

## Interview with Prof. Dr. Gerhard Fröhlich on the Schön Scandal: “Self control mechanisms are a myth in science to avoid any serious external control”



*Prof. Dr. Gerhard Fröhlich (third from left) during the panel discussion on the topic “Publish or Perish...?” (Mainz, May 23rd). Other debaters (from left to right): Dr. Peter Gölitz, Editor-in-Chief of “Angewandte Chemie”, moderator Jan-Martin Wiarda, Editor of DIE ZEIT, Prof. Dr. Gerhard Fröhlich, Prof. Dr. Katharina Al-Shamery, ombudsman of Science in Germany*

The Schön case has not only been widely discussed by journalists and media but is also of interest to researchers working in the field of theory of science. Prof. Dr. Gerhard Fröhlich from the Johannes-Kepler-University, Linz, is one of them. His main research areas are the theory of culture and media and philosophy of science, especially scientific communication and scientific misconduct. Prof. Fröhlich came to Mainz for the panel discussion “Publish or Perish...?” and the Journal of Unsolved Questions interviewed him about the Schön scandal and the book “Plastic Fantastic” during that visit.

**JUnQ:** Almost 10 years have passed since Jan Hendrik Schön’s fraud was discovered. What has happened in the scientific community since then to prevent fraud?

**Fröhlich:** First of all, it is hard to consider the “scientific community” in its unity, since national styles and policies as well as the individual scientific disciplines differ greatly. In disciplines where staggering, high profile scandals occurred in the last years, some provisions are noticeable.

Regarding medical research, the institution of “honorary authorship” has been impeded. Now, when a medical article is to be published, every single contributor should be assigned to a specific contribution. In some journals, the authors even have to sign personally that they endorse the methods and outcome of the study. In the field of medicine, research registers have been implemented with the goal to prevent the disappearance of disagreeable results. In medical research, 40 to 60 percent of studies never get published because they fail to produce the desired outcome. Unfortunately, these research registers are still far from listing all studies and all important details of the covered studies.

In other areas, where the public is less interested in reliable results, provisions against plagiarism, fraud, and deception are still rather lax. This starts with the lack of any legal basis to penalize cheating during exams in Austria and ends with missing declarations under penalty of perjury – for example in case of Karl-Theodor zu Guttenberg and the Bayreuth affair.

**JUnQ:** Eugenie Samuel Reich frames her account of the Schön scandal with the question if the Schön case is an example of functioning self-correction mechanisms in science – or if it is an example for the opposite. What is your opinion?

**Fröhlich:** Self control mechanisms are a myth in science to avoid any serious external control. I have studied all fraud affairs precisely and in almost every case anonymous allegations coupled with mass media outrage – in most recent years with an interim period of outrage on the internet – were necessary before the institutions themselves agreed to take action. In the US, the first serious sanctions against scientific fraud were imposed from politics against the grim resistance of scientists. The role of a certain Albert Gore should not be forgotten.

**JUnQ:** Why could Schön publish fake data for such a long time? Which protagonists failed to notice?

**Fröhlich:** Science and its sponsors, media and politics, everybody wants heroes, “Übermenschen”. The lion’s share of uncovered scientific cheaters were supermen or superwomen, shooting stars in their field, decorated with honors and predicted to win the Nobel Prize. In every case, though, an elderly gentleman held his protective hand over them to award them an official seal of scientific credibility.

With Schön it was Batlogg, in the Korean clone scandal it was US scientist Schatten, in the German cancer research scandal it was Mertelmann. Not one of them was subject to prosecution after the fraud had been detected, although they were co-authors and, in case of Batlogg, even corresponding authors on a long list of falsified studies. A long publication list is well known to be hard cash in science, therefore the senior mentors heavily profited from the falsifications.

Besides the mentors, project managers, and research institutions, the scientific journals malfunctioned, of course, especially Science and Nature, journals with a general scope. Generally, refereed journals are a bit dishonest: In the past

they claimed that they hardly encountered any fraud, plagiarism, and deception because their reviewing system worked so well. Now, after countless cases of fraud, they claim that peer reviewing and the journal business have never been responsible to detect and avoid scientific misconduct.

