Some advice on giving a talk

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The point

You have to give a talk:

- scientific (seminar, retreat, or conference);
- interview (post-doc, job);
- other (oral exam / PhD defense, teaching, administrative meeting, lunch / dinner).

Commonalities

You are the speaker.

You have an audience.

You want to transmit an information.

You use a medium:

- your voice;
- your body language;
- a black/white/active board;
- slides (possibly computerized).

NB: Teleconferences are out of scope here.

Specifics

The information is $\boxed{\text{new}}$ to the audience:

- scientific talk;
- teaching;
- administrative meeting.

The information is $\boxed{\text{known}}$ to the audience:

- oral exam.

Information and meta-information

Interview talk: you want to express that

- you are well-rounded, and
- you have potential.

This talk

We focus on giving a scientific talk.

Plan:
- before the talk;
- right before the talk;
- during the talk;
- right after the talk;
- after the talk;

and also:
- receiving a talk.

Before the talk

Plan:
- What to say.
- How to say it.

What to say

Assumption: you have a message.

- A thesis.
- A refutation.
- A theorem or a corollary.
- An idea.
- A report (implementation, benchmarks).
- A tutorial.

How to say it

Use all the help you can round up, eg, slides.

Alternatives include:

- passive demo (film);
- interactive demo (always risky).

What is the point of a slide?

It supports and guides your talk.

Try to cooperate with your slides!

Writing slides

Non-goal:

don't start editing or writing the slides upfront.

Danger:

- atomic and linear view;
- irrelevant formatting concerns.

Active goal: the comic strip

Assemble your future slides into one comic strip:

- it gives an overview (1 to 2 pages);
- you can't write too much on each slide.

Rule of thumbs: at most 1 slide per minute.

Active means: the plan

Planning is not like playing Lego. It reflects your understanding, and thus it evolves with time.

You should not plan your talk in the same order as you carried out your research.

You probably chose a logical plan for the paper; choose a pedagogical plan for the presentation (ie, adapted to the audience, the duration of the talk, etc.).

Basic macroscopic techniques

Have simple and informative slides.

Have a very clear overall plan.

Use a roadmap:

- we were there;
- we are here;
- we go there.

Basic microscopic techniques

Minimal rule of thumbs: one slide, one point.

Each slide should have a title.

1 good drawing is worth 1000 words
(eg, plotted diagram vs. numeric table).

Put the title, location, and date of the talk
on each slide (makes you look prepared).

Advanced techniques

The Gaussian curve of understanding
(some bang for the buck).

Having secret slides (anticipating questions).

Optional techniques

Slide overlays (recommendation: do).

Slides with attachments (for the artist only).

Hidden jokes (recommendation: don't).

Writing the slides

By hand (if your handwriting is readable).

By machine.

Active slides (eg, with a laptop).

Standard mistakes

Small fonts (theorem: the fonts are $\boxed{\text{always}}$ too small).

Invisible color (avoid pale colors, eg, yellow).

Meaning attached to colors (color blindness; black and white copies).

Long and complete sentences (ie, written style).

Overcrowded slides.

Unreadable slides (abysmal handwriting, bleeding ink, scratches, dust, or finger prints).

Slides written at the last moment.

The dynamics of the last moment

(the urgent kills the important)

There seems to be always a rush at the last moment — exploit it well:

- stage your work;
- let it rest (for it improves with time);
- ...at the very least SLEEP ON IT.

Final preparation step

Contact the session chairperson.

Agree about

- the length of the talk, and
- the signals (5’, 1’, stop).

Right before the talk

Do:

- Be comfortably dressed.
- Breathe deeply.

Don’t:

- Drink a carbonated beverage.

During the talk

Plan:

- You (the speaker).
- Handling the slides.
- What can go wrong.

I, speaker

Plan:

- Conducting the talk.
- Message vs. messenger.
- Don’t.

Conducting the talk

- Straighten up.
- Face the audience.
- Smile. Express that you are happy to be here.
- Dare to speak slowly and loudly.

Accept that in the end, by giving a talk,
you express who you are.

How to say it

- Speak slowly and loudly.
- Speak for the others (not for yourself).
- Don't force your voice:
  - lower for males (to inspire confidence);
  - higher for females (to inspire mercy).
- Be balanced: don't let your tone
  - fall down (it sounds sad and depressed);
  - jump up (nobody is strangling you).

Don't be afraid:
you are one among many other speakers,
and nobody will eat you.

The timing of your talk

Challenging slots in the program:

- Right after lunch (especially in France).
- The morning after the evening reception.
- The last session of the conference.

Positive aspect:
only the truly interested people will show up.

Universal solution:

- be interested in your topic, and
- have a tonic voice.

