

# Fraud, Mentorship and Authorship

## The 2011 case of Dutch social psychologist Diederik Stapel.

Stapel became noteworthy for his innovative research on stereotyping and prejudice. In one study, for example, Stapel found that individuals in a dirty, smelly environment were more likely than those in a clean environment to discriminate against another person. Stapel quickly rose in the ranks of social psychology and was regarded as one of its up-and-coming stars. Stapel and his graduate students designed experiments to test various hypotheses. However, when it came time to collect the data, Stapel took over, claiming he had networks he could tap into for participants. Eventually, he produced a data set that was fraudulent (Callaway, 2011). Unfortunately, many of Stapel's studies were based on fraudulent, fabricated data.

Stapel's research fraud continued until three graduate students noticed a number of inconsistencies in Stapel's published research. They took their concerns to the department chair, who launched an investigation (Callaway, 2011). Eventually, Stapel was dismissed from Tilburg University, and criminal charges were pursued against him.

Stapel's fraud had wide-ranging consequences. When stories like Stapel's are disseminated, the public loses confidence in the social sciences (and science in general). As a result of his dishonesty, there are now several articles in the literature that are fraudulent and misleading, thus polluting the body of knowledge in social psychology. His dishonesty may also affect negatively the reputations of his graduate students and co-authors on the published papers (who had nothing to do with Stapel's fraud).

REPORT

## Coping with Chaos: How Disordered Contexts Promote Stereotyping and Discrimination

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Article

Figures & Data

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**This article has been retracted. Please see:**  
[Is retracted by - December 02, 2011](#)



## Deciding What Study Results to Publish and Transparency in Research Publication

Dr. Wyck is the lead investigator for a cohort-based case-control study of the genetic and environmental factors related to Parkinson's Disease (PD) that compares 1,000 patients with 1,000 matched controls. Her team's analysis discovers that having a history of head trauma ( $p=0.005$ ), high blood pressure ( $p=0.01$ ), or exposure to agricultural pesticides ( $p=0.04$ ) is related to 25-60% higher risk of PD. Surprisingly, Dr. Wyck found that current cigarette smokers were at 40% lower risk of PD as compared to non-smokers ( $p=0.02$ ). The analysis also indicated that non-smokers exposed to second-hand smoke had 12% lower PD risk as compared to non-smokers without exposure to second-hand smoke, but this association was not formally statistically significant ( $p=0.07$ ). Dr. Wyck is concerned that the findings for smoking exposure may have a negative impact on public health by discouraging people from quitting (i.e., as a way to avoid developing PD). While preparing the study manuscript, she is considering whether or not to report the findings related to smoking (and if so, how to address those findings in the discussion).

### Questions:

1. Should Dr. Wyck report all of her findings, including those related to smoking? Why or why not? What if the result for smoking was opposite; i.e., it was related to higher PD risk?
2. Should she only report findings with  $p$ -values  $<0.05$ ?
3. Which findings should Dr. Wyck emphasize in title, abstract, and discussion?
4. How should she discuss the apparent protective association with smoking; e.g., should she speculate on possible mechanisms, such as nicotine's role in increasing brain dopamine levels?
5. What, if anything, should the authors say about the second-hand smoke finding?
6. What aspects of the many health risks associated with smoking are relevant to the findings?

Professor Plum has taken on a new graduate student, Rose Scarlett, as part of an overseas exchange program. Her graduate program mandates attending their extensive training in research ethics and record keeping. She integrates easily into the lab culture, making friends, but seems very secretive, almost protective of her data. Her project is part of a collaboration with another exchange student, Grey Pu Pon, and a Research Fellow, Dr. Byrdie Peacock, who oversees the project for Professor Plum. As the work progresses, Dr. Peacock believes the three should meet regularly to go through their data. At first, Rose brings in her results, usually in the form of finished tables or graphs, but gradually finds excuses to miss the meetings. Rose also never discusses her work with Grey. When Byrdie goes to Rose directly to go over the original data for one of her figures, Rose cannot produce the data. She claims that because the figure was finished, she deleted the original files from the lab computer associated with the image processor. Byrdie cannot find it in Rose's file on the lab's back-up server. When pressed to look at her notebook, Rose sends Byrdie the data she was unable to produce, claiming she had it on a memory stick but had forgotten about it. Several months later, Dr. Peacock believes they have enough information and a good story to begin assembling figures and data for a manuscript. By now, Byrdie has seen several versions of a figure with Western blots that Rose had been working on. They appear similar, but have subtle differences. Rose provides yet another figure of the blots, again different from the previous versions. Byrdie insists that Rose produce her lab notebook. Byrdie finds that experiments and data in most cases are not dated and that data sheet printouts for other assays are minimally labeled or have nothing at all by way of documentation. They are just stuffed in randomly. Of greater concern is the fact that the lanes of the original images for the bio-tests have no labels for treatment conditions. When pressed for an explanation, Rose claims that she felt rushed to produce a final product. The last figure has been labeled directly and represents the primary data. She apologizes but maintains that the final figure she provided is the correct representation of the experiment.

Research Misconduct or Sloppy Science?

Are there problems regarding data management, and if so, what are they?

Who is at fault?

Was there a role for Professor Plum?

What is your opinion of Rose's explanation? O

Is pressure-internal or in relation to a job application- ever a legitimate excuse for being sloppy?

What is an appropriate response to pressure?

Would your opinion change if Rose had had previous training in ethics and record keeping?

How could this situation have been prevented?

- Can you show all of the primary data for each experiment you performed a year ago?
- Can your experiments be reproduced by someone else from your lab notebook?

