

# Communicating Complex Technical Concepts

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# Complex Subjects

- ▶ This is a technical economics conference
- ▶ We want to not only talk to each other about these topics, but also to audiences at large
- ▶ Things that general audiences often find confusing include:
  - ▶ Technology
  - ▶ Economics
  - ▶ Hmm

# Complex Subjects

- ▶ A key question is:
  - ▶ How can we present and explain our work in a way that a less-technical audience can understand it?
- ▶ This is key for engaging with the general public or even most stakeholders

# Some Key Strategies

1. Make a need-to-know list
2. Assess the audience's background
3. Give everything a brain
4. Revise excessively

# 1. Make a Need-to-Know List

- ▶ A general audience rarely cares as much about your work as you do
- ▶ Technical work is often boring and confusing - they're listening to you because you can answer a question they want to know the answer to!
- ▶ So *what is it they want from you?*
- ▶ Give them *that* and *as little else as possible*

# Not JUST the Results, but Close

- ▶ The simplest end of the spectrum you could go to is to *only present the results/recommendations*, without explaining how you came to those conclusions
- ▶ For very non-technical audiences for whom you will be seen as an authority, this works
- ▶ For other groups, you want to establish not necessarily *what you did* in full technical detail, but you should get at *why you did it*, which humanizes your approach and makes it more believable
- ▶ Don't we need to be specific about what we did? Nope! Most of the time, being specific just means being more confusing.
- ▶ Rule of thumb: if your audience wouldn't be able to judge whether a choice you made was the right technical choice, then they don't need to know it

# An Example from Causal Inference

- ▶ We did an analysis on the effectiveness of this year's Christmas promotions. Did discounts on certain products actually increase their sales?
- ▶ **No:** To account for confounding bias, we used linear regression to control for seasonal patterns.
- ▶ **Better:** In the raw data we saw that sales went up, but we don't want to accidentally give the discounts credit for what would have just gone up anyway because of Christmas. So we used previous years to figure out how much of a Christmas bump we usually get and took that part out.

## 2. Assess the Audience's Background

- ▶ Different audiences do better with different explanations
- ▶ Audiences differ not just in their technical skill but also in their baseline assumptions - a non-technical audience who has worked in the industry you're studying is very different than a non-technical audience who hasn't

# Data Analysis is About the Real World

## Different Audiences Know Different Worlds

- ▶ For all kinds of predictive or inferential analysis, we need to make assumptions about the real world from which our data came
- ▶ Assuming something wrong because the audience won't notice isn't a great plan
- ▶ But playing down an assumption you're pretty sure aligns with audience beliefs *but only in a confusing way that's hard to explain* isn't a terrible idea
- ▶ And anticipate their real-world knowledge! Audiences are *fantastic* at coming up with anecdotes or theories that don't align with your results based on their understanding of the context. If you can anticipate and pre-address those concerns, that's great

# Anticipate Errors and Guide Attention

- ▶ How will your audience's starting place affect how they take in what you're showing them?
- ▶ Where are they going to need correction or more info?
- ▶ Try *looking at your work and trying to get confused by it*
- ▶ Hold the reader's hand - they shouldn't have to guess your intention. Guide their attention towards whatever will get them to the intended conclusion

