

# Dumber in English

*What happens if the whole world comes to use one single language for science and higher education? A piece that was published in Frankfurter Allgemeine Zeitung in July 2007 and that created lots of controversy here and abroad.*

Recently, a conference took place in Berlin with the lovely title, "Thought Researchers". It dealt with the issue of whether and how one can read thoughts and feelings directly from the brain with new techniques of neuroscience. Gathered in the auditorium were scientists, representatives of foundations and the German National Ethics Council – even the Federal Criminal Police Office had sent a delegate. All the speakers – six Germans, plus three from the United States and one from Great Britain – were outstanding. And they all spoke either English or, in the case of a German speaker, now and then something similar. Unusual word-choices and **serpentine sentences** can make a speech seem more brilliant than it actually is.

But who in the audience spoke English? No one. And even the four foreign guest speakers could easily have understood a lecture in German, because **simultaneous translation** was available over headsets that were readily on hand. As someone from the sponsoring foundation told me, of course it would be better if the local guests would simply speak German. This would increase the public resonance. But the professors had another idea. Their argument: People only take a conference seriously when English is the official language. Now, one could muse over the confidence of researchers who think their credibility is enhanced in a foreign language. Or fume over the **contempt for the public**, if all that the organizers care about is their standing among peers. After all, the "Thought Researchers" had received funds for a public event, not for an experts' forum.

Five hundred years ago, Luca Pacioli, a pioneer of modern mathematics and accounting, bade **farewell to Latin** as the language of contemporary science. Galileo Galilei followed suit, 100 years later. They wrote in Italian, and a significant part of their contribution was in creating new **terminologies** for their new ideas, in the **vernacular**. Knowledge was to be accessible for all.

Today, scientists are headed towards a reversal of Pacioli's revolution. But how do they expect to win the sympathy of a public with which they no longer even have language in common? And will we soon reach a point where we no longer can discuss the results of new research in German because we can't find the vocabulary? Society is threatening to split: On one side will be those who employ an elite language, and on the other, all those who miss out on the latest developments. So the issue of whether German remains a language for science is not merely a question of national pride. It has to do with something far more momentous: **democracy**.

Anyone who only encounters scientific research in a foreign language pays a heavy price, even if he is a master of the idiom. "We are **dumber in English**" – this was the conclusion that researchers came to in Sweden and the Netherlands, where children were introduced to English on their first day of school. Lectures in English are part of

every subject, but nevertheless, the test results are about ten percent lower on average than in courses taught in the mother tongue. In English seminars, students ask and answer fewer questions; they give the overall impression of being somewhat more **helpless**. Neither students nor teachers are generally aware of the problem, because they all overestimate their expertise in English.

By now, English is the sole language used in lectures in 250 out of 1,976 advanced educational fields in Germany ("master's degree" programmes). Should this development continue, it would mean certain death for German as a language of research. In Sweden's most renowned university, in Uppsala, they already are considering offering more programmes in Swedish or returning completely to the mother tongue for basic studies.

Students and their instructors don't only face comprehension problems. Language also transmits an emotional connection with a subject. And the more abstract a discipline, the more important this relationship. I remember well my enthusiasm when I heard the wonderfully catchy algebraic terms like **kernels** (amounts added to zero) and rings (amounts of numbers with specific links). I could immediately picture these concepts.

In the utterly abstract field of quantum physics, Erwin Schrödinger coined the term of "Verschränkung" – most closely translated into English as entanglement – for little parts that, though far from one another, always keep the exact same distance from each other. But unlike the English term, the German word tells me right away what is meant. Einstein described the confusion of "Verschränkung" succinctly: It must have to do with a "spukhafte Fernwirkung," most closely translated as "**long-distance ghostly effect**" – a puzzle that preoccupied physicists to this day. Such clarity is lost forever, if the concepts only are known by the closest **English equivalent**.

So what can be done? German should remain the language for seminars and lectures. The counter-development – that people in the natural sciences, and increasingly also in the arts, only conduct international communication in English – is irreversible. For researchers, it's all about **influence**, which is greatest when everyone uses the same Lingua franca.

It shouldn't hurt German scientific language if, in the course of everyday research, publications appear in English. Such articles almost always deal with tiny advances in knowledge – like the question of whether or not gene X is expressed under the influence of protein Y. They are oriented towards a **small audience**, they seldom influence scientific concepts and they are, even if composed by native speakers, usually linguistically as outstanding as a manual for a DVD player.

But a pile of puzzle pieces is still not science. Every discipline needs publications that show connections, transmit inspiring ideas and sketch out new concepts. Such work is intended for colleagues beyond the narrow realms of one's own field and broaden the circles of knowledge. They are nourished by their use of language, because the author wants to lead the public through a distant and **foreign territory**, and thus wishes to be

as convincing as possible. In order to preserve German as the language of science, we should make an effort along these lines.

A little initiative is needed. These days, researchers get prestige and money for publication in the most renowned possible international journal or for an appearance at an international conference of experts. But they don't get that for an **elegantly formulated essay** about the intellectual concepts underlying their work, or for a book that puts their own work in its context, and certainly not for a lecture in a joint lecture series. Not only that, the preparation of such an article takes more effort than a hurriedly **slapped-together** piece in a trade journal. And no one in our universities teaches how best to accomplish this task.

Yet scientists thrive on their ability to learn, and are receptive to rewards, just like any of us. So you have to offer them **incentives** to work on their use of language, and also to mix with the general public.

Two measures could be taken immediately to induce a change in mood: First of all, in the future, final papers in all departments should contain a multi-page summary in an easily **understandable German**. This summary would be included in the exam grade. In addition, applications for public funding must include an extensive synopsis that any interested layperson could understand. Every researcher owes this to democracy.

Secondly, in the future there should be a **generous prize** to encourage the best scientists to write. One could recognize German-language texts in various categories: The best collection of academic writing; the best essay; the best research report; the best textbook and then a best specialized book in both the natural sciences and the humanities. The Sigmund Freud Prize of the Deutsche Akademie für Sprache und Dichtung (the German Academy for Language and Composition) cannot deliver what is needed. One could ask a jury to select the best German academic texts and compile these in a year book - the USA has been doing this for ages.

In the final analysis, the question of whether and how to nurture language in the sciences depends on how we perceive the **business of science** as a whole. It is easy to forget that research is far more than posing hypotheses, collecting data and disproving theories. That is the daily work. But there is a much bigger picture produced by this collective effort: Science is also a narration by people who want to better understand and **improve the world**. That is why the works of Darwin, Galileo and Einstein fascinate us to this day. If we re-learn how to tell the **story of science**, then German will have a future as a language of science.

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