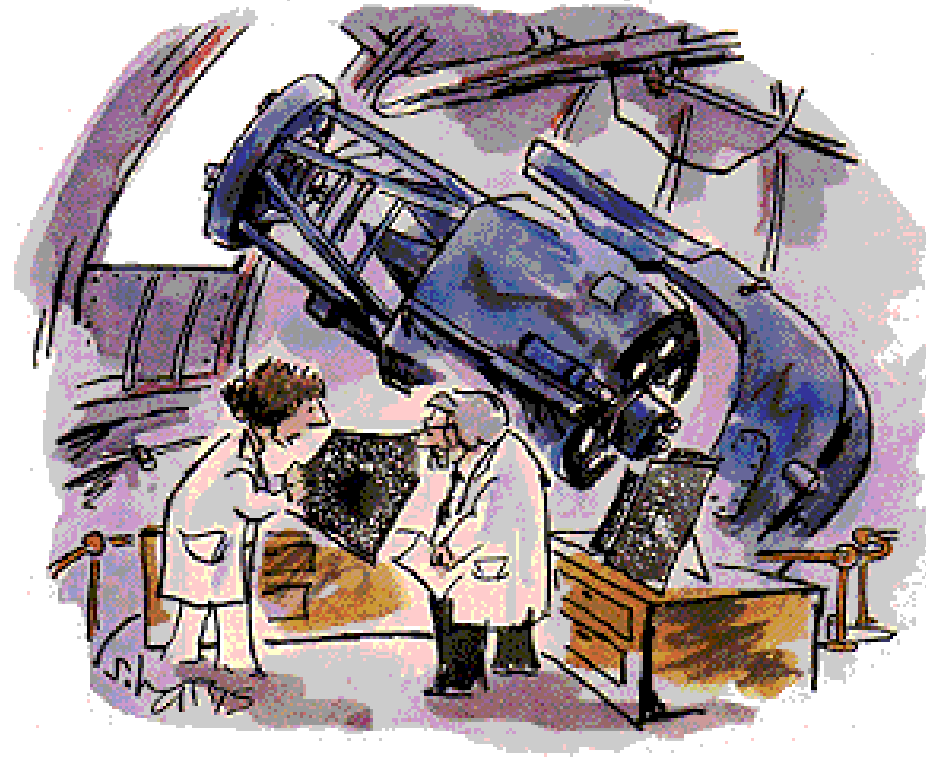


Elements of Persuasion

RENATO MAZZEI



"It's black, and it looks like a hole.
I'd say it's a black hole."

Persuasion in Science

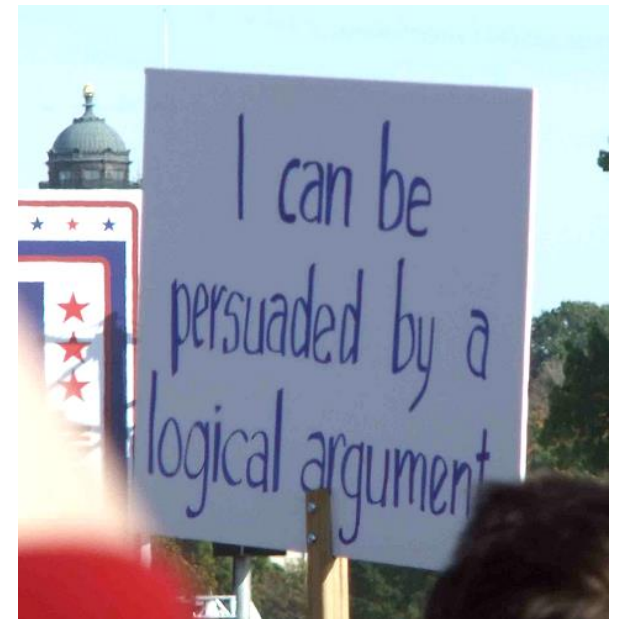
1. Writing proposals “Here’s why you should give me money”
2. Interpreting and delivering scientific results “Here’s why my science is good”
3. Communicating with group members “Here’s why we should pursue my idea”
4. Convincing people to like you “ ... ”

What is Persuasion?

