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## To Get Started

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We want to open a new chapter in science communication. Applying cabaret to research and technology. We are convinced that science and society come together better through a smile.

Science communication is facts and emotion.

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Many people care about the facts. But what about emotion, comedy and tragedy? What role do comedy, satire, cabaret, criticism and humor play in science communication? We would like to shed light on this. In doing so, opportunities and challenges of science communication (cf. Weitze and Heckl 2016) become clear, new approaches become visible. In this respect, this book is both an extension and a deepening of the 2016 volume, to which we will refer at appropriate occasions in the following.

## Science Cabaret: A Vision

Entertaining and funny science has been entering stages all over the world for quite some time. For example, at science slams, in author readings or in shows. But that is not yet science cabaret.

It was May 22, 1986, when a television director at Bayerischer Rundfunk stopped the broadcast of “Scheibenwischer” (“Windshield Wiper”: satirical TV show) in order to protect the Bavarian people from ridicule about nuclear energy. Today, Max Uthoff asks why cabaret as a whole is hardly censored in our time: “Either the system is so settled that criticism doesn’t really itch the powerful anymore. Or we are so tame that those on top don’t recognize any real hostility” (quoted from Reiser 2019, p. 25).

Like politics, science, research and technology must also face or be exposed to satirical criticism, for example along the lines of the Rhenish carnival or the traditional “Teeth-Baring” (in Bavarian dialect “Derblecken”) at the Strong Beer Festival (“Starkbieranstich”) on Munich’s Nockherberg by the legendary Hildebrandts, Polts and Asüls, to name only a few of the famous cabaret artists making fun of top-notch political leaders gathering there. This is precisely the niche that this book aims to conquer.

TV anchorman Hanns Joachim Friedrichs is credited with the following quote: “You can tell a good journalist by the fact that he doesn’t side with a cause, even a good cause.” Just as Friedrichs upholds this kind of quality journalism, Ottfried Fischer upholds the particular professional ethic of a cabaret artist: “To break free from parties. To admonish and warn unflinchingly. Remain committed to the pursuit of positive world change. To use one’s own imagination and power of ideas. [...] Fire up debate and discourse. Educate and inspire people, and do so with attractive, modern, and artful means. Being funny, brave, quick-witted, profound, pushing boundaries and sometimes causing pain” (quoted from Reiser 2019, p. 22). Yes: this is exactly the kind of science communication we would like to see.

While Science Slams are established and still attract a large audience, it is now time to think up the future, experiment with new forms and push with them onto the stages and into the forums. Not as an adaptation of the creative Anglo-Saxon language and science world, as has been the case in the past, but with ideas of our own, a bold and finally “Made in Germany” again! Just as many science communication forums such as Science Centers were originally invented in Germany (and then re-imported from the USA and UK).

Science and technology have turned the tide repeatedly in the history of civilization. Today’s innovators, interest groups behind them, the winners and losers should be targeted not only discursively but also cabaret-style, just like the great political figures and their environment. Nevertheless, the previously valid forms of entertaining and witty science retain their justification. They also find their way into this book and embed the new.

Pigor “Down with IT” (Chorus)

- Revenge for the broken promises of IT
- Your things never work, never work, never work!
- Revenge for the broken promises of IT
- For every minute a user loses trying to figure out how
- Your screwed up menu doesn’t work,
- Means no, he’s not too stupid, you don’t get it!

*Retrieved from:* <https://www.pigor.de/songs-a-z/>

## Some Favorite Examples

“Down with IT”: the starring role of the cabaret artist Pigor was always on our minds and we could fervently understand his anger when writing the texts for this book with the PC as well as during the editing work.

In fact, science communication is most exciting when it does not come from within science itself. It is precisely the outside perspective that can reveal relevance and narrow-mindedness, draw connections and reveal dead ends. Why is it that so few cabaret artists have discovered science and technology for themselves?

But of course scientists themselves also make jokes about themselves and their research. This comes across as somewhat drier and more serious, and instead of thigh-slapping, perhaps only a brief twitch of the eyebrows. A few examples may illustrate this:

- On the occasion of Max Planck’s 80th birthday, on 23 April 1938, physicists’ colleagues performed a humorous play “Die Präzisionsbestimmung des Planck’schen Wirkungsquantums” (The Precision Determination of Planck’s Quantum of Action) (cf. Hoffmann et al. 2010). In it, diaphragm movements during laughter are measured in an experiment, supposedly based on quantum

processes. And from the results of the measurements, the quantum of action is determined mathematically and its value is handed over to the celebrant by a postman in the auditorium after the curtain falls.

- In a four-volume “Encyclopedia of Philosophy and Philosophy of Science” one would hardly expect a joke article – but in fact the editor has smuggled in the “discontent sentence” in volume 4 (Mittelstrass 1996), which is pure invention. In terms of content, this does indeed relevantly describe an essential drive of science. But at the very latest with the references (with titles like “Curiosity and Asceticism. Philosophy between rainbow and (rain) barrel”, op. cit., p. 437) it becomes clear that this is a prank.
- The Ig Nobel Prize is the annual satirical award to honor scientific achievements that first make people laugh and then think (“to honor achievements that first make people laugh, and then make them think,” see <https://www.improbable.com/>).

