

Giving an Academic Talk

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This is a sample of my opinions on how to give a talk (using slides or transparencies) in computer science, concisely distilled for my students and students attending Graphics Lunch. Most of these thoughts are based on my going to conferences and seeing the same mistakes repeated by a plurality of speakers. You are welcome to disagree with my opinions, as long as you think each issue through for yourself. The only sin to make a choice without knowing you are making one.

Preparing the talk

Your slides.

- Most talk slides have way too much text. The worst way to make a talk is to fire up Powerpoint and start typing all your ideas in bulleted lists. (Your audience will feel like your talk is in [bullet time](#).) Instead, try to express all your ideas in illustrations. Resort to text where figures fail you. (Exception: almost every slide should have a title.)
- Always use sans-serif fonts. They're easier to see from the back of the room. The purpose of serifs is to soothe your eye when you're reading whole pages of text. I dearly hope your talk doesn't contain enough text to justify serifs. (Exception: math fonts usually have serifs.)
- More than half the talks I see use text that's too small. Your academic colleagues are all near-sighted. Use the biggest font you can that attractively fits on the slide. Try not to go below a 24 point font. Better yet, 30 point text; 40 point titles.
- Simplicity is the best aesthetic. Your audience has very little time to absorb what's on your slide, especially with you nattering on all the time. Some people put accretions like project logos, the talk title, and the conference name on every page. Don't.
- For slides with formulae, one of my favorite tricks is to add arrows and labels pointing to the variables in a formula, reminding the audience what each one means. Few people will remember nomenclature that you defined on a previous slide.
- Unless you are unusually articulate and unfaltering, budget 90-120 seconds per slide.
- A talk of 30 minutes or more needs to be broken into sections, with a title slide or an outline slide demarcating each new section. (For shorter talks, use your judgment.) The goal of the title slides is to alert your audience to transitions and changes of subject, and to tell it in advance what all the individual slides in the section will add up to. (A problem description? An algorithm? A proof? An empirical demonstration of your idea's wonderfulness? An evisceration of all previous work on the topic?)

Your organization. The most common mistake is to spend too much time on technical details, and too little time setting the context. A talk of 30 minutes or less



should be an advertisement for the paper, not a replacement. Your goal is to convince your listeners that they must read your paper. This is a very ambitious goal. Focus on the **big picture** issues.

- **Why** is the problem you are solving worth solving?
- What is the **core difference** between your method and all those that came before? This is really a two-part question (which most speakers screw up by answering only the second part).
 - What does your method **accomplish** that no previous method accomplishes?
 - What algorithmic or methodological idea enables your method to accomplish more?
- What is the **evidence** that your method is better in some circumstances? (And what are those circumstances?)
- What is the **one big idea** that you want people to leave your talk with? If you try to get across five ideas, you will usually impart none. If you choose one main idea and focus on advertising it, you will usually succeed. ``[Give them something to take home.](#)``



These big picture ideas should also be foremost in your mind when you write a paper. They are so important, I'm not going to say anything more about organization. Put these issues first when you put your talk together, and you'll already be one of the best speakers at the conference.

I will let someone *else* say something about organization, though. I like the following quote from [Herman Haverkort's blog](#) enough to excerpt it here.

We got explained two models of giving a talk: the clew model and the onion model.

The clew is a logical, linear argument building up to a conclusion at the end of the talk, like a clew unwinding until you finally come to the core. Miss one step in the talk and you lose the plot and miss the point. And yes indeed, this is exactly what happens when I listen to most conference talks and some lectures. In a three days' conference, I actually follow the first five minutes of one or two dozen talks. That is more or less it. After those five minutes, I get lost. I miss a ``slide`` because I am still thinking about the previous one, get distracted by some random personal associations I had with something the speaker said, or simply doze off because the speaker has a tiring accent.

The onion talk starts with the main message, and adds depth in successive layers around it, always returning to the main message between layers. Since the main message and the main ideas are repeated often, a listener can still follow most of the talk even after dozing off for a minute. Also the talk does not get screwed up near the end when the speaker is running out of time, because by then, the most important things have been said already and the speaker has no reason to hurry.