- “Various deliberate methods that people use to change other people’s attitudes and thoughts...as a means of convincing the listener of the correctness or desirability of the ideas or goods involved”

(Abbreviated from *The Psychology Glossary*)

Tools to make someone believe something they otherwise would not



1. Clear motivation

- Have a lucid idea of what you want

Rolf Dobelli: *“Clear thoughts become clear statements, whereas ambiguous ideas transform into vacant ramblings.”*

- Formulate targeted goals to address

- It may be useful to compartmentalize these goals into sub-tasks that can be approached individually

$$f(a, b, c) = A(a)B(b)C(c)$$

2. Believe in yourself!

- The first person to persuade is you!
- Trust your competence and the value of your work
- In doing so, you will be able to communicate with confidence and enthusiasm
 - *Petty et. al:* “...to the extent that thought confidence was relatively high, persuasion depended on the valence of thoughts”
- Listeners respond to self-assurance
 - *Cramer et. al:* Expert witness credibility is correlated with confidence

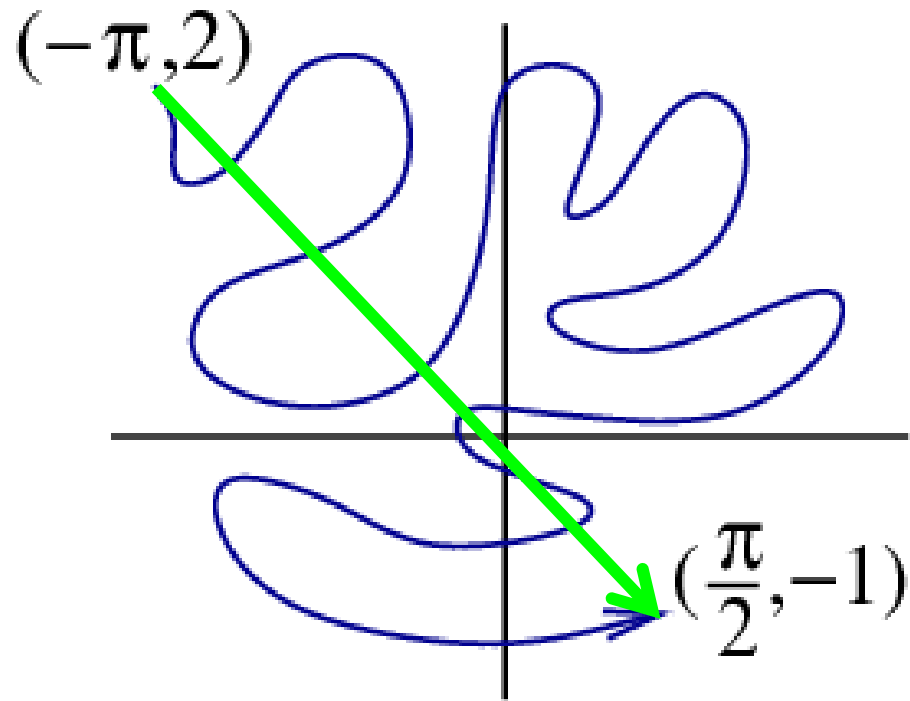
3. Address the audience appropriately

- Different groups have different levels of familiarity with your topic
- For the audience to get anything out of your presentation, information must be tailored appropriately
- People generally like and respond positively to things they can understand