Conducting the talk: the opening

Very first thing: put the front slide.

Second thing: get installed (microphone, etc.).

Third thing: try your voice (see next slide).

Fourth thing: start the talk proper
(eg, with a slide entitled “Introduction” or better “Motivation”).

Trying your voice

At a conference:

- avoid “Can everybody hear me?”;
- “This is joint work with XXX.” is good;
- “This work was carried out at BRICS.” is excellent.

At a seminar:

- thank your host;
- if you are happy to be here, say so.

The talk proper

Plan:

- How.
- What.

The talk proper: how

Use a roadmap (an annotated plan of the talk).

Be intelligible.

Be articulate. Frequently say (if appropriate):

- “There is more detail in the paper.”
- “Copies of the slides are available at the exit.”
- “Are there any questions?”

The talk proper: what

- Think backwards:
  what do you want people to remember from your talk?
- Don’t say everything.
- Simplify.

Rule of thumbs: people can only remember 5 new things from a talk.

Specifics: giving a talk at a conference

Setting: short and limited time (20-25mn).

- You want people to read your paper.
- For those who have read your paper already, you want them to appreciate one specific thing.
- If your paper has several points, you can only make one.

Specifics: giving a talk at a seminar

Setting: longer but limited time (45-60mn).

- Warning: your ASSUMPTIONS, not your contribution, can be questioned.
- The risk increases:
  - for an interview talk; and
  - at top places (MIT, CMU, Bell Labs).
- Recommendations:
  - be well-prepared,
  - be very clear about your goal, and
  - don't hesitate to say "this is not the point", or even "just give me a chance" (and then grab it).

Specifics: giving a talk at a seminar + discussion

Setting: 45-60mn,
followed by 1 or 2 hours of discussion.

Examples:

- ENS Paris (Patrick Cousot);
- Northeastern U. (Mitchell Wand).

Recommendations:

- be very well prepared, and
- be ready both to have fun and to learn new things.

Specifics: giving a talk at a colloquium

Setting: longer time (1-2h).

- Keep the distance.
- Don't get lost.

Conducting the talk: the ending

- Announce the ending (eg, with a slide entitled ”Conclusion”).
- Summarize the background (and thus the significance of your work).
- Summarize the achievements (especially at your PhD defense).
- Open perspectives (future work).

And

- either say ”thank you; are there any questions?”,
- or say ”thank you” and let the chairperson take over.

Message vs. messenger

What is the finality of your talk:

- that the message went through? or
- that it was you who delivered it?

Don’t

overestimate your audience:
you probably have spent more time thinking about your problem than most people here;

underestimate your audience:
there is always the risk that a world specialist of your problem is here.

Don’t

underestimate yourself:
you come from BRICS
and you are well-prepared;

overestimate yourself:
prepare your talk well.

Beware of

starting the talk by cracking a joke:
it is distracting.

(On the other hand, a humorous sentence can wake up the audience.)

Handling slides

Plan:

- Basic techniques.
- Advanced techniques.
- Optional techniques.
- Things to avoid.

Basic techniques

Know in advance how many projectors there will be (2 is better than 1).

Have rehearsed your talk in similar conditions (eg, with 2 projectors).

If you have rehearsed your talk with 1 projector, use 1 projector only (mostly).

Don’t rush.

Don’t talk right when you put a new slide.

Have several “plan” slides, and annotate them in advance.

Advanced techniques

Skipping slides (makes you look in control).

Selective reading of slides.

Annotating slides on the fly (gives an interactive touch).

Selectively erasing slides (mix between permanent and water-based ink).

Optional techniques

Strip-tease of the slide
(recommendation: don't).

Try to avoid

Long visual pauses
(especially on a blank screen).

Slides displayed too quickly.

Correcting slides on the fly.

Making self-comments.

What can go wrong

Plan:

- Personal interference.
- Outside interference.

Personal interference

Being out of breath (stop and breathe; you have time enough for that).

Memory lapses (use the slides; annotate their frame).

Terrible accent (speak slowly; use the slides).

Poor handwriting (use slitex).

Cough, sneeze (not in the microphone!).

Allergy, flu, hangover, etc.
(hang on tight, swap speaker, or cancel talk)

Outside interference

Plan:

- Interruptions.
- Running out of slides.
- Running out of time.

Interruptions

Golden rule: ALWAYS repeat the question.

- for you (to give you time to think);
- for the questioner (to make sure you understand the question);
- for the rest of the audience (who didn't hear the question).

Interruptions at a conference

You can:

- answer on the spot (but don't get carried away);
- say "good point: just wait 2 slides";
- say "good point; I'll come back to it at the end of the talk"; or
- (sledgehammer) use one of your secret slides.

