIRES TO READ EVERY SINGLE LETTER, while lower case does not
- This is unreadable

Bad Color Combos

Come on, Internet is full of nice color combos!

- Just google “color combos”

Dangerous Color Combos

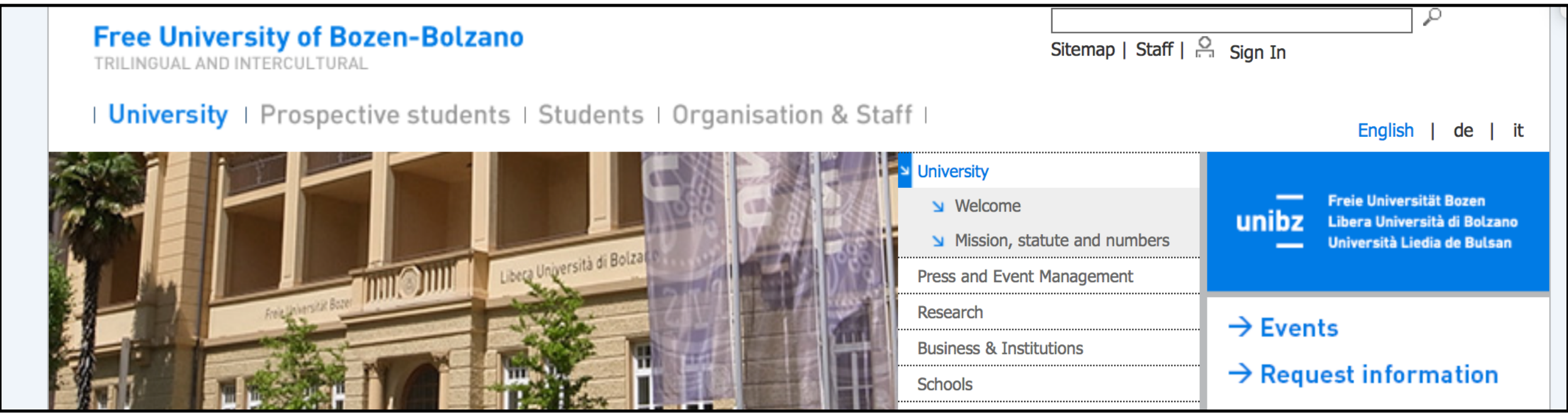
The audience reacts to colors!

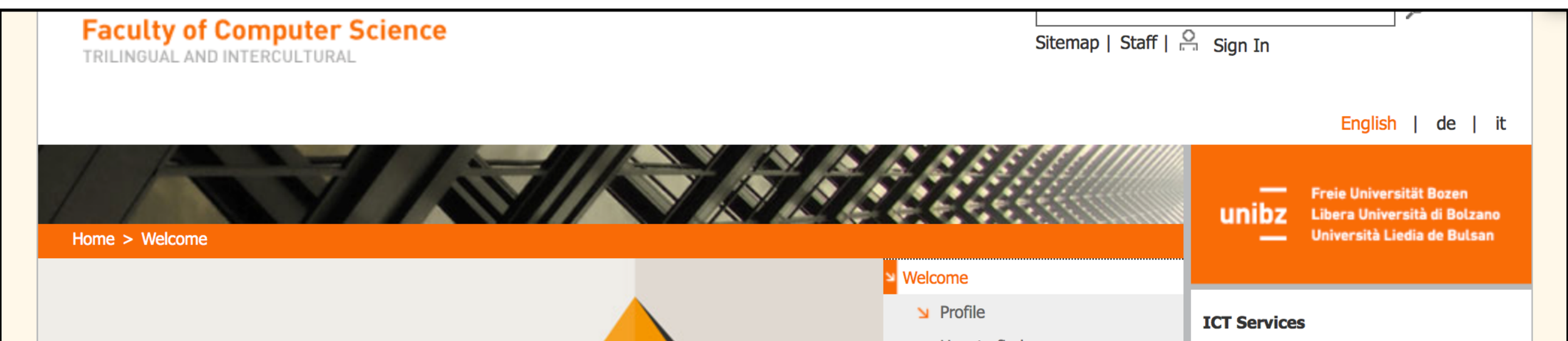
Risky Color Combos

- Remember: slides have to be projected
- Projectors make colors bad - yes, they still do
  - Always imagine a diluted version of your combo
- Avoid too similar colors and green/red combos
- Avoid dark background and light foreground
  - Projectors usually react worse

