How to give an economic theory talk

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This document contains advice on how to give an economic theory talk. It is mainly intended for graduate students.

The advice consists of rules-of-thumb; I follow them except when there is a strong reason to make an exception. Some rules are common knowledge among experienced theorists, but some are not. Some of it is idiosyncratic advice, but at least it works for me.

1 The rules

1. **Remember the curse of knowledge.** You have been thinking about this topic for weeks (or months, or years). Your audience has been thinking about this topic for minutes. Many things that seem obvious to you are not obvious to your audience. Take time to explain new concepts or unusual steps, even those that seem trivial in hindsight.

   (a) The revelation principle was trivial only in hindsight.

   (b) Your target audience is the second-year grad student in your field, not the Nobel laureate in the corner. In practice, if you aim your explanation at the second-year grad student, you will calibrate about right for faculty.

2. **Teaching, not advocacy.** Your job as a presenter is to help your audience understand the motivation, the model, and the results, discussing candidly both strengths and limitations. You are not a partisan advocate, seeking to argue for the model/results and defend them against attacks. Think of yourself like an astronomer describing a new exoplanet, not a real estate agent describing a house. If you act like you are selling something, the audience will treat you with suspicion.

   (a) The model/results are yours only in the sense that you found them, not in the sense that you own them.

   (b) Strive to be the most informative person in the room about the limitations of the model and the results.

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3. **Get to the model quickly.** If you take a long time with motivation or vague summaries, your audience will develop strong opinions about what the model *should* look like, and will be disappointed when it is different. One senior theorist (whose opinion I respect) gets visibly agitated when the model is long delayed. This is a public service.

   (a) Do not give the literature review before the model. It is inefficient to say all the things you did not do, before saying what you did.

   (b) In a 20-minute talk, take no more than 3 minutes to get to the model. (Other standard ratios: 45:7, 75:10.)

4. **Slides enhance the voice, they don't replace it.** Slides serve just three purposes: First, they are notes *for the audience*, to help them recall recent material (via short bullet points). Second, they contain material that is better conveyed visually than verbally (graphs, tables, game trees, equations). Third, they contain material that must be stated exactly to avoid misunderstanding (definitions, theorems).

   (a) Plan in advance what you will say at each slide. (Need not be verbatim.)

   (b) Less than half of what you plan to say should be on the slides.

   (c) Slides are not a teleprompter. Do not put whole paragraphs on slides.

   (d) Sentences in slides should be short, grammatically simple, and in large fonts. The font size is just right for the seminar room only if it looks too large on your computer.

5. **Work hard on graphic design.**

   (a) Your audience will not read slides that are over-filled or difficult to parse.

   (b) There is some evidence that the credibility of statements is affected by how easy they are to visually process. Lab subjects are more likely to believe that statements are true when they are displayed with a high-contrast background compared to a low-contrast background (Reber and Schwarz, 1999), and are more likely to remember statements in large fonts (Ball et al., 2014).

   (c) Use color to draw the eye and convey information. For instance, you could mark new definitions in blue and highlight parts of mathematical expressions in red. Choose a color scheme and stick to it.

   (d) Be aware of color blindness - *e.g.* crucial contrasts should not be red/green.

6. **Concrete examples before abstract general statements.** You may feel that you can skip examples because the theorem entails all the examples. This is a false economy.

   (a) Most human beings (even most theorists) understand better by seeing a simple example first.

(b) Leading with an example gives the audience a way to check their understanding of the general statement. For instance, all the assumptions in the theorem should hold for the example, and if one of them seems not to hold, the listener can infer that they have misunderstood the assumption. (In computer programming this is called a "unit test", to check that the code works on the smallest testable unit.)

7. **Your audience can remember (at most) seven distinct pieces of notation.** Their memory is a scarce resource. Do not waste it.

   (a) Delete notation that you use fewer than three times.

   (b) If a piece of notation has not appeared for several slides, remind your audience what it is. *e.g.* replace "if λ is close enough to 0" with "if the arrival rate λ is close enough to 0".

8. **Optimal paper notation $\neq$ optimal talk notation.**

   (a) Notation in talks has to be aurally distinct in addition to visually distinct. It may be elegant to use a, A, and $\mathcal{A}$ in your paper. Now imagine having all three on your slide, and having to say 'little a', 'big A', and 'script $\mathcal{A}$'.

   (b) You are allowed to use colors to draw attention in talks, which changes the readability of certain equations. Compare:

$$f_t(x', y', z) - f_t(x, y', z) \geq f_t(x', y, z) - f_t(x, y, z)$$

$$f_t(x', y', z) - f_t(x, y', z) \geq f_t(x', y, z) - f_t(x, y, z)$$

9. **All equations on slides are meant to be read by the audience.** Pause and give the audience time to digest them. This is longer than you think (remember the curse of knowledge). Maybe even walk them through the equation, pointing out key subtleties.

   (a) If you ever say, "don't look at the equation, what really matters is…", then you should have deleted that equation.

   (b) Never put up equations to 'show that the proof was difficult'. Bad notation makes any proof look difficult, so this lacks the single-crossing property. Your audience already knows you can do algebra, so a long derivation is not a signal of competence.

10. **You will make some imprecise claims and some precise claims. It should be clear to your audience which is which.**

    (a) "Theorem", "proposition", and "lemma" mark only statements that are precise, true, and proved. If you pool other statements with these, you damage the audience's belief in your theorems.

    (b) A deliberately imprecise statement of a theorem may be labeled "informal result".

(c) Conjectures should be labeled as such.

(d) If a result uses a condition that has not yet been defined, then use quotation marks. "For every 'nice' distribution there exists a perfect Bayesian equilibrium..." Tell your audience whether you will shortly define 'nice', or whether they should look in the working paper.

11. **Beamer makes equations easy and graphic design hard. Powerpoint makes graphic design easy and equations hard.**

    (a) If you have enough equations that Beamer is easier to use, you have too many equations.

    (b) Yes, LaTeX math is beautiful. You can drop LaTeX equations into Powerpoint using tools such as LaTeXiT.

12. **Present a few things well, rather than many things badly.**

    (a) As a rule of thumb, each slide takes 90 seconds. (Not counting transitions.)

    (b) Cut content rather than rush. Rushed content is not remembered anyway.

    (c) Nobody will be unhappy if your talk ends slightly early.

References

Ball, B. H., K. N. Klein, and G. A. Brewer (2014): "Processing fluency mediates the influence of perceptual information on monitoring learning of educationally relevant materials." *Journal of Experimental Psychology: Applied*, 20, 336.

Reber, R. and N. Schwarz (1999): "Effects of perceptual fluency on judgments of truth," *Consciousness and cognition*, 8, 338–342.