

Editorial

Science needs passion – science is passion – science gives passion

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I visited last week the University of Cambridge in England for a conference and also to see the University itself. Naturally, this must be inspiring for any scientist to be at one of the best universities worldwide and one with such long history. This is like to be at Olympia for a sportsman. Cambridge even provides throughout the town that kind of spirit and is picturesque with its ancient houses and places. The city simply is the university and vice versa. Pivotal work was done here – to imagine that Isaac Newton worked here and – yes – really existed, crystallizes amorphous excellence into personality. It shows how far one can go with the right excellence and passion.

This week I am in Thuringia, yet on another conference. Weimar is close by and then my mind flows to the classical period of German literature at world-class level with Goethe and Schiller as eminent pillars. Once more I have the feeling to dissolve into the universe and that all is made for a good reason. I am glad that we scientists have one of the best jobs around – one which needs passion and gives passion and thus is passion.

Passion is a “rare earth” meaning a really special thing. This has the nature to be constantly endangered and we slowly seem to lose such precious thing. Alike the rain forest which is so much needed and which we nonetheless do not give the respect and protection it deserves. Why? Because we have other interests which we finally rank higher, most of all relating to commercial interest which we think is crucial for our survival.

Why mentioning this? I think science and scientists are also a bit endangered. At least, science done in true passion might be so. There are several threats which Isaac Newton possibly did not have (not meaning that he had an easy going life, as life never was easy on this planet): Some relate to the ever growing information exchange, tangible for example by the several thousands of emails we receive per month. This flashed information speed is certainly also to our advantage. I am not sure how many manuscripts Newton published, but probably not more than 400. That would nowadays not anymore an exceptional outcome of a prolific scientific life. Yet, there is an ever growing need for documentation, to make

information “open access”, and to facilitate evaluation of one’s work. Quality management has changed the way we are working. That bears, however, the danger to change from a passionate to a bookmaker.

Thus, first danger relates to a dominance of supplementary actions related to project management and science administration within an environment which is highly regulated. Second danger is that science needs funds and ever needed. Personnel and instrumentation is very costly. Despite all claims for the better, basically all kinds of funding are reduced and actually are much reduced. I feel it is more than ever done and certainly more than incremental, as funding rates of 5% and below clearly give a warning signal. For most researchers funding of their science meanwhile has become a lottery and tragedy. There are really successful groups still with a large number of PhDs, yet the opposite seems to become a trend. I foresee that several professors will have only a small group of about 5 PhD and universities have started to consider new ways to structurally organize their departments and groups. While this might lead us also to new opportunities, I feel we leave a lot of potential unreleased.

As a third danger, I see the scientific freedom and uniqueness decreasing, by having to follow increasingly boundaries set from the outside. Research has to prove to be beneficial for our society and environment and follow respective advices of commissions and authorities. Boundaries are set concerning what industry regards essential for their future business. This orientation to the needs of mankind is naturally *per se* a good action and we are obliged to pay back to those financing and trusting us. Yet, a good number of current sustainable and industrial objectives are multidisciplinary and oriented to the near future. Again as such this is welcome, but one outcome might be also that the research demanded is narrow-ranged and not of highest risk-challenge. I feel that an increasing number of funding calls hardly match to single excellence to which the researcher is centered, but rather asks for holistic goal. Again, this is as such neither good nor bad. Nonetheless, I feel sometimes to be a 100 m specialist who is forced to undergo a decathlon (as 100 m races are banned from Olympia) in which I like some of

the other disciplines, while am not so happy about the others.

Concerning the last point, is passion not only possible at a 100% level? I feel passion needs fascination and an undoubted commitment. Yet, I might be romantic.

I am not sure if the threats will finally have a main impact to us as scientists. That should not be straight away the message of this editorial. I just feel that I am pushed away too often from the essential science reflection and action. I am not sure how much Isaac Newton was pushed away. Only one thing is clear to me that a scientist in the 1980s when I started my career had less external forces to cope with and was less forced to show steady impact, as e.g. very evident from the much increased publication intensity. Thus, in this sense, scientists have become, even under increasing time constraints, more productive and effective. Naturally, there is a limit for such optimization. Yet those who make us the threats believe we have (by far) not reached such limit. I do my part to make clear

that this might be wrong conclusion – to towards funding agencies and whoever is in charge of decisions affecting us. I got understandingful feedback. From colleagues, however, I hear often nothing can be changed and this is to be accepted. I think any decision by human beings can be changed and can change. History has shown this. Thus, let us work on preserving the rain forest!



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