

# **Responsible Conduct in Research**

# An Authentic Case

Diederik Stapel was an academic star known for his clever research experiments in social psychology. For example, he published a paper in *Science* showing that a trash-filled environment brings out racist tendencies in individuals.

# An Authentic Case

Unfortunately, the researcher admitted he not only fabricated the data, but he **fabricated the entire experiment**. And had been doing this for years.

# The “do more” mindset

This creates temptations to cut corners, bend the rules, and engage in unethical practices

# Yes It Happens

In a study, Fanelli (2009) found that:

- 2% of researchers admitted to falsifying or fabricating data
- 34% reported engaging in other forms of questionable practices
- 14% reported having witnessed colleagues manipulating data

Daniele Fanelli. How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data. PLoS ONE 4(5): e5738. <https://doi.org/10.1371/journal.pone.0005738>

# A Few Personal Experiences

- As a reviewer, I have discovered parallel submissions and re-submission of already published content
- As a conference chair, I have discovered multiple authors being added to papers after acceptance
- As an advisor, I have counseled students not to remove data for the sole reason it would allow for a statistical effect in the results

# Your Conduct Matters

- Your career and your conscience
- Others act based on the results of your research
- Society needs to find science credible
- You must model the behavior expected from those around you

# Five categories of ethical considerations

Integrity of research results

Publication and authorship

Peer review

Mentoring

Human subjects

# **Integrity of Research Results**

Do not fabricate or falsify your data, analyses, or reporting.

# Discussion

1. What are some ethical considerations for collecting user-generated data from online platforms (i.e., scraping data)?
2. What are best practices for processing and storing the data?

# Best Practices

- Respect platform's Terms of Service and have min. footprint
- Always get IRB approval
  - Easier: anonymized public data
  - Harder: if you need to create an account, the data includes identifiers, or the content covers a sensitive topic
- Encrypt the data, store securely, and destroy per IRB guidelines
- Maintain the raw data, record when it was collected and how, record all operations, and report all operations in a paper
- Data cleansing is appropriate *before* studying the results
- Consider open sharing of your data

# Peer Review

When a paper or proposal is submitted, it will receive external reviews. Almost always single blind, and often double-blind.

The discussion questions refer to your role *as a reviewer*.

# Peer Review Discussion

1. What are some ethical considerations when *deciding* whether to agree to or decline a review request?
2. What are some ethical considerations when *writing* a review?

# Peer Review Best Practices

- If you submit, you should review (and follow through)
- Only take on papers for which you have expertise
- Be open and honest about possible conflicts of interest
- Provide a fair and constructive assessment
- Do not try and gain unfair advantage, but it is acceptable to learn from the review process
- Do not force authors to reference your own work over other more relevant work on the topic

# Authorship

Refers to the names associated with the development of the work and its reporting in a paper

# Authorship Discussion

1. When it is appropriate to include someone as an author? What criteria should be used to decide?

# Authorship Best Practices

- Discuss authorship at the onset of a project
- Only include people as authors for which you can articulate a meaningful contribution to the work or its presentation

# Mentorship

Refers to the mentor (advisor) / mentee (student) relationship

# Mentorship

What are at least two issues that could arise between a graduate student and his or her research advisor?

# Mentorship Best Practices

- Discuss expectations early, write them down, and share
- Keep a record of electronic communications (don't delete email)
- Never assume

# General Discussion

We only discussed a fraction of the issues

Honest mistakes / differences of opinion are not unethical

If in doubt, talk with your advisor or trusted peers

# In Conclusion

- Your conduct and perceptions of your conduct matters
- Hold yourself to expected standards for research integrity, peer review, authorship, and mentoring relationships
- Submit certificate of completion for IRB training for next time

# Your Assignment

- Complete the IRB training through CITI. It satisfies the RCR requirements for campus and all NSF-sponsored research.
  - Valid for 3 years, then renew
  - Submit certificate of completion via Compass to show you did it.
  - See the related assignment on the course site
- Note that NIH requires additional in-person training

# Resources

"Scientific Ethics" lecture by L. Cooper and C. Elliott in Physics, the Book On Being a Scientist (2009), and my own experience