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Can TV Make You a Better Stats Communicator?

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When watching TV is not wasted time: gleaning presentation tips from the big screen

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I don't know about you, but the dark, cold winter finds me cozying up under a blanket rewatching many of my old favorite shows. Watching everything unfold the second time around has made me more aware of decisions made by the show writers to foreshadow and set up particular plot lines. I have been paying particular attention to the pilot episode of each series. This first episode needs to grab the attention of the viewer and make them want to spend more time watching the show. The episode has to orient the viewer quickly to the setting and premise, introducing the characters and their relationships with one another and the potential conflicts that will arise.

The writers do not have a lot of time to make this all happen: approximately 20 or 40 minutes, depending on the show format. This task reminds me of a statistics talk - whether it's a presentation for a class or at a conference, or as part of an interview for a job. You have to convince an audience who has just met you that they should invest in you. You need to make them want to keep watching what you are up to. We have all been at a talk that was, well…, not so inspiring; how can we avoid those pitfalls?

If we first break down a pilot episode into its essential elements, structure, and pacing, and find analogies between these components and the statistical components we want to communicate to our own audience, we can create a roadmap for an engaging talk. Instead of reading to write, we are watching to present.

The first thing we see in a pilot episode is the "cold open" where we are plunged directly into a scene and left to get oriented from the context clues presented. Consider the very beginning of *The Big Bang Theory*, a hit show in the late aughts and throughout the 2010s (we want some characters who can appreciate a statistic after all). We are dropped into a fast-paced discussion between two stereotypically dressed male "nerds", Leonard and Sheldon, about photons. As they walk into an office, their smartypants-ness continues as they solve the rest of the receptionist's crossword puzzle. Within a few minutes Leonard and Sheldon are back at their apartment where they discover a new neighbor, an attractive blonde woman. The analogous start to a talk would be jumping right in with a concrete example that exemplifies the big picture of the types of problems that you work on. Part of this talk opening involves making sure your audience understands the setting of your data as well. For example, if you work in public health, you might start with a description of the health concern and the potential treatment that your study is determining the effectiveness of while showing the distribution of a particular symptom or outcome. As you talk about the big picture, the audience will start to wonder what kind of statistical questions are relevant to this context question that motivates your work. This would be a good time to start introducing your "characters".

As *The Big Bang Theory* opening scene continues, personality traits of the initial characters are revealed, and more characters appear. We learn that Sheldon is very particular about where he sits in the apartment and that there is a friendly rivalry between him and Leonard about their work. We meet their friends Raj, who cannot talk to women, and Howard, who is plenty friendly with women as he shows off the many languages he knows. We learn that Penny moved from the midwest and is an aspiring actress and playwright who is waitressing in the meantime. She just broke up with her long-term boyfriend because he cheated on her. The “characters” in your talk will be your statistical methods. They have strengths and weaknesses just like characters in a television show. Maybe a particular statistical model is known to be robust to skewness in the data but not model mis-specification. Or perhaps there are two methods whose strengths and weaknesses complement one another that you are going to combine in some way; that sounds like a statistical method “couple” waiting to happen!

This all may sound a bit corny, but the goal of a presentation is not necessarily to get in the weeds. Yes, you are often talking to a room of your peers, but they are not necessarily specialists in your sub-field. Talks are also often used to assess your ability to explain complicated topics to a more general audience (e.g. for teaching purposes). The more you can make your work relatable and accessible to your audience, the more engaging your story will be.

Now that we know what the characters are like, we are ready to learn about the essential tension or problem they will navigate throughout the series. In *The Big Bang Theory* we learn that Sheldon is very particular, and Leonard’s attempt to bring a new person into their friend group disrupts Sheldon’s fully optimized and routine lifestyle. We also learn that the group is aware of a level of awkwardness that they present to the world, which is in tension with them trying to befriend Penny, someone “out of their league”. Building on the strengths and weaknesses of your statistical characters, you will now want to explain to your audience what makes your problem hard. One approach works better but takes longer to compute: a race against time conflict. We need an approach that is comparable to a proprietary method: a spy-ish conflict. We need an approach that can handle lackluster data because the data-collection process is expensive: a rags to riches conflict. Again, lean into that corniness as you plan the structure of your talk. You can be less literal in the actual delivery of the talk once you have a compelling story in your mind to guide you.

In the middle of the pilot episode we bounce back and forth across subsets of the friend group and see more character development as we watch the characters in action. Sheldon and Leonard try to retrieve a television from Penny’s ex-boyfriend (bullying ensues) while Raj and Howard keep Penny company back at the apartment (it does not seem like a match). The middle of your talk will include a similar mix of methodological development and presentation of results that reveals some highs and lows of your research process. You might show your first approach and show why it did not work to motivate your next pivot. You might highlight a particular success story where your approach helped a stakeholder. A compelling talk will tell both the story of your research and the story of you as a researcher.

