

collection of scientific works. Kyiv : H. S. Kostyuk Institute of Psychology of the National Academy of Educational Sciences of Ukraine, pp. 40–52.

DOI <https://doi.org/10.30525/978-9934-26-397-2-53>

## **PROBLEMS OF INTEGRITY IN SCIENCE**

**Anatolii Yareshko, Maryna Kulish, Alla Vorodyukhina**

*Poltava State Medical University*

*m.kulish@pdmu.edu.ua*

Today, the research of complex scientific problems, as a rule, is not carried out by individual talents, but by teams of scientific research laboratories, institutions in which different methods of scientific research must be performed simultaneously. For this purpose, teams of employees are formed who are able to perform technological tasks with high quality. It is difficult to imagine that at the same time it is possible to gather honest, fair, trusting, responsible employees who know how to respect and appreciate the research contribution of each member of the team. But, as a rule, in such teams, employees have different levels of qualifications, intellectual training, practical skills and education. Under such conditions, conflicts may arise when determining priorities or the share of research contributions. Such problems are often resolved by agreement. But the history of science preserves other options. Thus, in March 1882, after an unsuccessful attempt to discuss the results of his research with the most authoritative scientist of that time, R. Virkhov, the little-known German microbiologist Robert Koch gave a report at a meeting of the Berlin Physiological Society on the topic "Etiology of tuberculosis", in which he convincingly proved that the causative agent of this disease are mycobacteria, giving a description of their structure, physical and biological properties. The validity of

the results of the conducted research were so convincing that the Union of Physiologists recognized the discovery of the causative agent of tuberculosis and even named the bacterium itself "Koch's bacillus". This decision of the union on the priority of discovering the etiological factor of phthisis by R. Koch was immediately contested by his compatriot Baumgarten. Who stated that he had made a publication a week earlier, in which he showed that the bacteria secreted by the sputum of patients with phthisis, he found in histological preparations of the livers of experimental animals that died after being infected with their sputum. It must be admitted that the priority of discovering the causative agent of the disease, from which at that time almost every 3-4 people died, was prestigious, and Baumgarten appealed to the court, which, after considering the evidence of scientists, confirmed the priority of the discovery by R. Koch, who was later awarded the Nobel Prize, in a court decision awards The history of the development of science preserves other variants of debatable issues of the priority of discovery. Thus, in December 1895, V. Röntgen wrote the article "On a New Kind of Rays", in which he announced that he had discovered previously unknown x-rays. V. Röntgen did not have any publications prior to this article. Back in 1882, Viennese professor Ivan Polyuy first constructed a gas-discharge cathode tube ("Polyuy lamp"), which already had all the main components of a modern X-ray tube and emitted x-rays, with their help he took photographs and studied the gas-discharge properties of cathode rays, which 14 years later will be called X-ray. The results of I. Polyuy's research were public and, without a doubt, V. Röntgen knew about them, they corresponded, but in none of the three publications on x-rays, V. Röntgen did not mention the work of I. Polyuy. The fact that V. Röntgen ordered to destroy all documents after his death, including scientific and personal correspondence, is also suspicious. V. Luftlia, noting the achievements of V. Röntgen, wrote in the article "Who discovered X-rays" "...for the sake of historical truth, it must be stated that it was the Austrian I. Polyuy who discovered X-rays before Röntgen." Similar information is spread on the Internet about the spiral structure of DNA, which was proposed by D. Watson and F. Crick, after

receiving the results of X-ray structural analysis of DNA, which was conducted by Rosalind Franklin. This is not why the high award was devalued so much that one of the laureates sold the Nobel medal. These stories about scientific discoveries are evidence of how difficult it is sometimes to determine priorities, especially if behind them are big money, fame, recognition and social significance of a scientist, it is better not to mention virtue as a category of morality. Often, scientists become vulnerable, especially to employers who can appropriate the intellectual achievements of employees. Under such conditions, integrity does not have the power of protection, this function must be performed by an independent regulatory and legal structure.

DOI <https://doi.org/10.30525/978-9934-26-397-2-54>

## **SCIENTIFIC MISCONDUCT: THE MAIN TYPES AND BACKGROUND**

**Nadiia Yurko, Yuliia Kalymon, Mariia Vorobel**

*Ivan Boberskyi Lviv State University of Physical Culture  
nau40279@gmail.com*

**Introduction.** Nowadays, the scientific environment is steadily growing more competitive, hence scientific misconduct has become a matter of consideration to everyone in the academic context. Scientific and academic misconduct is increasingly being noticed today. Even though there are many scholars who are genuinely dedicated to the highest standard of ethics, there are some others who employ scientific misconduct. This may not only result in a scepticism to the publication process, but it also has destructive effects on the area of science in particular and the community in general.

**Results.** Mainly, there are some patterns of scientific misconduct, the implications of which can influence the professional scientific