



Clash of the titans

Text: Mathias Plüss | Illustration: Markus Roost

Science is just like sports. It's all about honors, money and medals. Most of all, it's about being first. But not everyone plays fair.

Two professors meet at the entrance to their university, just as the flag is being lowered to half-mast in mourning. “Do you know which of our colleagues has died?” asks the one. “Not a clue,” says the other. “Any one of them will do for me.”

Sure, it's just a joke. But there's more than a grain of truth in it. As a science journalist, I've often been witness to scenes that are more reminiscent of a kindergarten than a university. I'll never forget the professor of geography who made fun of the “little grasses and mosses” that a rival colleague had discovered in glaciers. “He's not even a geologist,” was his rival's reply, which was apparently quite an insult in their exalted circle. And he added that he'd withdraw everything he'd said for my article if I dared to describe the geography professor in question as being “renowned.”

If we are surprised at such scenes, it's only because we have a false image of scientists. We imagine them to be like unfeeling eunuchs, committed to truth alone. But in so doing, we ignore the fact that scientists are just ordinary people with all the same urges, needs, difficulties and weaknesses. “In my experience scientists are no different from other human beings,” wrote Hans J. Eysenck, the German-British researcher into human intelligence. “Many of them (not all!) do make wild claims, appeal to prejudice and authority, claim omniscience, fight like Manx cats, and are jealous of their peers.”

A matter of speed

In the early 1980s, the American virologist Robert Gallo and his French colleague Luc Montagnier were engaged in a race to discover the AIDS pathogen. Initially, the two of them cooperated – Montagnier even provided Gallo with virus samples. But when it seemed that the Frenchman was about to win the race, Gallo

responded with an act of defiance. He declared himself the winner, quickly published the details of the virus he'd supposedly discovered – along with photos of it – and even registered a patent for a blood test. Gallo vigorously protested any hint that something might be amiss. But ultimately, it was proven that he'd not actually isolated any virus at all, and was only working with material that Montagnier had sent him.

How can a highly intelligent man decide to act so unfairly and to lie so outrageously? Because it's do or die. Science functions like sports. It's a race to the finish, and victory is all that matters. The winner takes it all. It's also about money, but most of all about honor. About getting your name in the history books. And about getting the medal. Yes, you also get medals in science – they're awarded every year by the Nobel Prize Committee, and they're highly coveted. Montagnier won it in 2008, together with his colleague Françoise Barré-Sinoussi. Gallo didn't get one. His foul play hadn't done him any good.

Justice doesn't always win out. The German-Swiss geologist Jean de Charpentier is largely unknown today, but he and two of his colleagues were the most important pioneers of the theory of the Ice Ages. In 1841, he published a comprehensive, carefully crafted essay on it. The problem was that his younger colleague Louis Agassiz had beaten him to it by a few months, despite having had to be convinced of the theory himself by de Charpentier. Agassiz published a sensational, hastily written book that barely took note of the contributions made by other researchers. But all that counted was that he'd got there first. Agassiz was quicker. That's why the discovery of the Ice Ages is still linked to his name today.

In fact, Agassiz's behavior was relatively demure. Some researchers are prepared to do absolutely anything to get the honor they crave. That's why the history of science is so rich in scandals, forgeries and plagiarism. This unscrupulousness knows almost no boundaries. Some professors pilfer the ideas of

their assistants, or they blacken their colleagues' names to such an extent that they cannot publish anymore. The 19th-century "Bone Wars" between two dinosaur researchers in the USA were particularly bitter. They would sneak fossil fragments into the other's dig so as to cause confusion. In one case, an archaeological site was even blown up so that the researcher in question couldn't excavate there anymore.

Malice abides

Regrettably, even the brightest scientists aren't above such seemingly petty behavior. In fact, it seems that it's precisely the greatest among them who are unable to accept anyone else as their equal. In the field of psychology, for example, we have the enmity of Freud and Jung, while microbiology offers the example of Koch and Pasteur. And math gave us Brouwer versus Hilbert.

There's hardly any scientist of importance who hasn't paid considerable attention to ensuring his precedence. The more reflective among them have at least struggled with their ambition and realized that it didn't fit the image of the modest scientist devoted only to the truth. "I wish I could set less value on the bauble fame, either present or posthumous, than I do," wrote even Charles Darwin, probably the greatest biologist of all time. Nor did he always play completely fair either – today he is regarded as the sole author of the theory of evolution, even though another man, Alfred Russel Wallace, had developed the same idea at the same time.

The most famous dispute about priority, however, was the feud between Isaac Newton and Gottfried Wilhelm Leibniz, which began in the mid-1680s and lasted for several decades. They had independently discovered infinitesimal calculus, which allows one to calculate planetary orbits, for example. Newton did it slightly earlier, but failed to publish promptly. When Leibniz published his own method, Newton seethed with anger, claiming that Leibniz had stolen his idea. Which he hadn't.

There were no holds barred in the dispute that followed. Newton might have been paramount as a physicist, but he resorted to particularly malicious means. A low point was reached when the venerable Royal Society acceded to his insistence to form a commission and decide the issue once and for all. The catch was this: the president of the Society was none other than Newton himself, which meant he could influence the case to his advantage. He not only picked the members of the commission, but even secretly wrote most of their report himself. It was no

wonder that its judgement was devastating for Leibniz. In this manner, Newton succeeded in partially ruining the reputation of his opponent, while he himself was showered with honors.

Battling new ideas

Disputes about precedence are just *one* manifestation of the bitter, emotional altercations that occur in science. Another is the dispute about new ideas. Here, too, it's ultimately about who gets his name in the history books. A typical case is when a young researcher comes on the scene with a brilliant theory that seems to wondrously explain a specific problem. According to general scientific practice, this idea ought then to be investigated objectively and – if proven fit for purpose – accepted.

But in reality, it's often the complete opposite that happens. Groundbreaking proposals are rejected lock, stock and barrel – often with ridiculous arguments. Thus the German meteorologist Alfred Wegener met with an icy reception when he presented his theory of continental drift in 1912. The experts were committed to the idea that the Earth's crust was fixed, and so rejected his concept as a figment of the imagination. It took 50 years for Wegener's theory to become accepted.

The problem is that new ideas often call well-loved convictions into question. People are not good at admitting: "Yes, you're right, I've been talking rubbish for decades." So they develop an irrational ambition to expose the smallest discrepancies in their opponent's arguments, which then allows them to hold to their own theories, even when these have long been proven untenable. This is why some philosophers believe that our intellectual capacity and our argumentative capabilities are not intended primarily to help us find the truth. Instead, they think they might be meant to bolster our sense of being right, so that we can amass power and keep it.

The physicist Max Planck experienced such situations several times, and once summed it up in words that are apt, if a little resigned: "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die." ♦

Mathias Plüss is a science journalist and writes for "Das Magazin" and elsewhere.