Research/Conference Talks

The key thing to keep in mind is that the audience has a fixed (small) number of cycles they are prepared to devote to your talk. Your goal should be to never exceed those cycles, because then the audience will shut off and not listen to the rest. Furthermore, audiences are conservative: if there is any hint that spending the remaining cycles on your talk will be a waste, they will shut off long before the cycles are consumed.

According to [an anecdote published in 1918](#), Woodrow Wilson was asked about the amount of time he spent preparing speeches. "That depends on the length of the speech," answered the President. "If it is a ten-minute speech it takes me all of two weeks to prepare it; if it is a half-hour speech it takes me a week; if I can talk as long as I want to it requires no preparation at all. I am ready now."

Structure

Just like a paper, a talk should have a hierarchical structure to simplify the conveyance of the intended information.

If X attends your talk, and a day later X walks into an elevator and a colleagues asks X what your talk was about, then X should be able to state that in 1-2 sentences -- that is the take-away of your talk. At the very top of your talk hierarchy should be this key take-away, and the rest of your talk should be built in such away that this take-away remains in your audience's mind forever. So, before even starting to think about your talk, formulate the key take-away in 1-2 sentences. Fortunately this provides your slide #2, immediately after the title slide. You should repeat the slide as the conclusion slide (which is the one that stays up during Q&A), to maximize the chances of it entering your audience's brain.

For each slide, define the purpose of the slide and state it in one sentence (e.g., "Our tool is easy to use by humans"). Ask yourself how does this statement support the key take-away, and how does it fit in the story of your talk. If you're satisfied with it, then write up the slide in a way that best supports this statement. Review the slide and ask yourself whether it indeed supports the statement. If yes, then turn the statement into a title (e.g., "Easy to use"). Double-check that the slide, when read on its own without listening to your speech, is consistent, and that the bullets support the title. You can think of each slide as a paragraph in a paper, the title as the topic sentence, and the bullets as the other sentences of the paragraph.

Besides drilling the key take-away into your audience's brain, the second purpose of a conference talk is to make them go read the paper.

Content

- The introductory part should...
  - let people in your area know that they should listen (as opposed to tune out), and
  - persuade people outside the area that this is important stuff to listen to (as opposed to tune out), so define the problem in a way that makes it exciting to them
- It is important for a talk to have a good intro that sets the context of the talk and motivates it. What "good" means depends on the type of talk...
  - In a conference talk, use the intro to define the problem
  - In a keynote talk, use the intro to rally people behind the problem you're solving
  - In a job talk, emphasize why the problem is the most important thing to work on
- Spend no more than ~20% of your time on intro
  - In a conference talk, get to the meat of what you do within max. 5 minutes
- Start your evaluation section with your best result first. It is unlikely that you'll be able to fit all your results in the talk.

Form

- Don't use slides as text repositories, use them as a way to augment your speech; use well thought-out visualizations (see this example)
  - More generally, avoid putting extraneous elements on slides. For every little feature (whether it's a graphic in the slide template, or a bullet, or a chart) ask yourself what purpose it serves, and if you don't have a good answer, take it off the slide.
- Aim for consistency throughout the slides, in order to reduce the cognitive burden on the audience. If you use red to suggest bad things and blue to suggest good things, do so throughout the talk, don't switch to green for "good", or even worse swap red with blue.
- Avoid unintended anomalies. Any time there is something unexpected (like a mis-alignment of text, a change of font, etc.), the audience will interpret it as something with a meaning. If the anomaly was an oversight, then you've just consumed some of the audience's cycles for nothing.
- Quality control is paramount. Mistakes are much easier to notice when projected on a big screen than on your laptop or desktop, so the audience has an advantage over you in their ability to spot typos, grammar mistakes, spelling problems, graphs that are not consistent with each other, etc.
- The title slide should include title of the work, authors, and institution (along with the institution logo)

Delivery

- Mandatory first step: watch this video
- Speak clearly (adopt the diction and pace of a good news anchor).
- When giving a talk, you need to over-act a little bit relative to your normal demeanor.
- When presenting a graph/chart/etc. always start by describing the x-axis and the y-axis, and only afterward describe the curve(s). After presenting the data, always offer the audience an interpretation of the data, don't just move on, letting them wonder why they were shown that data.

Q & A

- Mandatory first step: watch this video
- Be sure you understand what was asked. When you're nervous, it is more likely to misunderstand what you're

asked. If you answer perfectly a question that is (even slightly) different from what the questionner asked, then you have wasted your time and that of the audience. Furthermore, the audience is not nervous, so they probably understood the question and simply believe you are trying to wiggle your way out of answering the real question. Thus, when you're asked the question, if you have any doubt that you got it right, restate it in your own words and get the questionner's confirmation that this is indeed what (s)he is asking. If you cannot converge quickly onto the true question (either due to not hearing the questionner well, not understanding his/her accent, or simply because (s)he is from a different planet), then ask to take it offline.

- Provide an answer within the first 15 seconds of your response. It may be an imprecise answer, in which case you can further elaborate. But the questionner wants a verdict asap, and you should deliver it (not like this counter-example). It is amazing for how long people can talk instead of simply saying "yes."

Practice

- Practice makes master. Depending on your level of talent, you will have to deliver your talk in practice mode somewhere between 20 - 50 times before it's ready for external consumption.
- Seeing yourself is often the best feedback you can get. Record yourself (both video and audio) and then watch, pretending you are the audience. Identify the things you do well (and leverage them) and the ones you do poorly (and fix them).

Good Advice from Others

- Excellent short video on how to put together a good TED talk (almost all the advice applies to conference/keynote talks as well)
- Patrick Winston says: *Start with an empowerment promise, something everyone will be able to do at the end that they are not able to do at the beginning. Finish with a reminder that you have delivered on your promise. Avoid thanking the audience, because that suggests insecurity, but exit with a joke, if you can, because that way people will think they had fun the entire time."*
    - Watch this recording of Patrick's talk about how to start a talk, how to pace yourself, use the blackboard and overheads, style, how to handle questions, etc..
- *"How to Give a Good Research Talk"*, by Simon Peyton Jones (MSR) [paper] [presentation]
- Yale Patt's 10 Commandments of Teaching
- Mark Hill's advice (includes Patterson's Ten Commandments)