Ten Simple Rules for Scientific Fraud & Misconduct
Nicolas P. Rougier (Inria) — John Timmer (Ars Technica)

Disclaimer. We obviously do not encourage scientific fraud nor misconduct.
The goal of this poster is to alert the reader to problems that have arisen in part due to the Publish or Perish imperative, which has driven a number of researchers to cross the Rubicon without the full appreciation of the consequences. Choosing fraud will hurt science, end careers, and could have impacts on life outside of the lab. If you’re tempted (even slightly) to beautify your results, keep in mind that the benefits are probably not worth the risks.

Preprint available at https://peerj.com/preprints/27395/

Rule 1: Falsify & misrepresent
In order to start your life as a scientific fraudulent, the first thing you need to do is have a few conveniently misrepresented, falsified, or fabricated data. If you’re still hesitant about embracing the dark side of science, you can start with a slight misrepresentation to support your hypotheses — a hypothesis you’re sure is right anyway.

However, it might be good to consider other options as well. Starting with real data, you only need to change a few points in order to take a non-significant result and turn it into something with an astoundingly highly significant result. Just see what’s possible using the p-hacking application. The advantage of breaking real data is that the results look both good and not very suspicious.

Whatever option you choose, make sure to have a backup story in case people start asking about the details of the experiments. A number of misconduct cases have been detected with just a few questions.

Rule 2: Hack your results
If you are reluctant to manipulate your data, you still have the option of searching through your results to find anything that reaches significance (i.e., p-hacking). This can provide an appealing alternative to scientific misconduct.

What is the p-value of your result? If it’s close to your field’s standard, can’t you express it as such a nearly acceptable level of significance (p<0.05) or very closely resembles the limit of optimal significance (p<0.001)? While these statements don’t make much sense, they might be sufficient to convince a naive reviewer or reader.

The Grad Student Who Never Said “No” (2016)
When she arrived, I gave her a data set of a self-funded, failed study which had null results (it was one month old in an all-you-can-eat restaurant buffet where we had charged some people 50 or as much as others). I said, “This cost us a lot of time and our own money to collect. There’s got to be someone there we can salvage because it’s a cool (rich & unique) data set.” — Brian Wansink

Rule 3: Copy & paste
Writing is a tedious task and can be a fair amount of work. Summarizing the state of the art in your field will force you to actually read about what your colleagues have been doing over the past few years. It’s a very time-consuming task.

But in doing that reading, you may find that some of these colleagues wrote a nice introduction to the field or a wonderful summary of current state. If so, why bother writing a new one? It’s much simpler to copy-paste what he/she has written. Plagiarism is the nuts and bolts of scientific misconduct, but it’s brainy copying, using other people’s intellectual property (i.e., definitions from the committee on publication ethics (COPE) procedure for handling plagiarism in a submitted or published article).

Rule 4: Review yourself
It’s surprisingly easy to do. As you submit, you will be asked to give name of possible reviewers. Just provide phony names, along with email addresses that will be redirected to your mailbox and you can write your own review (but be careful to write a convincing one).

Can you spot the fake review?
• Sorry for our long silence, due to some people on our side at reading your manuscript.
• The paper is presented as a rather indecipherable and confusing collection of disparate results.
• In order to be able to publish this manuscript it needs to be rewritten in the form of a scientific article.
• The biggest problem with this manuscript, which has nearly sucked the life out of me, is the terrible writing style.
• Nice paper. Definitely.

Rule 5: Publish with predators
If you’re worried that peer review will reveal your misconduct, you still have opportunities for publishing your results. There are many predatory publishers on the internet. These predators will publish just anything (low article or high that’s been published) and you have a 100% chance of publication with a slightly higher rejection rate: less than 24% for some journals.

To find a predatory publisher, you can take advantage of the Think/Check/Submit website, which can generate a checklist that researchers can refer to when they are investigating whether a journal is trustworthy. You’ll obviously just want to take the opposite of their recommendations.

Rule 6: Don’t share data
You definitely cannot give others access to your raw data, especially if it doesn’t exist. Fortunately, researchers have been avoiding sharing their data for decades with all kind of silly reasons.

• My data are not anonymized
• Data are available on my webpage (maybe)
• You can contact me to (try to) get my data
• I cannot give it to free

Editorial of the New England Journal of Medicine (2016): A second concern held by some is that a new class of research person will emerge — people who had nothing to do with the design and execution of the study but use another group’s data for their own end, possibly stealing from the research plan devised by the original investigators, or even using the opportunity to try to disprove what the original investigations had found. There is concern among some first-line researchers that the system will be taken over by what some researchers have characterized as research parasites.

—D.L. Longo and J.M. Drazen, Data sharing

Rule 7: No replication
It may surprise you, but some researchers may want to check and/or replicate your results using the methods explained in your article.

If people try to replicate your work, and do not get the same results, you have a problem. They may insist on seeing your actual data and, if you refuse, you might be suspected of fraud or misconduct. Thus, you can try to attach a “Do not replicate order” alongside your article or to question those who want to check your science.

“I have heard from graduate students opting out of academia, assistant professors afraid to come up for tenure, mid-career people wondering how to protect their labs, and senior faculty retiring early, all because ofitu’s a cool (rich & unique) data set...” — Brian Wansink

Rule 8: Never ever retract
If you’ve made a genuine (and big) mistake in your work, there is no problem in asking for the retraction of your paper.

However, if you’ve been engaged in fraud, having your paper retracted is like an admission of guilt. It’s something to be avoided.

It is thus critical to act quickly and to delve into the coin with a simple consultation regarding a bad but not fatal error during any stage of the publication.

NEW VERSION
ADDITION
EXPRESSING CONCERN
EDITING MANUSCRIPT
FULL RETRACTION
AUTHOR VERSION
FULL RETRACTION
AUTHOR VERSION
SPECIAL EDITION
NEW EDITION
COOPERATION
NEW VERSION
ADDITION
EXPRESSING CONCERN
EDITORIAL
FULL RETRACTION
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SPECIAL EDITION
NEW EDITION
COOPERATION

If you’re first author, explain you were supervised by the last author and had no choice.

If you’re last author, explain you were not aware of the misconduct of the first author

If your name is not first but last, claim that you didn’t even know your name appeared in the publication.

Send threatening letters to those who have spottet your misconduct

Follow through on those threats and sue them all.

Rule 9: Deny if caught
If you intend to persist in a rogue scientific career, you have to be aware that you’re likely to get caught sooner or later. There is a set of simple rules to follow if you want to deny scientific misconduct.

Rule 10: Be creative (for once)
All the tactics mentioned above are already quite well known by the research community and some people are really good at spotting fake science (e.g. Dorothy Bishop, Blaise Bilbo, Nick Brown, Smart Clyde, Leonard Schreiber, Guillaume Calanovic, etc.). If you want to stay off the radar while committing fraud and misconduct, you want to be creative and invent your own rules.