

"The Future Human" Workshop Report

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Abstract

This summary provides an overview of the Foundation For the Future's workshop on "The Future Human," held in November 2002 at the Foundation offices in Bellevue, WA. "The Future Human" is the anticipated title of one program of the Foundation's four-part television series The Next Thousand Years. The purpose of the workshop was to provide scholarly input to facilitate production of one program in the series.

Background and Purpose of the Television Series

The Foundation For the Future's first major television series, *The Next Thousand Years*, is an outgrowth of *Humanity 3000*, an international seminar and symposium series created by the Foundation in 1998. *Humanity 3000* brings together some of the most prominent thinkers on our planet each year to discuss and debate the critical factors that may have the most significant impact on the long-term future of humanity. Some 150 scholars from around the world have participated in these seminars, workshops, and symposia.

In the process of reviewing the videotaped conversations of the *Humanity 3000* participants, it became evident that the scholars' ideas and their views of the thousand-year future of humanity would make an exciting, educational, science-based television series. Advances in scientific fields as varied as genetics, cosmology, medicine, nanotechnology, robotics, biology, and ecology continue to push back the frontiers of knowledge. These advances are allowing humankind to project trends and speculate about the future with a greater degree of con-

fidence than ever before. Starting with an informative grounding in the latest relevant developments in various scientific fields, the programs in the series will present a rational approach to examining the various alternative futures that might be possible.

The purpose of the series is to help an informed public engage with the drivers of change, to understand the wild cards that threaten humanity's survival, to explore the moral and ethical issues surrounding choices we make, and to examine our ability and responsibility to manage the future of our species. So far, 75 scientists, social scientists, futurists, and other scholars from various parts of the world have agreed to participate in the development of *The Next Thousand Years* series.

The Foundation convened in April 2002 the first Producers Workshop to enable scholars and television documentary producers to discuss the envisioned content and how to create effective television programs about it. With that input, along with suggestions of numerous scholars who reviewed the early drafts of program sketches, the Foundation restructured the series from eight episodes to four one-hour programs, which are expected to air in 2006.

Purposes of the Workshop

The workshop convened by the Foundation in November 2002 was focused specifically on the content of one program, "The Future Human." Nine experts in the sciences and futures studies were brought together and asked to discuss, based on their research, what humans are likely to become in the upcoming centuries. The Foundation's objective was to enable the series Executive Producer to learn from the discussions and to have the opportunity to question the scholars at length about specific scientific and technological advances, and the possible impacts to humanity of those advances. The expected outcome of the meeting was that the Executive Producer would obtain the material required to develop the content for the program.

Participant Selection Process

Scholars were selected for participation in "The Future Human" workshop based on a high level of expertise in scientific fields related to genetics, germline engineering, medical science, biochemistry, neuroscience, and critical technologies that have bearing on the long-term future of humanity. The daily work of the invited scholars focuses on cutting-edge scientific research and uniquely qualifies them to discuss how humans may evolve in the next thousand years as our species begins to defy its biological limits.

The nine scholars who were participants in "The Future Human" Workshop were: Dr. French Anderson, Professor, Keck School of Medicine, University of Southern California; Dr. Athena Andreadis, Associate Director of Research, Neurobiology of Developmental Disorders, The Shriver Center, University of Massachusetts; Dr. John Campbell, Professor of Neurobiology, University of California at Los Angeles; Joseph Coates, President, Consulting Futurist, Inc., Washington, DC; Dr. Gregory Fowler, Executive Director, Geneforum, Lake Oswego, OR; Dr. James Hughes, Associate Editor, *Journal of Evolution and Technology*, and Teacher, Public Policy Studies, Trinity College, Hartford, CT; Dr. Gregory Stock, Director, Program on Medicine,

Technology, and Society, School of Public Health, University of California at Los Angeles; Dr. Jeffrey Stock, Professor of Molecular Biology, Princeton University, Princeton, NJ; and Dr. Burke Zimmerman, President, BKZ Inc., Oakland, CA.

Joining them were two producers from the Palfreman Film Group (PFG): Jon Palfreman and Barbara Moran. Palfreman, President of PFG, is Executive Producer of the television series *The Next Thousand Years*. Two Foundation affiliates in attendance were Kirk Citron, who is Chief Strategic Officer of AKQA, San Francisco, CA, and Anna Reid Jhirad, Producer, Marigold Productions, Washington, DC, who is a Proposal Writer and Funding Consultant for *The Next Thousand Years*.

Workshop Design

Except for the cocktail reception held on Friday evening before the workshop commenced on Saturday, the entire meeting took place in the Foundation For the Future offices. All sessions of the workshop were plenary sessions.

Sesh Velamoor, Foundation Deputy Director in charge of Programs, facilitated the workshop overall, though discussion leaders from among the participants were chosen for the major discussion sessions. The workshop provided a forum where experts could address issues concerning the state of the art of science and technology, as well as the myriad of complex issues stemming from them.

Key Outcomes

By consensus of the participants, the discussions were directed into three divisions: one generation (the next 25 years), ten generations (the next 250 years), and 40 generations (the next thousand years).

The one-generation discussion was led by W. French Anderson. Among many concrete outcomes identified for the next generation was the use of genetic medicine to treat or cure most major diseases: "In theory," said Anderson, "gene

therapy should be—in another generation—as inexpensive as a shot of penicillin or a shot of insulin." The extension of human life-expectancy to 100 years, utilization of nanotechnology sensors, and availability of numerous artificial organs (heart, liver, pancreas, but not brain) were other outcomes expected in one generation.

Gregory Stock led the discussion focused on the next 250 years. In opening the conversation, Dr. Stock named three areas of challenge concerning our image of who we are as humans: longevity ("Will we be developing life plans relevant to significantly extended lives?"), reproduction ("Is there going to be a complete separation of reproduction and sex?"), and our emotions ("... whether we are going to develop nuanced and precise enough pharmacological influences on our emotions to short-circuit the ones that channel our behavior toward certain types of activities"). Anticipated improvements in ten generations' time include increasing diversity in the human genome as different groups pursue diverse visions of what the future should be, body enhancements for such attributes as world-class musicianship and for extra-human capabilities, brain augmentation, and repair of mental functions.

The third discussion, addressing the thousand-year future, was led by Joseph Coates, who structured the session around three questions: What are the two most significant differences in humanity between now and the year 3000? What are two characteristics of humans that will not change through the next thousand years? Of the factors that are extremely important in humanity today, what is changeable? Among outcomes 40 generations away envisioned by the participants were the possibility of extreme enhancements, variations in humankind and even speciation, and translation of consciousness to nonorganic platforms. Global governance, significantly reduced world population, space travel as a necessity, and further extension not just of life span but also of health span were other points of discussion.

Published Proceedings

Full transcripts of the workshop discussions are available in a proceedings document entitled *The Next Thousand Years: "The Future Human" Workshop*, which was being published as this issue of *Journal of Futures Studies* went to press. The workshop proceedings is available for download on the Foundation For the Future website (www.futurefoundation.org).

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