

Never Waste a Good Crisis: Towards Responsible Data Management

Klaas Sijtsma



Keynote Address **5th World Conference on Research Integrity**

Vrije Universiteit Amsterdam

Background

- September 1, 2011: Rector magnificus of Tilburg University informed me confidentially that a well-known social psychologist (Diederik Stapel, DS) of our university had been identified as data fraudster
- Only 1 week earlier, DS confessed; immediately clear that magnitude and implications were serious:
 - Went back at least 15 years, covering periods at
 - ✓ *University of Amsterdam*: 1994—2000
 - ✓ *University of Groningen*: 2000—2006
 - ✓ *Tilburg University*: 2006—2011
 - Involved dozens of articles and book chapters, and affected several PhD dissertations

My involvement

- In 2011, DS was dean of School of Social and Behavioral Sciences, I was vice dean, both appointed in Sept. 2010
- I am a professor of methodology and statistics, hardly knew DS before I became vice dean, and was unaware of his misconduct until the rector informed me
- Being vice dean, the rector asked me to step in as interim dean; that was 6 years ago, I will resign as dean Sept. 1, 2017 (and happy with my two career changes)

Before we (i.e., Tilburg University) went public, we did two things:

- Asked DS for a formal confession, so that his contract could be terminated
- Installed a committee to formally investigate the fraud cases:
 - For each publication it had to be secured whether it was based on falsified or fabricated data, or whether results were made up
 - This was deemed necessary to
 - ✓ Inform colleagues and the public about what was trustworthy and what not
 - ✓ Protect co-authors from being falsely accused of involvement
 - ✓ Safeguard former and present PhD students from their early careers being devastated

At *Tilburg University*, a committee was appointed chaired by *Willem Levelt*, former President of the *Royal Netherlands Academy of Arts and Sciences* and experimental psychologist (in psycholinguistics)

Formal mandate:

- The Committee investigates which publications are based on feign data or feign research, and during which period the fraud has taken place
- The committee investigates the methods and circumstances (“research culture”) *possibly* facilitating the breach, and provides recommendations for preventing repetition

At the *University of Amsterdam*, the *Drenth* Committee was installed and at the *University of Groningen*, the *Noort* Committee

After 7 weeks, the *Levelt* Committee presented their preliminary *conclusions*

- The Committee found that the fraud committed inflicted great harm to coauthors, and PhD students in particular
- The committee found that no one could be accused of *culpable ignorance* (i.e., no one knowingly cooperated in the fraud, people were misguided)
- Flawed performance of academic criticism facilitated—unintendedly—the comprehensive and longstanding fraud; that is, nobody picked up the signs that were available
 - Unusual way of working in isolation
 - Not allowing PhD students to collect their own data
 - Presenting unlikely results to journals
 - Et cetera

Interventions

A selection of realized *interventions*, picked up from recommendations preliminary report (Oct. 2011) and final report (Nov. 2012)

Tilburg University

- Each PhD student has at least 2 supervisors
- Master theses and PhD theses are scanned for *plagiarism*
- Official formula read aloud publicly when doctorate is awarded, refers to the young doctor's *obligation to academia and society* to act with integrity
- Code of conduct
- Every staff member must sign an integrity code
- Independent Integrity Officer and Research Committee

School of Social and behavioral Sciences

- Intensified classes on research ethics and research integrity
- Science Committee was installed in the Spring of 2012

Science Committee—What is it, what does it do, and why?

- *Audit* committee that samples 20/500 articles each year, published by the School's researchers; assesses *quality of data storage* and *reporting of research methods*
- *Advises* the School's Management Team and researchers about data storage, completeness data sets, honoring subjects' privacy, access to data, and making data available to others
- Aims:
 - ✓ Provide concerted effort to *improve accountability* for data handling and methods reporting
 - ✓ Create opportunity for all to *learn*; not a witch hunt
 - ✓ Contribute to development *university's* data policy
 - ✓ Contribute to development *Dutch* national protocol concerning data archiving by researchers in social and behavioral sciences

Why not set up a *universal data storage system* and *data management policy* first, and then introduce an audit committee?

We thought that would never work, because

- Setting up a universal system is complex, will present many (unpleasant) technical surprises, takes a lot of time, is expensive
- Meanwhile, sense of urgency would disappear, especially because many researchers were not used to systematic data storage anyway

Needed to make a flying start, hence installed the Science Committee first:

- They set up their rules and regulations for researchers' data handling
- Announced annual random audits (20/500 articles)
- Now research groups were motivated to devise their own data policy that suited their needs best; you don't want to stand empty-handed in front of the audit committee

This actually works quite well, but not perfectly:

- Some groups (e.g., social psychologists) have their data policy better in place than others
- People tend to arrange their data storage only when they are audited
- When people have left the School, they tend to loose commitment
- No consistent data storage system, but this was a deliberate choice, giving priority to increasing awareness and accountability
- Remains much work to do, create greater awareness, stronger sense of responsibility and accountability

Tilburg University policy with respect to *data management*, Sept. 2016

A few notes:

- Install *Science Committees* at *each School* of Tilburg University
- Sense of urgency varies across schools, but are (slowly) catching up
- Would be great if university provides universal data storage system

Dutch national protocol

Assembly of the *Deans* of the 14 *Schools of Social and Behavioral Sciences* installed Committee “Scientific Integrity, Data Storage, and Reproducibility”

- Committee aims at finding *common ground* among the 14 Schools
- Slow process, exhibiting huge differences in urgency and motivation
- Consensus is possible for a list of basic issues; *It's a start!*

Do these (and other) interventions *work*?—Not as good as one might wish

- Not everybody is happy with signing integrity code—Sense of loss of academic freedom?
- Cultural peculiarities remain: honorary authorships, insisting on having more than 3 supervisors (max. at TiU) for a PhD—Too much networking and too little substance?
- Schools differ with respect to requirements of data package and data management—Sense of urgency varies; helps to have had a scandal in your School (but I wouldn't recommend it)

Need time, patience, perseverance ...

Conclusions

What may we **expect** from these interventions?

- Interventions will *not prevent new affairs*; *extremists* have their own reasons, will work their way around the law
- Interventions will create higher level of awareness and set clearer behavior standards; encourage *Responsible Conduct of Research*
- And, as a side effect, reduce *Questionable Research Practices* (QRPs)
QRPs: not reporting undesirable results, leave out unfavorable data, report coincidental significant results, fooling around with statistics

Not so much bad intentions (but you can't know), but surely bad outcomes

What did we **learn** from the Stapel fraud affair?

- People were shocked by the seriousness of the deceit, and that it happened in their School, University, country
- Also appealed to feelings of discomfort already present but obscured, not talked about; affair served as *catalyst*
- Discomfort referred to *economic principle* ruling research: *the more, the better*
 - More articles, lectures, PhD theses, grants, prizes, etc.
 - Status, career, travelling opportunities, meeting VIP's, etc.

Researchers and administrators are *struggling* to find new balance between *Performance Pressure* and *Responsible Conduct of Research*

Personal note

Extremists can have a disrupting influence, but *QRPs* are the real problem; the main causes of QRPs we face today are

- ***Data kept secret***: Data as a rule are not publicly available; hence, colleagues cannot check reported results and researchers feel little pressure to avoid QRPs
- ***Incompetent statistical analysis***: Researchers have to use statistics for analyzing their data, but lack necessary experience to use statistics well

Tversky & Kahneman (1970s) showed researchers use wrong kind of intuition, fall into all the traps set by counter-intuitive statistical reasoning

Thank you for your attention