The final pass. When your slides are done, go through them and examine each slide's title carefully. Do the titles emphasize the right things? I bet you can improve at least half of them. The job of each title is to set the context and tell listeners what your words are trying to accomplish. When audience members wake up mid-talk and try to pay attention again, the first thing they'll do is look at your current slide's title. Make sure it tells them why you're babbling on about grommets right now.

Giving the talk

Practice. It's obvious, but I have to say it. Give a practice talk (even if you're alone) before you give a public one. Better yet, give two or three.

Pointers. I really, truly despise laser pointers, but this is because most people use them badly. Astonishingly badly. Buy an old-fashioned telescoping pointer—they're much easier to follow with the eye.

Of course, there are some venues where the screen is too big for a physical pointer. Rule: if you must use a laser pointer, when you point at something, **hold the pointer steady**. Most people try to circle an object instead of pointing at it. Guess what? Nobody has a clue what you're pointing at! I have sat in conferences and watched one speaker after another after another do this, all oblivious to the fact that their audience has no idea what they're indicating. If you just saw the screen and not the speakers, you'd think it was a breakdancing workshop.



"For God's sake, Edwards. Put the laser pointer away."

(Little-known literary fun fact: in Dante's *Inferno*, the third circle of Hell is the home of those who use the mouse and cursor to point at things.)

Laptops. Before the session, remember to turn off your laptop's screen saver. As well as any application that might try to download the latest version of RealPlayer mid-talk. (This is not a hypothetical occurrence.)

Another way speakers make themselves look goofy is by staring at their laptops' screens while speaking. It's human nature for your audience to follow your eyes, so use human nature to your advantage. When you look at the projection screen, the audience's eyes will follow yours and their attention will be where you want it. When you look at the audience, they will listen to what you say. When you look at your laptop screen, your audience will be distracted; they'll neither hear what you're saying nor see what you want them to look at. Try to place your laptop screen where *you* can't see it.



"O.K., step away from the laptop and hold up your end of the conversation."

Opening. Begin a talk by introducing yourself by name, even if you've just been introduced—unless you've received an unusually long and clear introduction. The session chairs who introduce people at conferences often garble the names or fail to use the microphone. People are finishing off conversations while the chair introduces you. The people in the back of the room probably didn't hear the introduction, even if it sounded clear to you.

If the talk is important enough (e.g. a job talk), have your spiel memorized for the first few slides, so you get a smooth start no matter how flustered and tired you are. (Of course, never memorize a whole talk, as you'd sound terribly stilted.)

Speaking. Good speaking is all about rhythm. The most important part of speaking is to choose a few key points in your talk where you wish to bestow extra emphasis, and then decide how you will verbally emphasize them. I sometimes do this by speaking with a particularly slow and deliberate voice; and I sometimes do this by saying outright, "Here's the most important idea in this talk."

Sometimes silence is particularly articulate. One of the best (and most underused) speaking techniques I know is to leave a long pause right after making a key point. Let it sink in.

It's important to give yourself permission to take as long as you like to think of what to say next. There's no hurry, no need to fill the spaces with sound. The audience is too busy trying to figure out what your slide means to care how long it takes you to think of the next sentence.

You must extinguish the utterance "Uhhhhh" from your vocabulary. Vocalizations like "Ummm" are a half-conscious attempt to pin down the audience with a stream of sound. Remember that they're not going anywhere. When you don't know what to say, be silent and think patiently.

The most common type of bad speaker I see is the one who speaks at a uniform speed, never slowing for emphasis, always seeming rushed, never leaving pauses, one slide running monotonously into the next. Figure out what it takes for you not to be that person.

Closing. Always end your talk by saying "Thank you." It is not pretentious—you are doing the audience a favor. If you do not cue the audience so they know when to applaud, they will be confused and irritated. Like most social rituals, the thanks-applause sequence comforts everyone. Do not ask for questions until you complete it.

That's all! Most everything else, especially aesthetics, is learned through practice and feedback. I could go on, but by trying to teach more I'd teach less. Same goes for you.



"So, does anyone in the group feel like responding to what Richard has just shared with us?"

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