Science Communication

Ethics in NLP: Including Society in Discourse and Design

February 7th, 2019

Ryan Georgi

Some Topics to Cover

- Climate Science & Linguistics
- The Deficit Model
- Advice for Successful Science Communication
- Examples?

Climate Science & Linguistics:
Some Unique Challenges

- People have an uncommonly strong lived experience with the topic being studied
  - People experience weather every day
  - People use language every day
- How to talk to people without seeming to invalidate their experience?

The Deficit Model

- The notion that: "*If only the public 'ceased to be in a state of knowledge deficit, a healthier relationship between science and the public would emerge.*'" (Mooney, 2010)
  - Can see that college-educated republicans less likely to agree with climate science than non-college educated (Pew Research, 2015)
  - Public attitudes are also extremely important
  - Trust in a source of information is important!
  - Treating the public as a homogeneous, uneducated mass, is not likely to further this!

The Deficit Model

- Results in policy campaigns: "decide, announce, defend"
  - Decisions made without public engagement breeds mistrust, even when science is solid
  - Example in tech — Apple's "batterygate"

Some Repeated Themes

- Know your audience
- Use appropriate language, analogies when appropriate
- Keep it brief
- Use social media!

Repeated Themes:

Know Your Audience

- Who are you addressing?
  - High school students?
  - Sierra Club newsletter?
  - Academics from another discipline? ("Horizontal Communication")
- Tailor your language usage, and conceptual devices accordingly

Repeated Themes:

Know Your Audience

- More importantly, what does ***this*** public care about?
  - Note the use of the determiner
  - Part of the task of communication is getting the public:
    - Interested in the topic
    - …even to enjoy it! (e.g. hard sci-fi?)

Repeated Themes:

Use Appropriate Language

- Avoid jargon whenever possible
- Be careful when a term in your field has different meanings in others!
  - e.g. "Genetic" in linguistics… (Oakland school board amends Ebonic policy, 1/16/97)
- "figurative language" can be very helpful, but use carefully Gouthier and Di Bari (2002)
- Analogies to real life might work well, and help lower the density of what seem to be scientific ideas

Repeated Themes:

Keep it Brief

- There's a huge amount of information to convey in any field
  - For non-experts, there might be overload
- Stick to three key points
- Keep the density of new information low (Gouthier and Di Bari, 2002)

Repeated Themes:

Use Social Media

- A "leveling" effect where everyone can engage
  - Has its downsides, a "very high noise to signal ratio" (Shepherd, 2016)

Examples:

- Speech assistants and wake words vs. always-on
- Smartphone apps recording speech in the background?
- Expectations of Machine Translation (from public and engineering side)
- Expectations of chatbot behavior (from public and engineering perspective)
- Neural Networks / AI