3. Address the audience appropriately

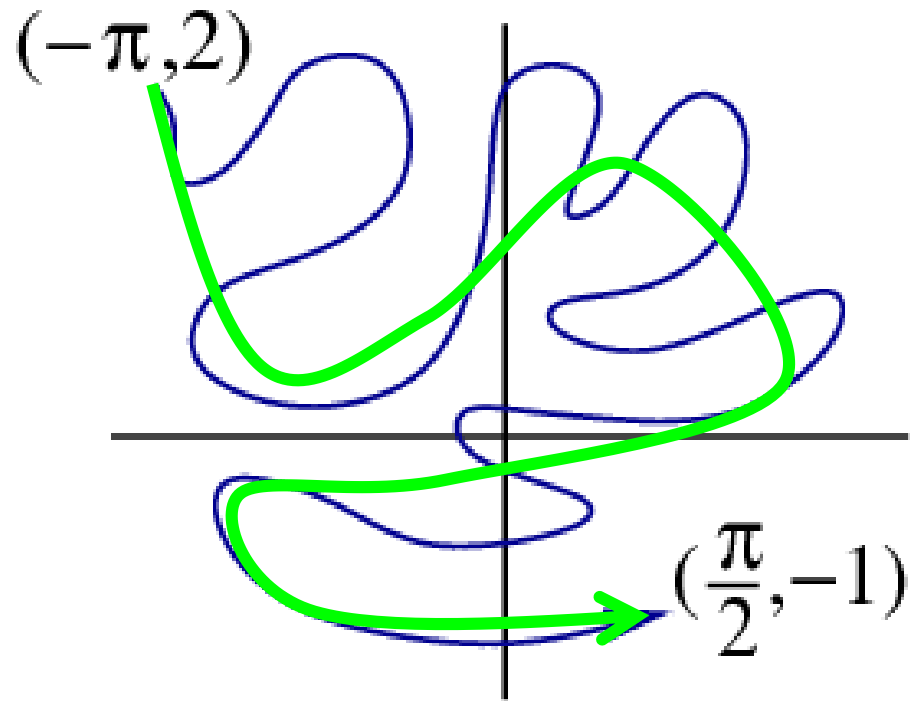
Public Talk



- Tell the audience where you started and where you went
- Talk about the general direction (i.e. approach) you took to get there

3. Address the audience appropriately

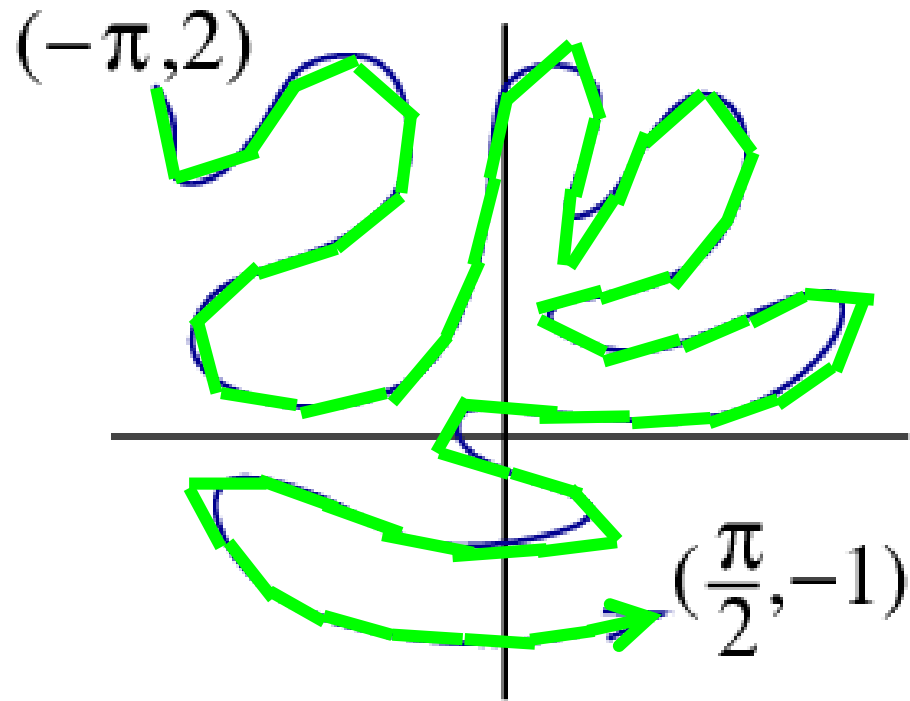
Colloquium



- Generally describe work in a way that any astronomer can understand, but sprinkled with some additional detail aimed at people in the field