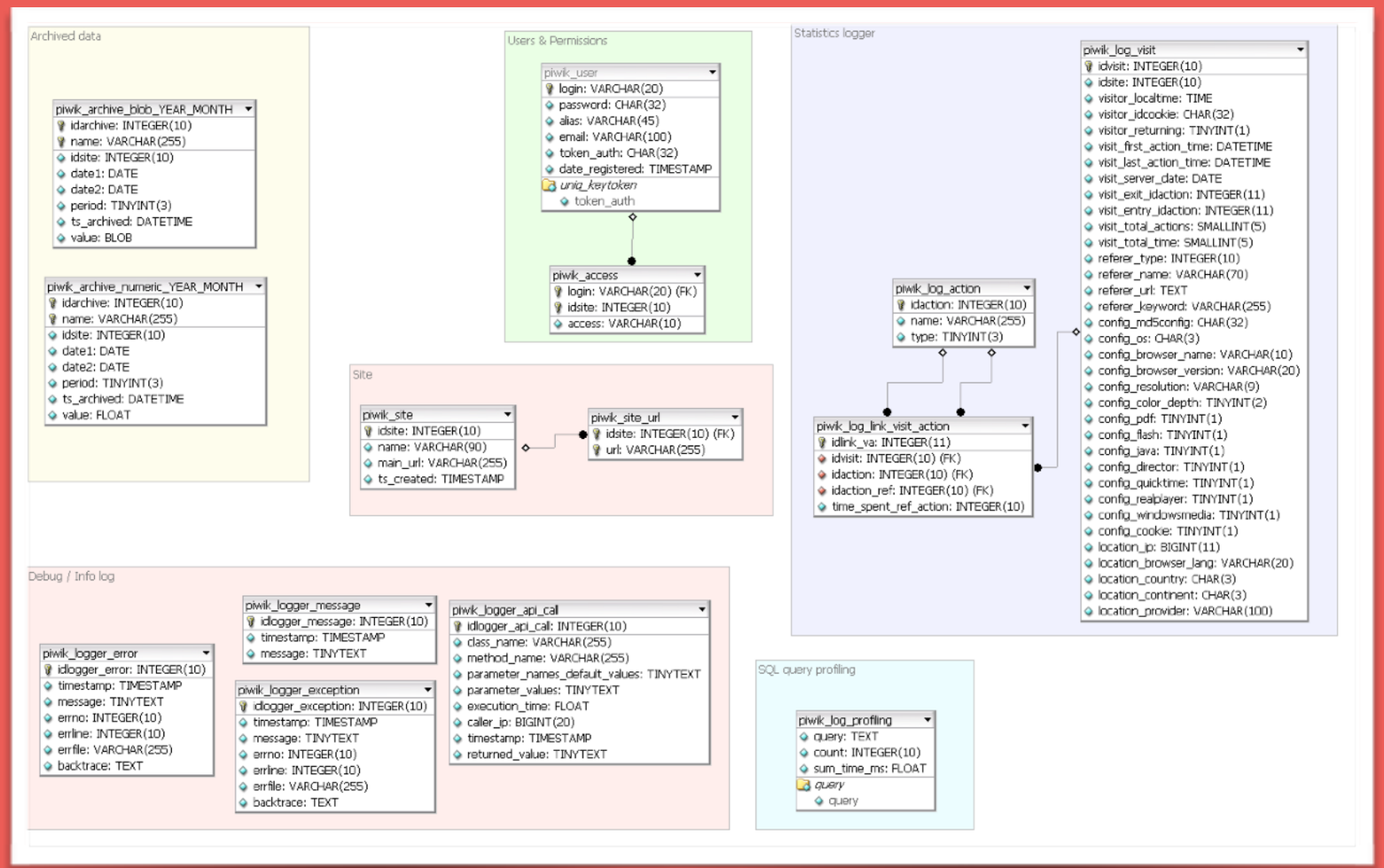
Family Colors

Remember: your institution loves you





Critical Error 6



Projecting Slides that no One Remembers

Style

- Informative/provocative headlines
- Short sentences
- What you say >> what is on the slide
- Lists
  - Avoid >4 items
  - Do not exaggerate with bullets and sub-lists

More on Style

- Use images when possible
- Do not exaggerate with content on a slide
- White areas are as important as filled areas
- Always apply margins (projectors are bad)

"Welcome to today's design class on the use of white space in layouts. The notes are on the board."

