

EDITORIAL: ABOUT CYBERNETICS AFTER 70 YEARS OF ITS EXISTENCE

70 LET PODIVNÉ VĚDY

Rozhovory s našimi kybernetiky



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Česká technika [Czech Technology] the publishing house of the Czech University of Technology in Prague, has issued a publication entitled “70 let podivné vědy” [70 years of a strange science], with the subtitle “Rozhovory s našimi kybernetiky” [Interviews with our cyberneticists], as a reminder of the fact that seventy years have passed since the year when the book called “Cybernetics” was published by Professor N. Wiener.

His book substantially affected the view of general principles of control, the methods of solution of complex problems of our world, and contributed to establishment of many different new branches of science. The contributions of the individual authors included in the present publication provide information about the impact and progress of the cyber science, both in the past and in the present, as well as about cybernetics learning and use in their own work. The editorial team of the present publication V. Mařík – O. Štěpánková I. M. Havel have managed to collect 23 such contributions from persons who are all active in the field of cybernetics. Their texts are interlaid with sketches by our leading expert in cognitive robotics, Doc. Ivan M. Havel.

The contributions included in the present publication document the paths of progress of the cyber science in our country as well as across the world. They document that people in our country followed the current trends of cyber science evolution even in the

times when the official representatives of the totalitarian communist ideology within the Soviet bloc declared it a bourgeois pseudoscience. At present one can notice a different trend, wherein the prefix “cyber” is often only used as the means of making a phenomenon or activity a “modern” attribute of the contemporary super world. When in addition you realise that some of the methods and approaches of cybernetics are not trivial, i.e. generally known, and a lot of people in the current hasty times are unwilling or have no opportunity to spend the time needed to get acquainted with them, you can easily understand why some people see cybernetics as a “strange science”!

The editors of the present publication submitted to the authors of the included articles a list of 9 motivation questions as a help for preparation of their contributions. The last of the questions was: “What further development of cybernetics do you expect?” Most of the authors agreed in that the development and progress of cybernetics would continue, that the ideas defined by the founder of the cyber science in his book hid a great potential and would be subject of further scientific research and practical applications. They especially expected “renaissance and rediscovery” of cybernetics through the national concept of the Government of the Czech Republic “Industry 4.0”, where cyber-physical systems represent the basic concept of digitalised manufacture. The individual authors describe in their contributions how they first came across cybernetics, what has been the subject of their cyber research and how they have applied the cyber science in their practical work, including the comparison between how cybernetics was applied by them in the past and how it is applied now. They talk about their perception of the current position of cybernetics and its expected future, including problems they see in this area. The areas in which the individual authors are active include both traditional technical cybernetics (such as industrial automation and robotics, informatics, microprocessor technology etc.), and new areas (e.g. artificial intelligence, machine vision, expert systems, neuron networks etc.), including untraditional applications of the cyber approach for example in biology, history, medicine, physiology, neurology etc.

The variety of the included contributions shows the current broadness of the cyber science and its applications and impact. This may help even readers that have not yet had a chance to get acquainted with cybernetics in detail to more easily perceive the current cybernetics, to orient themselves in its traditional and untraditional application areas and thus to understand it better. The authors of the published contributions include personalities such as Professor Kevin Warwick of University of Reading, England, holder of the Doctor of Science degree granted by the Academy of Science of the Czech Republic, and supervisor of doctoral theses of bio-cybernetic students of the Faculty of Electrical Engineering, Czech University of Technology in Prague, in 2008-2012, Professor Vladimír Mařík, founder of the Cybernetic Institute in Prague (CIIRC), Professor Vladimír Kuěra, long-term president of the International Federation of Automatic Control (IFAC), as well as representatives of the cyber science from the Slovak Republic, for instance Professor Josef Kelemen, who lectured at MIT U.S.A., the place where Professor N. Wiener had worked for years, or Professor Petr Sinčák, co-founder of the Slovak Society for Artificial Intelligence.

The publication also includes a contribution by Mgr. V. Dulíkov and Ing. R. Mařík, who present results of their research abroad followed by a detailed description of successful application of cybernetics in Egyptology in this Czech publication. Their contribution

document the appeal of cybernetics on young contemporary scholars who are able to successfully develop its principles and scientific procedures in fields of science where use of cybernetics was not originally expected.

Following the book *Kapitolky z historie kybernetiky* [Chapters from history of cybernetics] published in 2013 by J. Romportl this is a new publication with cybernetic theme appearing on the Czech book market after a rather long pause.

The book, which, unfortunately, for technical reasons, was only published at the end of 2019, can be bought in the bookshop of the Dejvice campus of the Czech University of Technology, on the ground floor of the National Technological Library, in Technická street no 6. You can also order it via the university e-shop on: <http://eobchod.cvut.cz>

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