

Conference Report

HUMANS IN OUTER SPACE – INTERDISCIPLINARY ODYSSEY

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Agnieszka Lukaszczyk

An interdisciplinary approach in discussing the human presence in outer space was undertaken on 11/12 October 2007 by the European Science Foundation (ESF), European Space Agency (ESA), and the European Space Policy Institute (ESPI). The "Humans in Outer Space - Interdisciplinary Odysseys" conference was organized along with space experts and scholars from the area of humanities as well as social sciences discussed the roles various disciplines such as law, philosophy, ethics, culture, art, psychology, increasingly will play in space exploration. The output of the conference was developed in form of the *Vienna Vision*, which provides a unique European perspective in identifying various needs and interests of humanities and social sciences linked with space exploration. This report presents the goals and an outcome of the conference as well as it describes the analysis, which led to the creation of the *Vienna Vision*.

This year Space age has reached its 50th anniversary, which allowed for reflections on what has been accomplished until the present. In addition, the anniversary urged for planning for the future. The timing was of importance to the conference due to the specific topics and the ideas that were discussed as well as the conclusions that were drawn.

Humans have advanced a great deal since 1957. The space era has led to the development of robotic exploration to other planets and bodies across the solar system. Human presence in space as well as the landing on the Moon marked the beginning for resolute long-term space exploration. It is no longer focused on merely technological attempts, as already today its development has a great social, cultural and economic impact. Space activities are now entering an era where the contribution of the humanities - history, philosophy, anthropology, the arts as well as the social sciences - political science, economics and law - will become essential for the future of space exploration. Finally, the attentiveness for the societal complexity of activities in space is growing internationally.

21 international speakers discussed the importance of Europe, with its strong roots in natural sciences as well as its identity ingrained in the humanities and the social sciences, to take the opportunity to involve their knowledge and resources in the long-term planning of exploration endeavours. This conference was co-organized by the European Science Foundation (ESF), the European Space Agency (ESA) and the European Space Policy Institute (ESPI) and was co-chaired by Luca Cordiniola, Professor at the University of Genoa, and Kai-Uwe Schrogl, the Director of ESPI.

The meeting was the first comprehensive interdisciplinary dialogue on humans in outer space. It went beyond regarding humans only as tools for exploration of distant planets. It examined the human quest for odysseys into the outer space and it reflected on the possibilities of finding extraterrestrial life and various implications that may bring.

The conference consisted of 2 fruitful days filled with dynamic discussions and interesting presentations. The first day gave a brought overview of the issue at stake through presentations and talks of Luca Codignola, Kai-Uwe Schrogl, Peter Jankowitsch, Monique van Donzel, Jean-Claude Worms, Gerhard Haerandel, Thomas Ballhausen, Agnieszka Lukaszczyk James Muldoon, Gisli Palsson, Olivier Francis, Ulrike Landfester, Edi Keck, and Nicolas Peter.

The second day was divided into three sections - *three odysseys*. Each *odyssey* was made up of four parts, which in detailed illustrated the importance of each *odyssey* itself. The interdisciplinary approach, which was utilised throughout the conference when examining the future of space exploration, contributed to a unique discussion, which prompted many relevant questions while it shed a distinctive light on the topic of humans in outer space.

First Odyssey evaluated the presence of humans in the Earth orbit and thus consequences of it. Planet Earth was looked at from a different angle. It was treated as a *home* to all humanity; thus, it reinforced the need for care and protection of the planet. Claude Nicllier, Richard Tremayne Smith, Gabriella Cortelessa and Frans von der Dunk contributed to this part. The question of identity was brought up, as once in space humans are most likely to identify with Earth as a whole instead of the specific country, region, etc. The idea of *progress* was discussed, as it is often associated with travelling to the Earth's orbit. It was illustrated that the high technology and the need for innovation are often inspired by human space flight. More than that, the various spin-offs are often beneficial for society at large and can facilitate further research; thus, promote science. In addition to the technological progress a social progress was discussed. It was underpinned that space exploration offers many possibilities for international cooperation through endeavours such as the International Space Station (ISS). Mutual understanding and teamwork are crucial for successful space mission and perhaps could promote further collaboration on Earth.