Animations

- Use them logically, not just for style
- Do not exaggerate
  - They confuse the audience
  - They cause trouble if you need to go back&forth
- If possible, make them exportable to PDF
  - I.e., only use “appear/disappear” effects

Overall Organization

Introduction: put a lot of effort here!

- Use evocative/informative images
- Informative talk organization slide

Central part: iterate

- Mapping slide with key images for transitions
- Body slides with key results expressed concisely

Overall Organization

Final part:

- 1 conclusion slide
- 1 future work slide
- Try to avoid bullet lists

Critical Error 7

Ignoring Murphy's Law

Murphy's Law

Anything

that **can** go **wrong**

will go **wrong**

Mitigate Murphy's Law

- Rehearse
- Account for the worst
- Arrive early
- Consider the "demo effect"

Rehearse

Simulation of the speech

- Mentally
- With colleagues
- Organize a group seminar before a conference presentation
- Try to anticipate questions and doubts

Memorize the first introductory sentences

Account for the Worse

- Always bring your own laptop with connectors
- Always put your presentation on a USB stick
- If possible, export your presentation as a PDF
  - There are still interoperability issues!!!!
- Bring your own laser pointer

Arrive Early

- Study the audience
  - Attend your conference track AND session
- Always try the provided equipment beforehand
  - Minimize the context switch is a must
- At conferences, usually 5 mins before the session you should get in touch with your session chair
  - Check who is the session chair (Q&A…)

“Demo Effect”