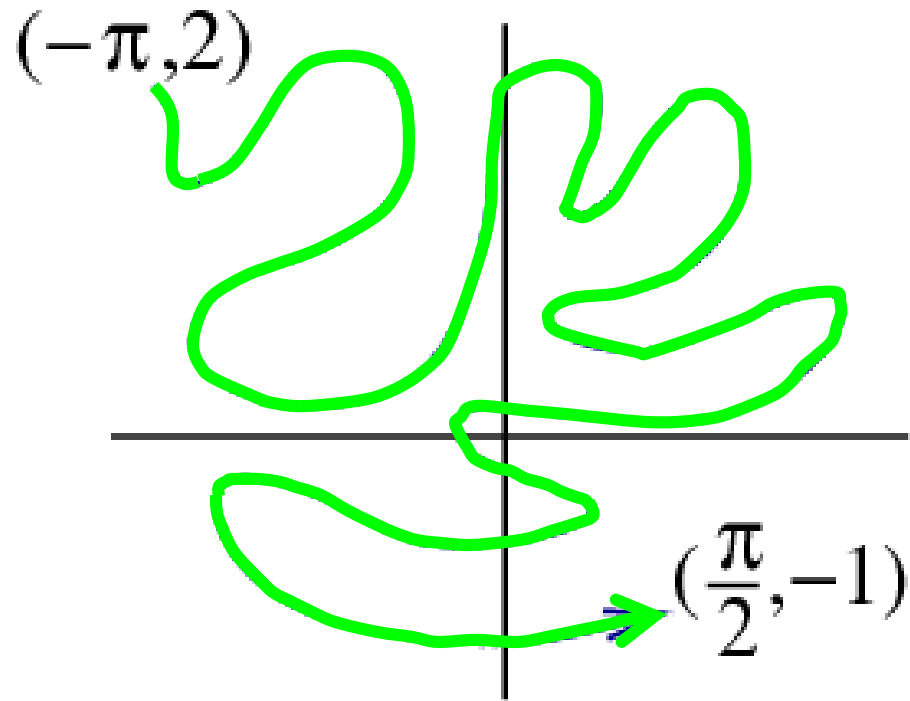
3. Address the audience appropriately

Paper



- Integration using Newton's method
- Leave out some technical details, but give robust description of procedure and why your conclusions make sense

3. Address the audience appropriately



Talking to experts in field

- RK4 with adaptive step size

4. Understand the audience

- The points you are trying to communicate should be contextualized in terms of the background and goals of the audience
 - Use their nomenclature & conventions
 - Goal alignment
- Focus attention on how your work can benefit them directly

5. Help the audience understand you

- Make the (sometimes complex) information you present digestible by delivering it in components:

$$f(a, b, c) = A(a)B(b)C(c)$$

- Use structure:
 1. **Background information:** Tuned to the level of the audience
 2. **Mission statement:** Concise description of goal (in relatable terms)
 3. **Statements of need:** For each component in f , explain concretely what the audience can do to help you, and how it will also benefit them
 4. **Narrative:** Weave a logical progression into your work

(adapted from RIT, "Writing a successful proposal")

6. Be aware of tools of persuasion

- *Ethos, logos, pathos* ⇒ Credibility, reasoning, emotional appeal
- Positive and negative motivation

(from UMN, “*Persuasive Strategies*”)

- “Non-coercive goal hooking”

(Poggi)

- Cialdini’s principles of persuasion:

Authority, likability, reciprocity, consistency, consensus, scarcity

(see Kendrick article)

Beware of tools of persuasion

- Elaboration likelihood model (ELM) of persuasion (*Petty & Cacioppo*)
 - *Central route*: Persuasion from well-expressed, logical arguments for an idea that has intrinsic merit
 - *Periphery route*: From factors unrelated to logical quality, like:
 - ❖ Deft use of the tools from last slide
 - ❖ Production value / attractiveness
 - ❖ Social status
 - ❖ Being arrogant (and also a man, see *Kay & Shipman*)

The elements of persuasion

1. Clear motivation
2. **Believe in yourself!**
3. Address the audience appropriately
4. Understand the audience
5. Help the audience understand you
6. Be aware of tools

Reference Links

- *Petty et. al:* <http://psycnet.apa.org/fulltext/2002-12575-003.pdf>
- *Cramer et. al:* <http://jaapl.org/content/37/1/63.long>
- *RIT, "Writing a successful proposal":* https://www.rit.edu/research/srs/proposalprep/write_proposal
- *UMN, "Persuasive strategies":* <http://open.lib.umn.edu/communication/chapter/11-4-persuasive-strategies>
- *Poggi:* <http://www.jbe-platform.com/content/journals/10.1075/pc.13.2.04pog>
- *Kendrick:* <https://www.psychologytoday.com/us/blog/sex-murder-and-the-meaning-life/201212/the-6-principles-persuasion>
- *Petty & Cacioppo:*
<https://www.sciencedirect.com/science/article/pii/S0065260108602142?via%3Dihub>
- *Kay & Shipman:* <https://www.theatlantic.com/magazine/archive/2014/05/the-confidence-gap/359815/>