The last few minutes of the pilot episode leave the viewers with a sense of hope. Penny feels bad about her ex-boyfriend’s treatment of Leonard and Sheldon and hugs them. This re-sparks Leonard’s crush on her after initially being deterred by his visit with her ex-boyfriend. The show ends with the whole group in the car heading to dinner. Everyone's personality traits are in full force, making Leonard seem the most normal of the bunch. Maybe there is hope for him yet. You want your audience to leave with a similar glimmer of hope. What is next for you? What do you hope to work on in the future, ideally at their institution? You want your audience to leave knowing that you have a plan for the rest of the series that is your research agenda.

Now that we have seen the major elements and overall structure of a pilot television episode and mapped out analogies to the content we want to cover in a talk, we need to have a strategy for telling that story in a given time frame. Determining the pace of the talk requires breaking down the content into "beats" or stand-alone sub-units of the story. For example, Figure 1 outlines the timeline of the pilot episode of *The Big Bang Theory* and shows some key moments. The show lasts 22 minutes and is roughly broken into four, five minute segments and a short ending scene. At a high level we see that the first ten minutes is crucially focused on getting the viewer up to speed with the characters and premise, the second ten minutes shows some action that reinforces the character personalities and initial tension, and the ending is short but packs an emotional punch. Within those main time segments are shorter segments that have a more targeted role in the overall story. For example, Leonard's attempt to relate to Penny's feelings about her break up by making a comparison to the paradox of light being both a particle and a wave shows his burgeoning role as bridge between nerd world and Penny's world. A beat might translate to a single slide or short series of slides that work together to move the story along. A commonly stated rule of thumb is that you have about one minute per slide. This implies that each slide is not packed full of content though; less is more. Consider what figures and text are essential and what might be unnecessary padding by lining up groups of slides such that they are proportional to the corresponding timing and roles in the television pilot map. Do you have too much setup and not enough character development? Do you run out of time before your hopeful moment? Prune, prune, prune! For more guidance on breaking a story into beats, check out the screenwriting advice book "Save the Cat!" by Blake Snyder.

Introduction to Characters and Setting	Tension Set-Up	Character Development	Additional Tension Paired With Some Progress	A Hopeful Moment
- We meet Leonard and Sheldon “in the wild” as they show off their knowledge and awkwardness. - Cut to the stairwell in an apartment complex: Leonard and Sheldon meet their new neighbor, Penny.	- Leonard wants to invite Penny over for lunch while Sheldon does not understand why. - Penny rubs Sheldon the wrong way by taking his seat and being the astrology type. - Leonard’s crush on Penny becomes more and more obvious.	- Penny reveals that she is a waitress at the Cheesecake Factory, writing a play about an aspiring actress, and just broke up with her boyfriend. - Leonard and Sheldon’s friends, Raj and Howard, visit the apartment and are awed to find Penny there.	- Leonard and Sheldon try to do a favor for Penny (Sheldon reluctantly). - Leonard and Sheldon are bested by Penny’s ex boyfriend in a way that emphasizes the jock/nerd dynamic. - Penny is left with Raj and Howard to entertain her. - Leonard gives up hope for Penny.	- Penny hugs the duo, upset about the ex-boyfriend incident. - Leonard’s crush revives. - The whole group travels to dinner together, everyone’s personality on display one last time.

Figure 1

Feeling inspired? Figure 2 provides a prompt to help you go through this mapping process yourself with a favorite television show. Want to go beyond television series or job talks? We can make other analogies between the screen and academic oral presentations. A “tight set” of comedy can teach us a lot about giving a lightning talk: how to make strong transitions to maximize the punchiness in a short time frame. Adapt Figure 2’s prompt for your favorite stand-up set. A movie trailer can teach us about giving a conference talk: how to leave the listener wanting to “watch the movie” or in our case read your paper or talk to you further. For example, Phi Do provides resources for data journalists who want to learn from screenwriters, including decisions about what to reveal and what to leave out in a scene.

Exercise: Rewatch a pilot episode from one of your favorite shows. This would ideally be a series you have already seen the whole way through (or at least so far) so you can use your knowledge of the progression of the show to evaluate the pilot's setup approach.

- How is each character introduced?
- What does each character do or say that shows you their personality?
- Is there a main tension set-up? Perhaps a will-they won't-they romance or a good v. evil battle?
- Pay attention to the passage of time. What do you learn in the first five minutes? The first ten?

Now using the analogies between television components and statistical components, map out a talk in the same structure. You may need to scale the timing up or down, but try to keep the proportions between beats constant.

Figure 2

You do not have to be a world-renowned actor to give an engaging talk, but you can learn from scriptwriters about what elements, structure, and pacing make for a good story. Break a leg!

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