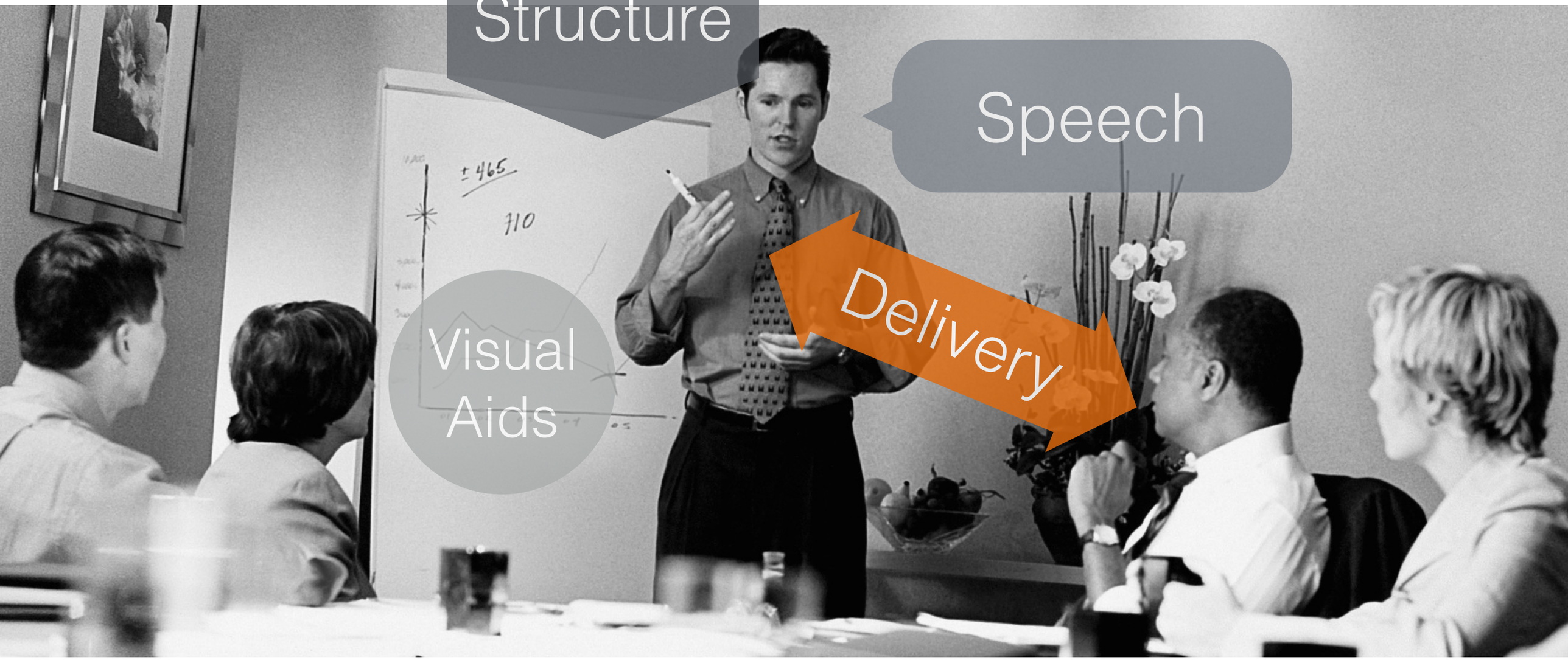
Demos during talks typically fail

- Evaluate
  - How complex it is to run the demo (worst case)
  - What is the gain/loss if the demo succeeds/fails
- Do not make any assumption on the connectivity
  - Demos must be stand-alone

An Example

Do you remember the blue-screen of death?

https://www.youtube.com/watch?v=IW7Rqwwth84


Structure
Speech
Delivery
Visual Aids

Delivery

The interaction with the audience and the room

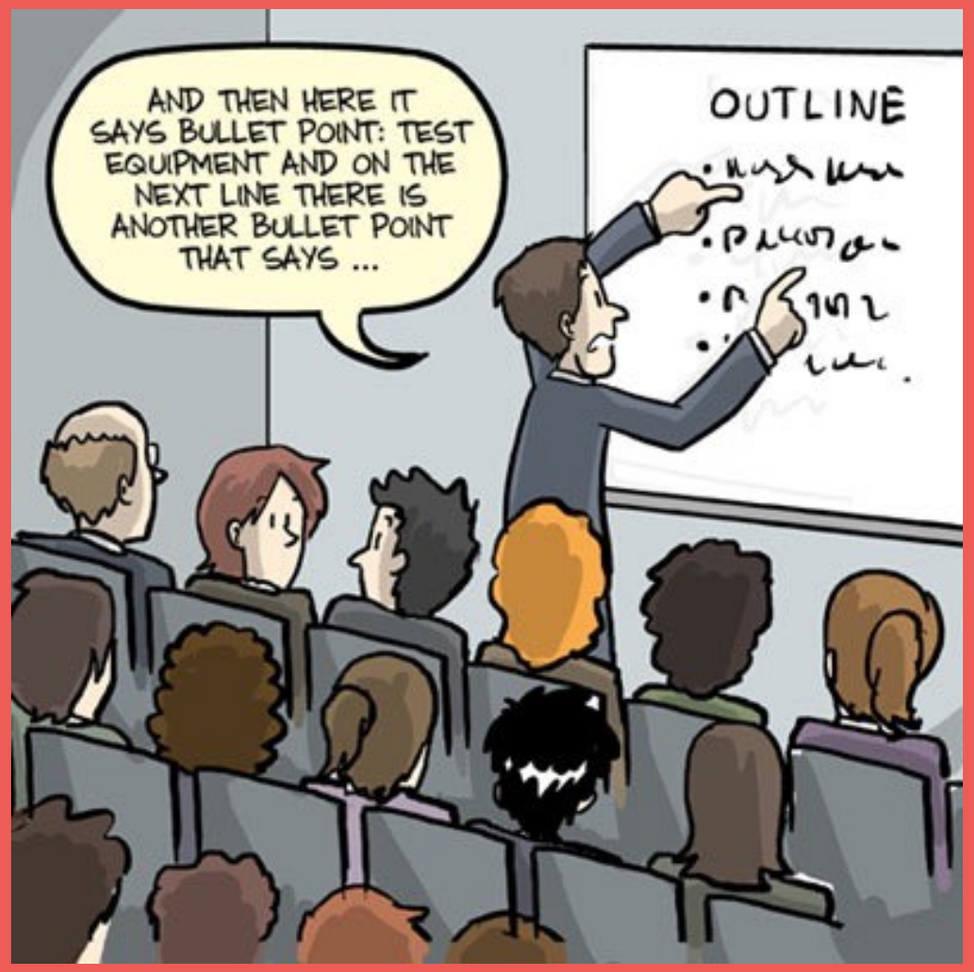
- Voice
- Gestures
- Eye contact
- Stance
- Movement

Two General Rules

Be enthusiastic about your research, and try to show your enthusiasm during your talk

Consider the occasion, and tune whether to be informal/formal/sober depending on the context

Critical Error 8



Not Preparing Enough

Preparation Time

Preparing a presentation is time-consuming

- Find visual support
- Prepare the slides, iteratively
- Rehearse
  - Do not change the slides at the last minute!!!