**JUnQ:** Eugenie Reich's book heavily focuses on the figure Schön as the criminal and mastermind. She portrays the institutions and the scientific community as the protagonists that could not prevent the fraud. Do you think that this perception does justice to the case?

**Fröhlich:** Personalizing and scandalizing have always been a strategy to acquit science from structural failures, attributing all problems to the criminal actions of individual delinquents. They are put forward as scapegoats to clear science. Mrs. Reich's personalized and scandalized perception of the case relies on second-hand statements about conversations, impressions, and events 10 or 20 years ago. She claims that her interview partners remembered everything correctly, but I highly doubt their statements. In the retrospective, it is always easy to reinterpret events in a way that put the blame on one individual only.

**JUnQ:** In her book, Eugenie Reich quotes a whistleblower, who accused colleagues of scientific misconduct. He states that after his allegation of the fraud he wanted to stay anonymous for the rest of his life "like a rape victim". Why do accusations weigh so heavily on whistleblowers?

**Fröhlich:** As a matter of fact, the protection of whistleblowers still is not nearly sufficient yet. Reviewers are allowed to remain anonymous, but activists in the German plagiarism wikis are attacked because they do not reveal their identity. Peer Review is anonymous, too - but almost nobody is criticizing the arcane practices of scientific funds and journals. Together with two colleagues, I founded the "Initiative for Transparency in Science" in Austria<sup>1</sup> in order to enhance scientific ethos in Austria, which was a cause for aggressive anonymous mail addressed to me.

**JUnQ:** The Schön scandal caused a big outrage in the scientific world. But what about the small data embellishments

and the day-to-day inaccuracies in the lab? Are we doing enough to prevent fraud at its early stage?

**Fröhlich:** Science will never be completely faultless. There will always be fraud, deception, and plagiarism. But individual states, research institutions, scientific associations, scientific journals, and so forth, should have the power to make more effective provisions. Tighter legal arrangements would also be necessary. I think it is outrageous that ghostwriter offices can freely prosper without the possibility to prosecute them legally. One of the bigger ones praises itself with the authorship of 5000 projects in the German speaking countries in the last seven years. All beneficiaries of falsifications should be held accountable for the misconduct and should return their gains. These could be invested in a trust for the detection of falsifications, because sometimes only a few thousand Euros are lacking for the prosecution in certain cases. In Germany there is an additional overcast perception of "scientific freedom". For example, a scientist from Gießen successfully went to court against the appointment of a commission investigating possible scientific misconduct in his lab. He won the case with the argument of "scientific freedom". Another aspect, that some publishers probably are not so happy about, is Open Access, meaning the barrier-free access to all scientific publications and data. Without this, the "collective intelligence" of all scientists and journalists does not have any effect. As long as publications are subject to so many legal stipulations that they can neither be handled nor analyzed by search engines, scientific misconduct will keep on prospering.

Further reading:

*Gerhard Fröhlich: Visuelles in der wissenschaftlichen Kommunikation - z.B. Betrug und Fälschung, 2003. In: European Journal for Semiotic Studies 15 (2-4), 627-655. (Issue on "Iconicity", ed. by Jeff Bernard and Gloria Withalm), <http://eprints.rclis.org/archive/00011693/>*

—Leonie Mück

## Questions of the Week

*The Journal of Unsolved Question presents a "Question of the Week" on its homepage every week. Set up and formulated by the members of the editorial board, the main purpose of the "Question of the Week" consists in intriguing the reader by presenting topics of ongoing research. "Questions of the Week" published so far cover a wide variety of scientific fields, but share the feature to be of certain importance to several disciplines.*

*In the following, we present selected "Questions of the Week" from the last six months.*

### Are there smooth and globally defined solutions to the Navier-Stokes equations?

*by Thomas Jagau*

Although first formulated in the 19th century, our knowledge of the Navier-Stokes equations remains minimal. These basic equations of fluid mechanics describe gas and liquid flow and can be derived by invoking conservation of momentum, mass, and energy for a continuum fluid. They

form a set of nonlinear partial differential equations of second order, for which it has not been mathematically proved yet that smooth and global solutions always exist in three dimensions. Understanding the Navier-Stokes equations is also considered as a first step towards gaining better insight

<sup>1</sup><http://de.antiplagaustria.wikia.com/>, [antiplagaustria@gmail.com](mailto:antiplagaustria@gmail.com)