Here it can be clearly seen that we often only understand scientist jokes with appropriate prior knowledge. (Another example: “There are only 10 kinds of people – those who read binary and those who don’t”, Hurley et al. 2013, p. 33.).

The worldwide conferences of Public Communication of Science and Technology (PCST) strive for more play and art in science communication. PCST (2018) in Dunedin/New Zealand, for example, also provided a stage for the musical presentation of research and science (<http://wfsj.org/v2/2018/04/23/pcst2018-engage-audiences-by-hearts-and-emotions-with-facts-and-figures/>). This stage can be filled with all kinds of artistic forms and expressions ... including humor.

## “It Has Long Been Known ...”

Speaking of the lucrative niches of science communication: The lingua franca of science worldwide is the English idiom. If you want to succeed in research, conventional communication and all avant-garde forms of communication, you have to take to the international stage. Like the science cabaret artist Vince Ebert, who has his say in this book and takes on traditional Anglo-Saxon humor. In doing so, he and other courageous pioneers tap into not only a significant cultural reservoir of humor, but also a language that may be endowed with more humorous nuances than our native idiom.

This can be seen, for example, in the effortful paraphrasing of ignorance and incompetence, the humorous content of which is open to much interpretation between seriousness and technical constraints (Forschung and Lehre 2006). Here are a few examples:

- It has long been known (I didn't pick out the original quote),
- a definite trend is evident (these data are practically meaningless),
- typical results are shown in Fig. 1.1 (This is the most beautiful graph I have),
- correct within an order of magnitude (false),
- a careful analysis of obtainable data (Three pages of notes were destroyed when I accidentally spilled a glass of beer on them),
- it is hoped that this study will stimulate further investigation in this field (I give up!).

Research on comedy is not funny per se, but it is helpful if it differentiates and explains the basic concept (between comedy and sarcasm). A handbook by Wirth (2017)



**Fig. 1.1** Cartoon by the trio of editors: Test in the experimental laboratory for scientific humor – is it tingling yet? (Graphic: Marlene Heckl)

provides access to comedy research. It presents the range of formats that can come across as comical. A monograph by Hurley et al. (2013) is packed with examples and poses the question of the (evolutionary) meaning of humor.

Is this book now a handbook, a reader, analysis or criticism? Perhaps a little of everything. It was and is important to us to collect internal and external perspectives on our topic, from and with cabaret artists, experts from theory and practice, as well as national and international examples – and in doing so, as little cool peppermint breath as possible, but rather sometimes thigh-slapping. Also and especially because we are guests of a renowned scientific publishing house.

**Acknowledgements** The editors would never have been able to produce this book with its many colourful spots and facets on

their own. We would like to take this opportunity to express our sincere thanks to all the authors whose original and exciting texts are presented on the following pages and who develop an entire panorama. In addition, there are important contributors in the second and third rows, on whom the stage spotlight is hereby directed. Christoph Uhlhaas (Munich) brought Pigor to our attention at an early stage, thus initiating the topic. Luz Obeso kindly assisted to edit the English machine-translated version. A seminar with students at the Technical University of Munich TUM on the theory and practice of humor in science and research was a fertile field for further suggestions and introductions. Last but not least, the dynamic Munich cabaret scene also provided many impulses.

## The Editors

This contribution was written by the three editors (Fig. 1.1):

Dr. Marc-Denis Weitze (Fig. 1.1, right) directs Technology Communication at the Head Office of the German Academy of Science and Engineering (acatech) in Munich. After studying chemistry, physics and philosophy in Konstanz and Munich, he obtained a doctorate in chemistry (TU Munich). He then worked at the Deutsches Museum in Munich and as a science journalist. He teaches as a private lecturer for science communication at the TU Munich and is working on a career as a science cabaret artist.

Wolfgang Chr. Goede (Fig. 1.1, left) is an international science journalist. He lives in Munich and Medellín, works as author, lecturer, facilitator around scientific and technological hotspots of our time. He studied political science and communication (MA) at the LMU Munich and was a scholarship holder of the Robert-Bosch-Stiftung in the science journalism program. His focus is the democratic and socio-political relation of science and the conflicts therein.



Wolfgang M. Heckl (Fig. 1.1, centre) is Professor of Experimental Physics and conducts research in the field of nanoscience and science communication. He is General Director of the Deutsches Museum and holds the Oskar-von-Miller Chair for Science Communication at the TU Munich School of Education. He is the author/co-author of nearly 200 original (peer reviewed) publications and nearly 150 other publications. As a member of numerous national and international committees, Heckl also advises the European Commission and the German government on nanotechnology and science communication.

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