Critical Error 9

Not Paying Attention

Darwin's Disconnection

> I could somehow see nothing all around me but the paper, and I felt as if my body was gone, and only my head [was] left.
>
> C. Darwin

Attention to the Room

- Study the room: projector position, doors, lights, …
- Take charge
- Act in the environment so as to mitigate noises and other issues
- Stop talking in case of noise that cannot be controlled

Attention to Yourself

- Try to control your verbal and non-verbal communication
- Avoid unnecessary movements
- Learn how to use the equipment

Attention to the Audience

- Find interested people that provide feedback, and make eye-contact with them
- Do not always stare at the same person
- Focus on the content of questions during Q&A

Attention to Time

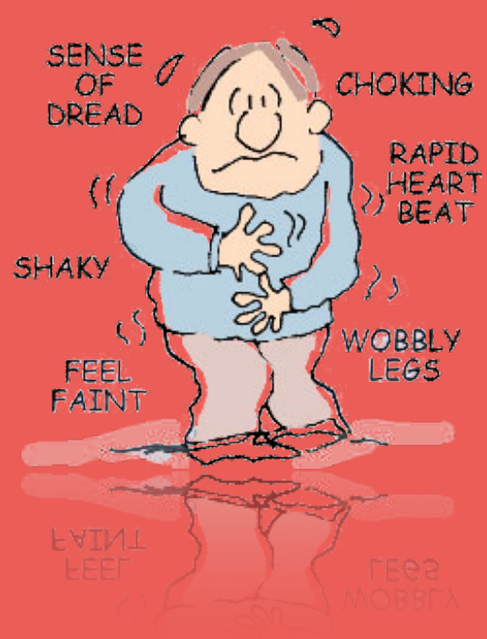
General rule: never exceed your time!

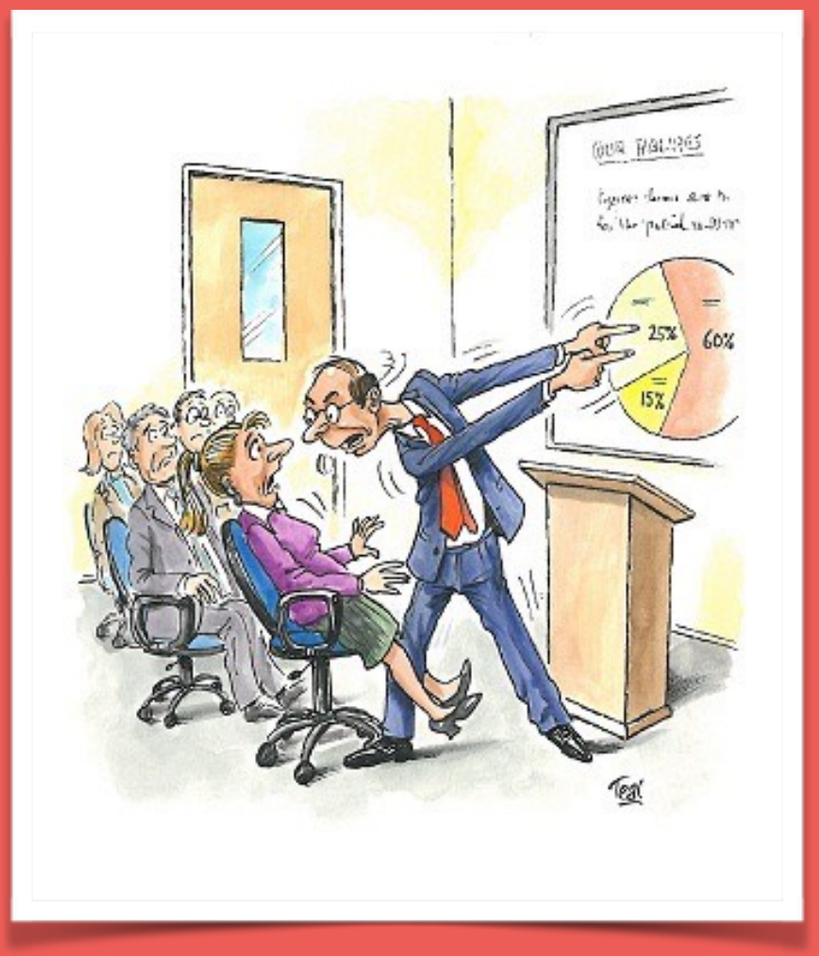
- Try to honor also the Q&A slot
- Do not finish too early
- Practice, practice, practice
  - Measure time for the most difficult parts
- Remember: typically, you talk more than expected
- Understand how do you react when you are nervous