Technology in itself was an important part of the *First Odyssey* as humans continue to increasingly depend on various technological advancements, which brought up the issue of human – machine relationship and how it can change/ evolve with time. The legal aspect of human space flight was not be neglected. The importance of *law* was discussed, as with the further space exploration the need for development of the space law will become necessary in order to cultivate the peaceful uses of outer space. More over, human rights were also considered as perhaps new moral challenges may face humanity in the future.

Second Odyssey focused more on the various effects space exploration may have on humans. The speakers: Wolfgang Baumjohann, Jacques Arnould, Stephan Lingner and Ulrike Bohlmann offered a great illustration of the subject matter. It was argued that the *human factor* is essential in space exploration. It not only fosters the collaboration among societies and cultures but it also opens up the opportunity to follow the thrust of scientific and cultural curiosity. The need for *discovery* has been an essential part of human evolution and it is precisely what continues to inspire humans to explore new places and search for new worlds.

Conference speakers recognized that human space flight would very likely have an effect on the various aspects of *culture*. Through regional cooperation European values and priorities may be redefined and perhaps strengthened. The generation, which has grown up in the space era has already had a different outlook on world and for instance the environment in comparison to the past generations.

Third Odyssey was more of a philosophical nature. It concerned humans leaving the Earth permanently; hence, migrating to distant planets. The question of how would that effect the human thought was posed. Presentations by Gerda Horneck, Paolo Muss and Debora Battaglia contributed to the discussion. The idea of *habitat* was examined due to the fact that once leaving the Earth humans would have to establish settlements elsewhere. First children would be born in space, thus, true space generation would be established. These experiences would require adaptation to the new *environment* as life would most likely very much differ from the one on Earth. While considering the mentioned issues, the participants of the conference, felt it was important to reflect on the matter of the belief systems. The environment humans are surrounded with often alters the scheme of faith, religion, morals, or values. Would some of these systems collapse if humans would permanently leave the Earth? Would new systems of beliefs develop? The answers for these questions and more were searched for during the conference. The discussion was further instigated by the thought of possible *encounters* with other forms of life in outer space. A new chapter in the human history would begin should humans discover they are not alone in the universe.

The conference opened a door to a very much needed dialog, concerning human space flight, among distinguished scholars coming from variety of disciplines. Such dialog has been necessary in order to make societies aware that the space exploration involves much more than the high technology and the science in order to be successful. To illustrate the findings of the conference in a concise document an output was produced in the form of a *Vienna Vision*. The goal of this vision is to provide a European perspective in identifying the relevant needs and interests linked with space exploration. It has been presented to several European and international audiences, in order to make it a useful element for the position-building and decision-making process. To be more specific, Agnieszka Lukaszczyk (who lead the organization of the conference) and Nicolas Peter presented it on the 24 October 2007 at the 9th International Lunar Exploration Working Group's (ILEWG) International Conference on Exploration and Utilisation of the Moon (ICEUM9/ILC2007) in Sorrento, Italy where it received a very positive feedback.

Only a week later, the "Vienna Vision on Humans in Outer Space " was also highlighted at the International Space Exploration Conference co-organised by ESA and DLR in Berlin 8-9 November 2007 where about 300 space policy stakeholders, including head of space agencies gathered. Jean-Claude Worms Head, Unit for Space Sciences at ESF, as well as Gerhard Haerendel, former President of the Committee on Space Research (COSPAR) and currently Chairman of ESA's Advisory Committee on Human Spaceflight, Microgravity and Exploration mentioned in their presentations the major ideas and elements of the "Vienna Vision on Humans in Outer Space" in two different roundtables providing therefore a unique forum allowing to put forward the ideas developed in the document, which can be found [here](#).

