Humans are competitive beings ...

..., no doubt about it! Just think of sports, school, politics, business, economics... Apparently, competition is deeply rooted in our evolutionary heritage. Or, as one social scientist recently wrote, "Competition is one of the most basic functions of nature. Those best able to compete within an environmental niche survive. Those least well adapted die out. Competition remains a powerful instinctual drive in human nature. We compete for resources in the forms of food, jobs, living quarters and general status in society. We compete against each other, we compete against ourselves, and we compete as groups against other groups." No chance at all of evading this instinct, it seems.

So, what about science? In the early days there was almost no competition at all. People practising basic science were so rare and they followed such unique lines of questions that competition just couldn't possibly exist. Or do you know of any competitor to Mendel? Admittedly, there were people trying to solve similar problems, but were they *real* competitors? Even Charles Darwin and Alfred Russell Wallace, who indeed independently developed and explained the theory of natural selection, have never been perceived as competitors.

The winner takes it all, the second goes to the wall.

Those were the good old days. Since then, things have significantly changed – for two main reasons. Firstly, science has grown into an enterprise-like endeavour, the consequence being that an increasing number of scientists are, in principle, working on ever more confined topics and purchasing a scientific career has become much more difficult. And secondly, national political interests in scientific results (and their applications) have risen tremendously. Take, for example, the race to the moon, which clearly was a *scientific* "race" between the USA and the former Soviet Union. Or, more recently, deciphering the human genome sequence, which finally culminated in the famous "draw" between the worldwide publicly funded Human Genome Project and Craig Venter's private company Celera Genomics.

Even the latest Nobel Prize for Medicine tells another story of scientific competition. For years, there had been harsh disputes about who had really discovered the 'AIDS virus' HIV – the Parisians Luc Montagnier and Françoise Barré-Sinoussi, or Robert Gallo from the US. Since the dispute also involved the validity of powerful patents for AIDS blood tests, the case also turned into a major political issue. In 1987, US President Reagan and French Prime Minister Jacques Chirac finally agreed to share the patents and divide the royalties, proclaiming Gallo and Montagnier "co-discoverers" of the virus. The two researchers accepted the compromise.

Not so the members of the Nobel Assembly. They clearly judged the French researchers as the only HIV discoverers. In a statement they wrote, "What mattered most to the decision was the first discovery of the virus, not proving what caused AIDS or later agreements between the rival labs to share the credit and benefits."

Priority, therefore, appears to be the name of the game. Whoever presents the results first can expect to get all the glory. *The winner takes it all, the second goes to the wall*. And it's not just the minority who think that scientific progress would have advanced at a much slower rate, if it weren't for this kind of competition.

Of course, every now and then there are examples where, ultimately, two competing teams intentionally share priority. Sometimes the "slightly faster" team even waits a couple of weeks in order to publish the results "back to back" with the competitor in the same journal. However, these cases – as preferable as they may be – remain the exception.

All in all, there is no doubt that in recent decades the structures and demands for practising science have changed in a way that advocates competitive behaviour. However, this is obviously only one side of the coin. The flip side may well be embodied in the following memorable thoughts of Marshall Nirenberg, Nobel Prize winner in 1968, which he related at a recent meeting and which date way back to the early days of molecular biology.

Nirenberg recalled: while he was working on deciphering the genetic triplet code, he one day found out that Nobel prize winner Severo Ochoa had, meanwhile, also turned his efforts to solving the same problem. Nirenberg decided to propose a collaboration to Ochoa and visited him at his lab in New York. Ochoa took the whole day showing the young researcher around his lab, introducing him to his group and discussing research topics. Nirenberg didn't reveal why, but for some reason a collaboration never materialised. However, from that day on, it was undoubtedly clear to Nirenberg that he indeed had a mighty competitor. And he admitted, "Only a couple of days later I realised, to my own surprise, that I really liked the competition."

So it seems that even scientists are unable to elude the hidden powers of human nature.