Attention to Time

- Do not digress too much
- Prepare exit strategies, prioritize and modularize your presentation
- Set up a timer, or ask to the session chair
- Do not be scared of defer Q&A and tangential discussions triggered during the speech
  - But consider this case-by-case

Critical Error 10





Losing Composure

Stage Fright

On Monday and Wednesday, my mother was nervous and agitated from the time she got up. At five o'clock on these days she lectured. After lunch she shut herself into her study in the Quai de Béthune, prepared the lesson, and wrote the heads of chap- ters of her lecture on a piece of white paper. Towards half-past four she would go to the laboratory and isolate herself in a little rest room. She was tense, anxious, unapproachable. Marie had been teaching for twenty-five years; yet every time she had to appear in the little amphitheater before twenty or thirty pupils who rose in unison at her entrance she unquestionably had "stage fright."

E. Curie

Nervousness

- You will always experience it before/during a speech
- Goal: control it
- Before the talk: imagine that you will be successful
- Mentally repeat the first 2 mins: the beginning is the most difficult moment
- Be proud, and recall: audience does not read your mind
- Try not to loose composure due to external events

Handling Questions

Question

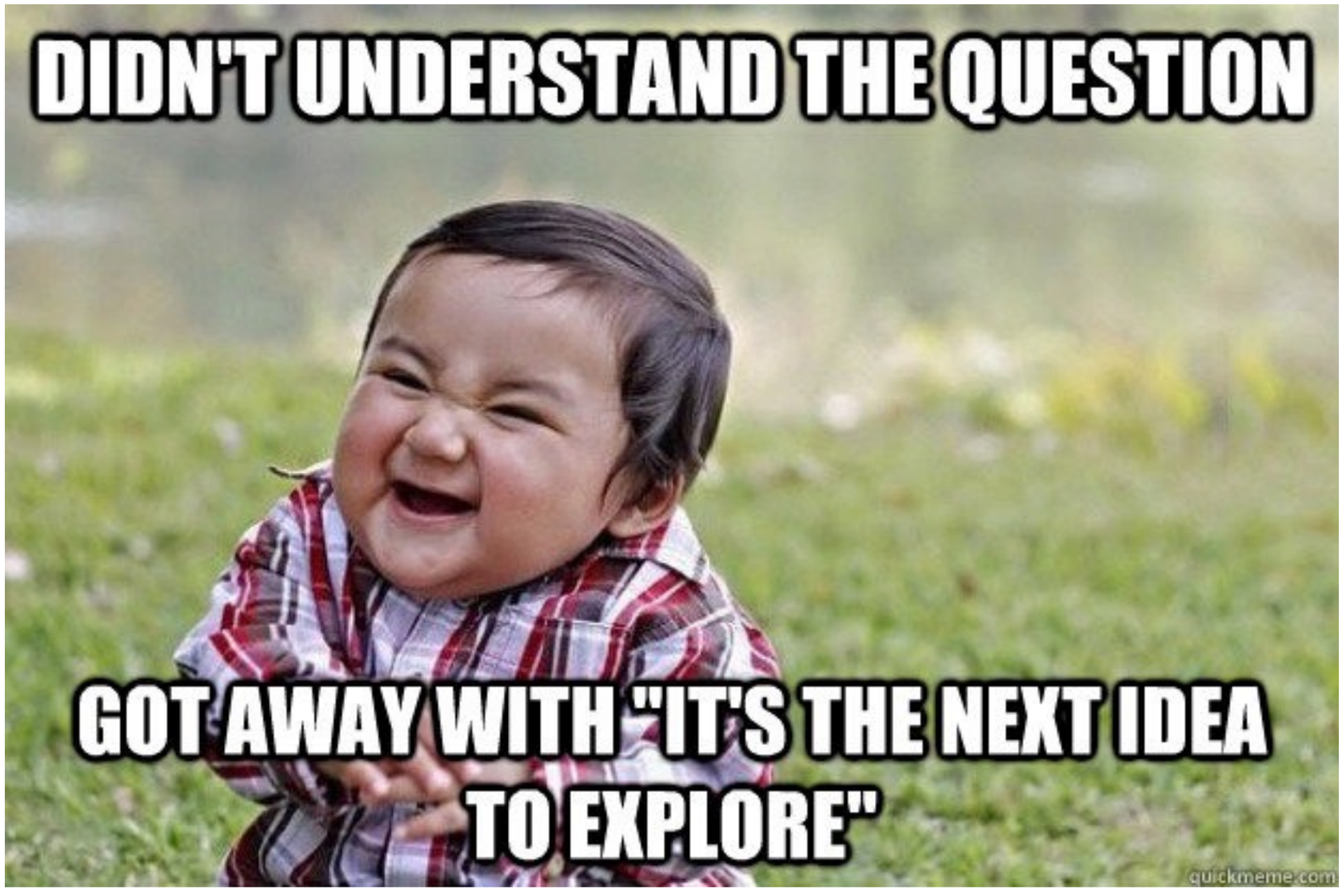
- Listen carefully
- Don’t hesitate asking clarifications

