

Sciences and Humanities: Different Worlds?

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If I may, I would like to begin by introducing myself. I studied chemistry at the Faculty of Science at Charles University in Prague and got my PhD degree in biology and later my doctorate of science degree in physiology from the former Czechoslovak Academy of Sciences. For a long time, my special field of interest has been chronobiology.

I enrolled in Charles University in the late fifties of the last century, during the period of the totalitarian communist regime in my country. Although I was initially attracted both by science and the humanities, I choose science since the humanities were very much under communist ideological pressure. Only later I found that even science had been influenced by the regime, though not to the same extent as the humanities. For example, cybernetics and modern theories of a chemical bond were not taught and genetics had been forbidden. In the city of Brno where Gregor Johann Mendel developed his world-renowned laws of genetics, a professor of genetics was even sentenced for teaching genetics.

I have never regretted my choice since science is beautiful and has given me a lot of professional pleasure. In science you ask a question, get results, interpret them and immediately another question arises. It is like being a detective on the right track. Nevertheless, I have always had a longing for the humanities: to know more about history, especially about literary theory, about philosophy, et cetera. This longing for the humanities may be one of the differences between scholars in science and those in the humanities: whereas the former may be interested in the humanities and consider them part of their life, the latter may not feel any need of science.

In recent years, I have had an opportunity to get a broader view of the two realms as Vice-President and now as President of the Academy of Sciences of the Czech Republic which encompasses both science and the humanities. I will briefly summarise my personal view of characteristics, which science and the humanities share, and at the same time in which they differ.

First, science and the humanities differ in the subject of their studies and methodologies used. Whereas the subject in science is rather concrete and instruments for its solution are experiments, observation, calculation and modelling, the subject in the humanities tends to be rather abstract and logic

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contemplation and thinking may serve as instruments. However, both science and the humanities share a quest for knowledge and the truth, defining and tackling a problem, a question, and trying to resolve it.

Second, science and the humanities may differ in their language. Various branches of science have their own language which is usually understandable only to scientists from the same community. While the humanities may also have their own language, this language is usually more communicable to the lay public. Moreover, scholars in the humanities, in disseminating their knowledge, often create a work of literature. Hence scholars in science should learn from those in the humanities how to make themselves more comprehensible and how to disseminate their findings and knowledge to public.

Third, science and the humanities may differ in credibility; the humanities are more vulnerable to political pressure. Credibility of scholars in science is based rather on true, repeatable results be they presented in graphs, statistics or pictures rather than on words and interpretation. The results speak for themselves. On the other hand, scholars in the humanities need to be exact in their wording, expression and interpretation, as it is the word itself which makes them credible in their own community. This need for the exact and mostly also for literary expression is probably the reason why, in my experience, scholars in the humanities prefer to read their papers at conferences whereas scholars in science tend to extemporise. It is obvious that science and the humanities share one ultimate necessity: credibility of the scholars in their own communities and in the whole society. But science and the humanities also share a danger. Results of scholars in science may be misused if society is not democratic, and theories of scholars in the humanities may be dangerous to society.

Fourth, scholars in science may have a profound understanding of just a narrow problem and, therefore, may need a broader view provided by the humanities. On the other hand, scholars in certain realms of the humanities may need to know the latest discoveries in science, such as in physics, astronomy and biology so that they may better understand the origin of the universe and life and comprehend the world.

Fifth, science and the humanities may also differ as regards the distance between the scholar and the object of his inquiry. In science, the two are separate, the researcher is external to the reality he tries to understand. He can view it in a detached, objective way. In the humanities the distance is much narrower, sometimes it can almost disappear. The humanist scholar is himself a part of the society, culture or mankind that he tries to understand

and is, therefore, susceptible to prejudices, ideologies and values shaped by his social and cultural environment. However, even in science society may intervene, at least in the choice of research priorities and use of the findings.

Before I conclude, I would like to read you a passage from the book, *The Absolute at Large*, written by the renowned Czech playwright and novelist, Karel Capek. Besides many other works, Karel Capek also wrote the world-known novel *The War with the Newts* and in his play *RUR* he invented the word 'robot'. He died untimely aged 48 in 1938. The *Absolute at Large* is about a generator which, besides electricity, also generates various types of deity, the 'Absolute'.

The passage goes: "Yah, and at the university", continued Mr Kéval in a whisper, "today the Faculty of Science had a battle with the Faculty of History there. You see, the Faculty of Science denies the biblical Revelation, it is somehow pantheistic. The professors were in the lead with Dean of the Faculty of Sciences Rádl himself carrying a banner. The historians besieged the University Library at the Prague Clementinum, and they defended themselves desperately, mainly with books. Dean Rádl was hit on his head with a bound volume of the Botanical Herbarium and he died on the spot; most probably a brain concussion. The literary historian Magnificus Arne Novák was seriously wounded with a single volume of Discoveries and Progress. Finally the attackers were showered by the historians with the Collected Works of William Shakespeare. Now diggers are working there. So far they have dug up seven corpses, three associate professors among them. I think not more than thirty are buried now."

So far the passage. I hope that such relationships between science and the humanities will never develop. I firmly believe that science and the humanities are children of the same 'mother' - the human quest for knowledge and understanding the world around us and thus they need and complement each other.