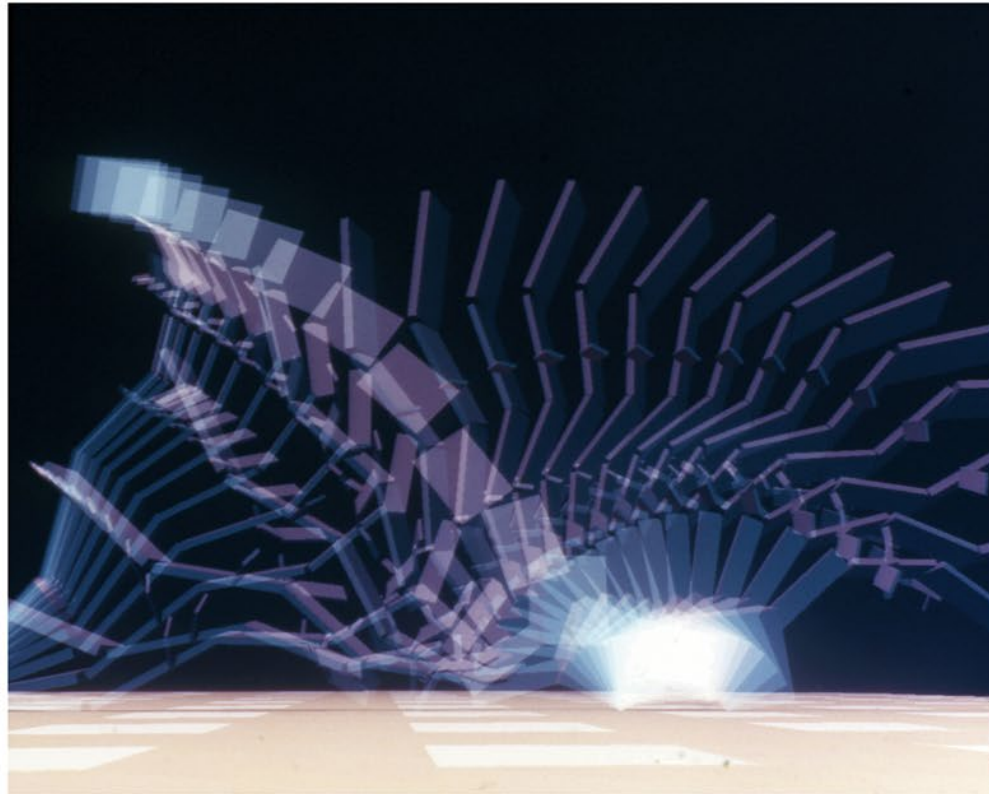
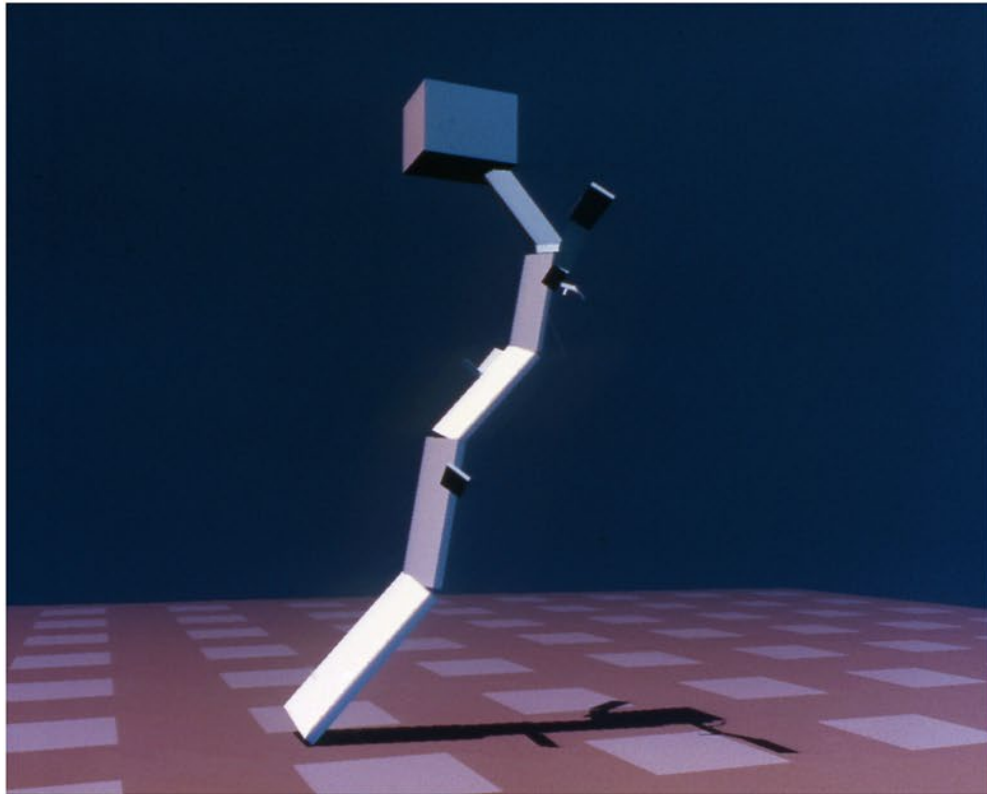
# An Example from *My Mom's Car*



### 3. Give Everything a Brain

- ▶ As before, it's not important *how* you did it, but *why*
- ▶ A helpful tactic is to make your data, or your model, or your technical thing into a *person with wants and desires*. These are easier to understand
- ▶ If an audience can understand *what your technical object wants to do* then they can understand better *what it does* and *why you did what you did*

# An Example from AI



## 4. Revise Excessively

- ▶ Revising your work in general is always ideal if you want it to be good
- ▶ But it's especially important for presenting technical work to a general audience
- ▶ You're too close to this stuff, you can't see the parts that are difficult
- ▶ Get less-technical people to view your explanation and not *tell you what they think of it*, but rather *tell you what they think it says*

# Conclusion

1. Make a need-to-know list
  2. Assess the audience's background
  3. Give everything a brain
  4. Revise excessively
- For additional tips, *watch YouTube*. See how people who explain technical topics on that site, especially the popular ones, break into the complexity.