Answer

- Take your time (pause appreciated)
- Rephrase the question
- Answer concisely

Handling Questions

What if you don’t know the answer?



Handling Questions

What if you don’t know the answer?

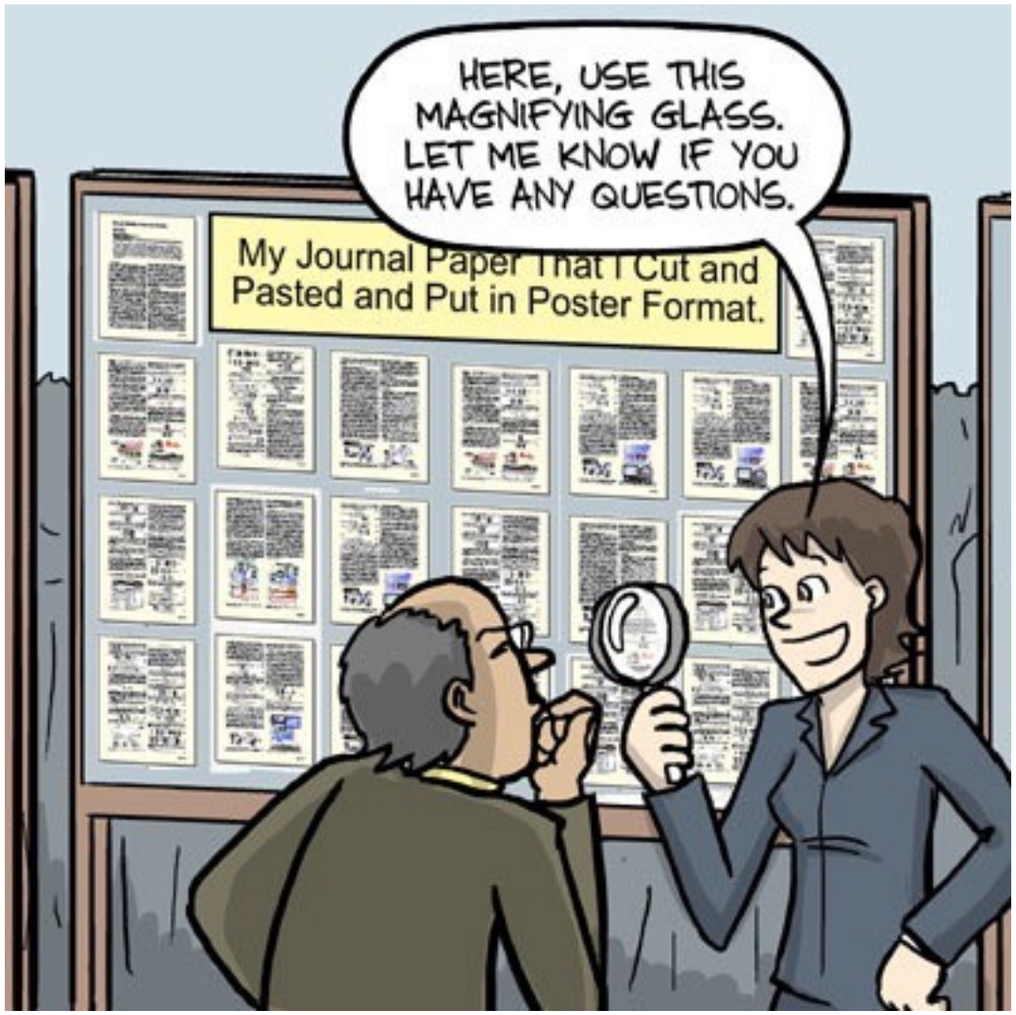
- Don’t bluff
- Don’t fear to give partial answers, or to admit that this is an open issue
- Cite literature/other authors if possible
- Remember: often questions are on further topics