Interruptions at a seminar

3 levels:

- minor (can be used constructively);
- medium (could get you side-tracked); and
- major (risk of takeover).

Minor interruption

What to do:

- Straighten out and carry on.
- Take a simple example and make your point.

You have the time.

Medium interruption

Don't try to escape it.

What to do:

- Take a simple example and make your point here and now.
- Delay the question and carry on until you are in a better position to answer it.

Major interruption

What to do depends on the nature of the interruption:

- about your assumptions;
- about your point.

About your assumptions

- send a very clear warning that this is not the point of your talk; and
- answer in detail.

You don't have the choice.

About your point

Eg, already done by someone else:

- if most of the audience is non-specialist,
  - situate the nature of the interruption; and
  - delay the discussion until after the talk.
- if most of the audience is knowledgeable,
  - make your point clearly, and
  - discuss it out.

Major interruption (cont'd and ended)

And if you have no idea of what the questioner is talking about:

Say honestly that you are not aware of the point, and propose to take it offline.

If that does not work, propose to summarize the rest of your talk now and to discuss the point next. (Courtesy calls for courtesy.)

Running out of slides

This is not a disaster. Short talks are appreciated.

What to do:

- conclude unhurriedly and summarize the main point of the talk (don't repeat the talk, though);
- say "thank you; are there any questions?".

What not to do:

- make a personal comment ("hum, I am running out of time again" or some such; it looks bad).

Running out of time

Golden rule: you should conclude properly.

What to do:

- finish your current point as quickly as possible;
- say "for the rest, you should read the paper; let me jump to the conclusion"; and
- put on the conclusion slide and conclude properly.

Right after the talk

Plan:

- Handling questions.
- And if there are no questions?

Handling questions

The golden rule still applies: ALWAYS repeat the question.

- Technical question: give a technical answer.
- Friendly question: use it to make your point even better.
- Challenging question: be upfront.

Example question #1

Q. Wouldn't it have been simpler to use co-induction?

A, Version 1: The question is: "Wouldn't it have been simpler to use co-induction?"
That's a very good point. No. I tried, and it is actually simpler to use induction.

A, Version 2: The question is: "Wouldn't it have been simpler to use co-induction?"
That's a very good point. Perhaps. That's worth looking into.

Example question #2

Q. Wasn't this known already?

A. The question is: "Wasn't this known already?"
To the best of my knowledge, no, it was not known already.

Example question #3

Q. Isn't your main theorem a corollary of Erdös's theorem?

A. The question is: "Isn't my main theorem a corollary of Erdös's theorem?"
Good question. Which theorem do you have in mind?

Example question #4

Q. Isn't this a particular case of Abstract Interpretation?

A. The question is: "Isn't this a particular case of Abstract Interpretation?"
That's a very good question. Which part do you have in mind: the collecting semantics, the abstract domains, the Galois connection, or the widening?

Example question #5

Q. I don't like your approach at all. (Blah blah blah.)

A. I am sorry. What was your question?

Do

Make sure that all the terms of the question are defined.

When you speak, be careful with idioms when you are not a native speaker.

Don't

Don't use slang.

If the question is "What is X?",
don't say: "X, it's when ..."

At an oral exam, don't say "I knew you would ask this question."

And if there are no questions?

If you have a computer demo, now is a good point to remind the audience of it.

Say "thank you" again, and pack up your slides.

After the talk

Plan:

- At the session break.
- At the next meal.
- After hours.
- After the conference.

At the session break

Make yourself visible, and be ready for more questions.

At the next meal

Don't make lunch or dinner plans.
Be available for discussions.

After hours

Be available for discussions.

After the conference

Promptly acknowledge good receipt of any e-mail.

Always check with your co-authors before answering in earnest.

Receiving a talk

Be prepared:

- Read the proceedings the evening before.
- Go and talk shop with the authors: they came here for that.

Tips for graduate students at a conference

Don't hope too much to find someone important who will listen to you.

But professors love to talk, so go ahead and ask them about their research. (Theorem: even if they are busy, professors will tell you about their research.)

Sanity check

Keep notes about

- who is who,
- who you talked to,
- what you said, and
- what you were told.

As a session chairperson

Meet all the speakers prior to your session.

Agree with them about the signals (5', 1', stop).

Make sure the speaker sees your signals (in the worst case, get up and walk to the side of the screen).

Act as a moderator for the questions.

Be kind and have a question ready in case there are no questions, especially if the speaker is young.

Keep your session on time, but if it started late, be fair to your speakers and make it finish late.

Conclusion

These are just guidelines: suit them to your needs.

In any case,

- do what I said, not what I did in this talk;
- do remember to breathe; and
- do repeat each question.