



ACADEMIA ENGELBERG

Media Release

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15th Dialogue on Science - 'At the Limit' - Successfully Concluded

Boundaries must continually be overcome!

Not only research and science, but also industry and the service sector continually face boundaries that need to be overcome. Sometimes, this happens quickly, but in many cases, it can take years. At Academia Engelberg Foundation's 15th Dialogue on Science, various examples were presented and intensively discussed.

Over the past three days, some 120 participants were given an insight into examples of limits in science, medicine, philosophy, computing, production, the working world, and in social life and how they were broken down, in an intergenerational and interdisciplinary dialogue. Young scientists who had prepared three presentations at summer school were given a special platform. Maria Kliesch, University of Zurich, Harshal Kate, Indian Institute of Technology, Mumbai, and Evangelos Ioannidis, Aristotle University of Thessaloniki, together with Morteza Nikrawan, Amirkabir University of Technology, Tehran, presented their thoughts on decision-making, the struggle between human and artificial intelligence, and the momentum of 'now'.

Challenges for industry

Motors in robots, machines, and aviation must continuously become smaller, lighter, more powerful, and more durable. Dr. Ulrich Claessen, Head of Research and Development, described how high-tech company Maxon Motor in Sachseln asserts itself in the global market with ever new developments. Their smallest motor is 4 millimeters in size and is used in implants for insulin pumps. IWC Schaffhausen faces completely different limits in its production of watches. The global economy, changing fashion trends, and production costs significantly affect the production of watches. Nevertheless, the innovation opportunities in the watch sector are not yet exhausted, according to Ronald Jäger, Head of Production at IWC. Among the challenges for the company are the use of new materials and the production of personalized watches. Matthias Kaiserswerth, former head of the IBM Research Center in Rüschlikon, showed how big data will revolutionize industry. Quantum computers become adaptive systems that work like neuronal networks and independently perform tasks. The cooling of the computers, which currently accounts for 98% of energy usage, and the construction of stackable and therefore more powerful processors remain unsolved problems.



When work and leisure merge

The new information technologies also change our working world. Deregulation and globalization lead to more flexibility, which also changes the way we work. The consequences are changes in working hours, place of work, workforce qualification requirements, dealing with new technologies, as well as in the employees' social and emotional attachment to the company and to their work environment. Many employees benefit from greater freedom and increased flexibility in their work arrangements. However, this could also yield negative consequences such as a culture of round-the-clock availability and lead to self-exploitation. To counter these risks, employers must establish sustainability-oriented personnel policies.

“We must rethink things!”

Professor Michael Braungart, the inventor and advocate of the Cradle to Cradle® design concept, called for a completely new approach to production and to the use of goods and services. He strongly urged the business sector to develop products and production processes that avoid all waste of resources. Products like cars, books, and smartphones should only work in materials cycles, which means that there are only useful raw materials. He used the smartphone, which contains 41 different chemical elements of which only nine are being recycled, as a warning example. His concept paves the way for a new economic system in which innovation, positivity, quality, and creativity are central. The fact that this works is evidenced by several hundred different products like textiles, furniture, or cleaning products that were developed according to this principle. True to his concept, during the discussion he called for the redistribution of work. People should work as long as they are healthy. One-third of working hours should be allocated to social activities for the person to also actually be useful with what s/he does.

Legal and ethical limits in medicine

Prof. Andrea Büchler of the University of Zurich illustrated the dilemma of how restrictive Swiss law lays behind social reality in reproductive medicine. As a consequence, many couples travel abroad for certain procedures. However, not everybody can afford this! Valdo Pezzoli, MD, MSc, of the Lugano Regional Hospital demonstrated the limits in the treatment of premature births. Thanks to the high standards in medical technology, treatment in Switzerland is at a high level, but there are still limitations associated with treatments. Unlike before, nowadays parents are also included in the decisions about the type of treatment. Rodine Hendrickx of the University of Zurich addressed the complications for joint research projects at an international level due to different sets of regulations: “Animal testing plays a central role in genetic cancer research. In Scandinavia, it is significantly easier to obtain the required permit than in the Netherlands or in Switzerland. This considerably hampers cross-university research.”



Academia is pausing for thought

At the conclusion of the conference, Hans Groth, President of Academia Engelberg Foundation, thanked the 120 participants for their active involvement. He encouraged them to share with their network their newly gained knowledge and experiences as ambassadors of the scientific congress. He announced that the 18th Dialogue on Science would not take place until October 2018. The resignation of the Foundation's Vice President and Managing Director, Dr. Dominik Galliker, will be taken as an opportunity for a year of reflection. The Board of Trustees will use the coming year to examine how this successful work could be further developed. The focus will remain on the transfer of fundamental scientific insights as a contribution to a better society. Academia Engelberg will hold various events in 2017. On May 30, 2017, a panel discussion about what entrepreneurs could learn from Brother Klaus will take place at the University of Lucerne.

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A Bridge between Science and Society

Basic findings from science frequently meet with strong reservation and suspicion among the general population. With its interdisciplinary dialogue, the Academia Engelberg Foundation contributes to the building of a new foundation of trust between science and the public at large. Each fall, personalities from science, business, culture, politics, and society meet for a scientific dialogue in Engelberg, Switzerland. The congress in the monastery village of Engelberg provides a platform for interdisciplinary and intergenerational exchange, networking, and for jointly exploring the boundaries in various areas. Additionally, projects resulting from the outcomes of the conferences are realized and in-depth follow-up events are organized. For further information: www.academia-engelberg.ch.

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Note to members of the media: [pictures and some videos \(presentations\) from the conference are available on the website](#). For additional information for members of the media, please contact Beatrice Suter, KommunikationsWerkstatt, ph. +41 (0)79 211 10 44, media@academia-engelberg.ch