Harsh Questions

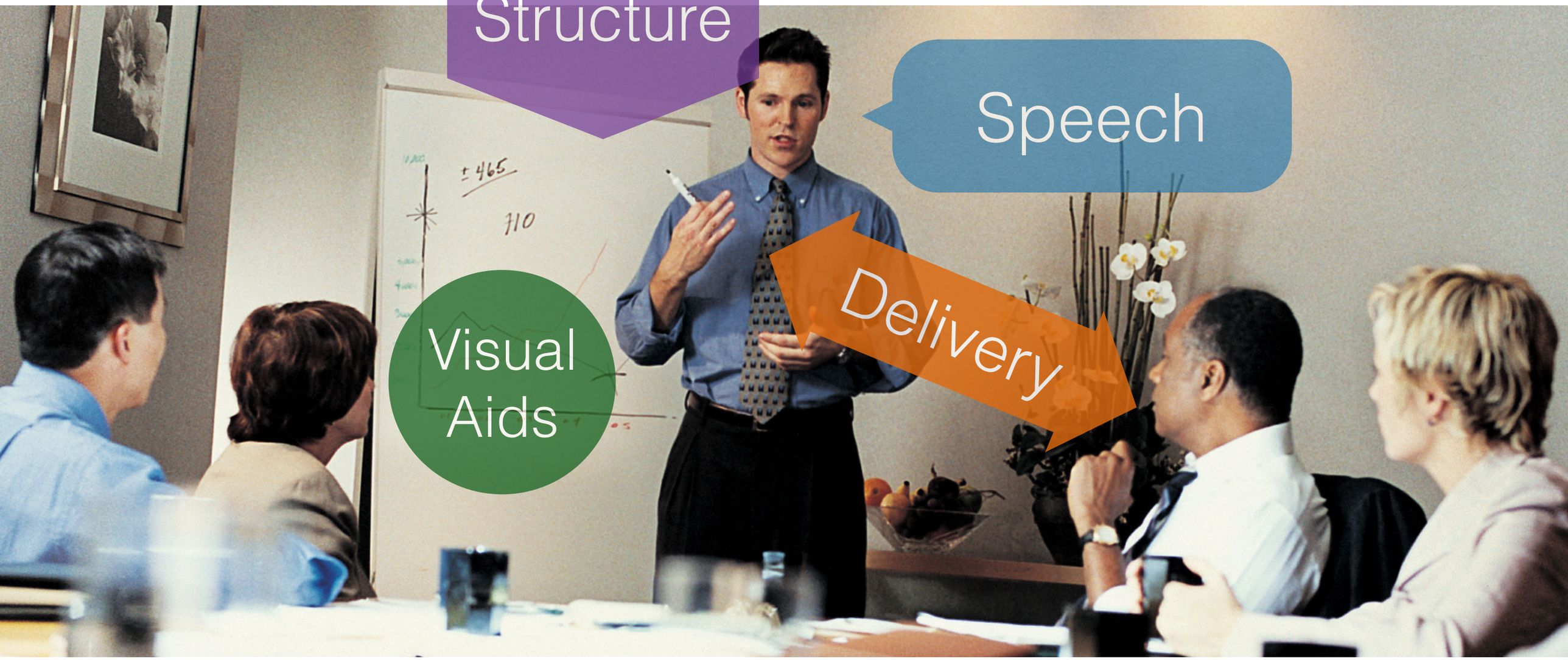
- Answer composedly, with loud voice
- Fight back, counter-challenge your attacker
- Cite literature/other authors is a big plus
- What if the attacker is right?
  - Acknowledge it, trying to save what can be saved
  - Big sign of security: admit that you are wrong

What about Posters?

Avoid this please…



Recap



Conclusion

What you say is as important as what you write

Aim high, be creative, find your way

Let other people inspire you