Pros of Open Science and Open Source

- **Pooling Resources:** Building off of one another's strengths; learning from one another's failures
- **Accessibility:** Anyone can use the models, regardless of budget or affiliation
    - This also helps to ensure **diversity of contributors**
- **Lowering Barriers:** You don't need to have a tech job to explore how AI works
- **Innovation:** High-value applications are possible for more people to discover and create
    - Relatedly, advancements in addressing bias/harms becomes more possible
- **Economic Opportunity:** More access leads to more businesses and jobs
- **Transparency:** Users *and those affected* have full visibility on the model and the training data. They can better identify potential biases or errors
- **Accountability:** Provenance to trace who-did-what; independent auditing possible
- **Privacy:** Users don't have to send their data to black box APIs
- **IP protection:** Users train their models on their data, and own them
- **Freedom of choice:** Users are not locked in. They can switch models anytime
- **IT flexibility:** Users can train and deploy models anywhere they like
- **Tailored use:** Users can train/fine-tune for their specific needs
- **Diversity** of options
- More **Safety** mechanisms available

Cons of Closed Source

- **Centralization** of power
- **Opacity** of subtle bias/harm issues
- Hiding **illegal** or problematic data
- **Bare minimum** of legal compliance as opposed to good practices
- Fostering **misunderstanding for hype** and profit
- **Security** issues not addressed quickly
- Consumer apps **can't be flexible** and become **dependent** on a single model: Consumer apps built on top of closed source must **"lock-in"** their code based on what an API outputs; as closed source internal models are updated or changed, this can completely break the consumer's system, or the consumer's expectations of behavior

Common Misunderstandings

There's an idea that open source is "less secure".

- Misses that closed software has **just as dire** (or more so) security concerns as open source
- Misses the fact that the diversity of options available with open source **limits how many people will be affected** by a malicious actor

There's an idea that open source will help China to "beat us".

- Misses that the reason the U.S. has flourished in the first place is due to open science/open source.
- Misses that U.S. dominance **is a function of how friendly the U.S. is to companies**: There is more to success than the code itself, the socioeconomic variables that the U.S. provides is particularly well-placed to help open companies flourish.