## Authorship, Collaboration, and Outside Activities

Dr. Johansson is a researcher at Cutting Edge University who is working and training at the NIH via a Special Volunteer appointment under the direction of Dr. Fathi. Dr. Fathi, Dr. Parekh, a Professor at Cutting Edge University, and researchers from BioAI, a private company, have been collaborating on developing artificial intelligence (AI)/machine learning (ML) programs that predict how respiratory viruses interact with human lung epithelial cells. The collaboration is governed by a Cooperative Research and Development Agreement (CRADA) between NIH, Cutting Edge University, and BioAI. As part of this collaboration, Dr. Fathi agreed to have Dr. Johansson work and train at the NIH for two years. The NIH provides Dr. Johansson with training, access to facilities, equipment, expertise, and data but not stipend/salary support, which is provided by Cutting Edge University. The AI/ML programs that Dr. Johansson is working on have been developed using NIH data. Some of the software is open source, but some is under development and not yet published or shared widely. The CRADA permits the sharing of computer code between NIH, Cutting Edge University, and BioAI. One morning, Dr. Takekazu, Dr. Fathi's Branch Chief, asks Dr. Fathi to meet in person about an urgent matter. Dr. Takekazu informs Dr. Fathi about a paper recently published online in the Journal of Machine Learning in Biomedicine that describes an AI/ML model for predicting how the herpes simplex virus interacts with genital cells. Dr. Johansson is the paper's first author, Dr. Parekh is the last author, Dr. Fathi is the second to last author, and 3 authors from BioAI are middle authors. Dr. Johansson's affiliation is listed as with the NIH and Cutting Edge University. The paper lists funding support from Cutting Edge University and BioAI and acknowledges NIH's support. The paper also mentions that software patents are being applied for. Dr. Takekazu further notes that: (1) there is no record of the article having gone through the NIH manuscript clearance process, and (2) no employee invention report (EIR) has been submitted to the NIH Office of Technology Transfer. Dr. Fathi is surprised to hear this news, explaining that they were unaware of this manuscript and are now hearing about this research for the first time. Dr. Fathi is additionally dismayed at not knowing about Dr. Johansson's undisclosed work for this research, which was not part of the research plan described in the CRADA.

1. What are some of the ethical/legal/policy concerns created by this situation?
2. What should the NIH/Dr. Fathi do? Should Dr. Fathi write to the journal and ask to have their name removed from the paper? Should Dr. Fathi ask the editors to withdraw the paper because computer codes were used without permission?
3. Can Dr. Johansson remain the first author but not list their NIH affiliation?
4. Should the NIH contest the patents that are being applied for?

A graduate student in her fifth year of doctoral training files an ethics complaint with a university ethics committee claiming that her dissertation chair and advisor, Dr. Porous, abandoned her, leaving her emotionally distressed. It appears the two developed an unusual level of attachment due to frequent socializing and development of a personal relationship that many at the university described as “intense.” The student had several life crises and emotional problems during her training and Dr. Porous would frequently provide what amounted to “psychotherapy sessions” that were as frequent as three to four times a week. He encouraged her to contact him by phone after hours and often invited her along to events with his family. The student became quite distressed when, on her graduation, Dr. Porous attempted to terminate the mentorship.



Mx. Tegene was a Bachelor in Science and a trainee supervised by Dr. Murphy, an endocrinologist and clinical researcher at the NIH. Mx. Tegene spent a year at NIH before enrolling in medical school. While at NIH, Mx. Tegene assisted Dr. Murphy with a research project on medication adherence and health outcomes for patients with Type II diabetes. Other people working on the project included a pharmacy fellow, Dr. Raj, a social worker, Mx. Puig, and a research nurse, Mx. Vilensky. The project involved collecting the medical and social history of study subjects/patients, reviewing medications, collecting blood and urine samples, and administering several surveys/interviews. After a long day of interviews, Mx. Tegene was having coffee and talking with Mx. Vilensky about some ways of potentially improving medication adherence. Mx. Tegene suggested that using an interactive game on cell phones might improve medication adherence. The following week, Mx. Tegene gave a report at a lab meeting summarizing their initial findings. During the discussion period, Mx. Tegene said that it might be interesting to test whether using an interactive game on cell phones could improve medication adherence. Dr. Murphy seemed interested in this idea but not incredibly impressed. Two years after leaving the NIH, Mx. Vilensky sent Mx. Tegene a paper recently published in The American Journal of Diabetes Management describing the results of a study testing the efficacy of using an interactive cell phone game to promote medication adherence, which showed that playing the game increased medication adherence by 30% and glycemic control by 25%. The authors included Dr. Raj, Mx. Vilensky, Mx. Puig, and Dr. Murphy but not Mx. Tegene. Mx. Tegene was not even acknowledged in the paper. Mx. Tegene is upset after reading the paper because of not being credited for the study's original idea. Mx. Tegene contacts Dr. Murphy about this issue and demands an explanation. Dr. Murphy replies that Mx. Tegene was not acknowledged because it was not Mx. Tegene's original idea. Dr. Murphy mentions discussing this idea with other NIH colleagues before, but when pressed by Mx. Tegene, Dr. Murphy cannot remember precisely when this occurred.

1. Should Mx. Tegene have been an author of this paper? Should Mx. Tegene be acknowledged in this paper?
2. How can Mx. Tegene be acknowledged at this point?
3. If Mx. Tegene is not acknowledged, would this be plagiarism? How would one prove plagiarism?
4. Should Dr. Murphy have asked Mx. Tegene to collaborate with the research team on the adherence project and possibly be an author?
5. Assuming that Mx. Tegene would not collect any data due to their commitment to medical school, what would Mx. Tegene need to do to qualify as an author?
6. If you know that an idea has been discussed by others but not published or presented formally, should you acknowledge it? How would you do this?
7. Should members of the research group have written down Mx. Tegene's medication adherence idea when it was discussed at the lab meeting?