

*A star scientist overstating the outcome of his pioneering transplant experiments may be worrying. But when these experiments are performed in humans, used a guinea pigs, before laboratory research proves their validity, we have a recipe for disaster. The recent Macchiarini scandal has led to one of the most shocking case of scientific misconduct in recent years. It reveals a lot about the vanity culture pervading some fields of research. Our outlook on what constitutes success in research may need to be revised.*



Published in [EuroScientist](#) via [SciencePOD](#).

## Macchiarini scandal: overstepping the research ethics mark



### Lessons from the story of a superstar scientists overstating his progress at a complacent research institute

It has taken several deaths for Paolo Macchiarini to be [found guilty](#) of scientific fraud and medical misconduct. He was the ultimate star surgeon, delivering the promises of regenerative medicine. He focused on building artificial trachea seeded with the stem cells of his patients.

However, his work, experts have since revealed, was closer to fiction than life-saving clinical treatment. In reality, his experimental research on what turned out to be human guinea pigs had no sound preclinical research foundation. Indeed, one of the issues, was that the vascularisation of such artificial graph has not been proven to work in the lab--let alone in patients.

To save or prolong life in the absence of any alternative treatment could have made such transplants medically acceptable. The trouble is that the life of the three patients transplanted in 2011 and 2012 at the Karolinska Institute Hospital was under no immediate threat. Two of the three have since died. And there were five other additional transplant of this kind, among others, at the Kuban State Medical University in Krasnodar, Russia.

If we give Macchiarini the benefit of the doubt, his intentions to treat patients were good. At least in principle. Except, that he had not fully been open and transparent about his academic and clinical track record, when the Karolinska Institute recruited him. Nor, did he strictly follow the expected good practice of both research and medical standards when he designed his new treatment of trachea regeneration and transplantation.

## Vanity culture

The vanity culture pervading research can partly help explain what happened; even if it does not absolve the researcher. Macchiarini appears driven by a motivation similar to that early scientific pioneers who experimented on themselves. Except, that he experimented on other people. And he did so without a sufficient evidence base from prior research to legitimately and ethically support his work. He simply overstepped the research ethics mark.

He wanted to go jump ahead, directly experimenting with patients. He had an ego that was a little too keen on receiving the media exposure. A star scientist, like few others. In the end, it was a TV programme, called [The Experiments](#) aired in January 2016 by the Swedish public broadcaster SVT, that triggered his downfall in March 2016.

The scientific community's own safety nets had not been sufficient to stop him, despite the presence of repeated [red flags](#) from colleagues and [reviewers](#).

Now, his personal responsibility is not to be excluded. But, clearly, the Macchiarini scandal has revealed the responsibility of [his institution too](#). Its [appetite for the positive publicity](#) associated with Macchiarini's pioneering treatment is not to be underestimated.

## Fast-tracked translational research

This scandal debunks a number of myths, reversing the stereotypes between Northern and Southern Europe. It opposes a scientist originally from Italy whose career progressed tremendously as he was working in Sweden, at one of the most prestigious Universities in Europe. This happened, of all places, in a country which epitomises the Scandinavian sense of [transparency and trustworthiness](#). And yet, had Macchiarini stayed in his own country, he would, arguably, have been found out sooner. As he had previously been banned from being recruited as a professor in an Italian university.

What the Macchiarini scandal also reveals is that the [culture of research](#) at the Karolinska Institute was such, that the pressure to translate clinical research into actual treatment has had some [serious consequences](#). One of the reports published in the wake of the scandal, known as the Heckscher report, denounced Karolinska's "fixation on excellence" and a "[nonchalant attitude towards regulations](#)".

This case is symptomatic of an era of superstar scientists, who are familiar with media spotlight. These attract the attention of research institutions vying for high-profile research likely to bring positive publicity. Before the rules of showbusiness start impacting the way research is conducted, it may be worth remembering that giving due consideration to [sound ethical practice](#) may help to avoid future scandals of this nature.

However, turning the vanity culture into a culture of integrity will require more than just tightening the rules for institutions and individual scientists alike--as proposed by Karolinska. Now is the time for a discussion on the way the research community evaluates and assesses research, to [strive towards greater scientific quality](#). Change will inevitably necessitate a shift in our conception of what makes research successful.

Sabine Louët

Editor EuroScientist

Photo credit: [SVT, The Experiments](#)