

## ***Homo sapiens: united or divided by cultural evolution?***

Reflections on the EMBO/EMBL joint conference on Science & Society “The Future of Our Species – Evolution, Disease and Sustainable Development”

Modern biology has decided the debate on the geographical origin of modern humans, as Mark Stoneking, Leipzig, Germany, noted. We radiated from Africa: that is what our mitochondrial DNA says. But where are we going? Can the natural sciences answer that question? Presenting a synthesis of the various influences governing human evolution, Jay T. Stock, Cambridge, UK, concluded that although some genetic evolution had occurred since modern humans arose, (e.g. the lactase gene and reduced tooth size) cultural evolution overwhelmingly dictated our future. And now that includes – in its various forms – the use of biotechnology, hailed as the technology of the 21<sup>st</sup> century.

Perhaps it is time for the social sciences to shine too. They should give us vital insights into how best to use our biotechnological prowess to improve human lives for all. As Jerome Barkow, Halifax, Canada, remarked, we need social science expertise to help us manage and use technologies via robust institutions. And one would sincerely hope that this extends to managing human progress in ways that respect the environment and people in poorer countries. The reality of human existence for most people on this planet is a fight against disease and poverty, a situation exacerbated by the unsustainable economic development of the rest of the world.

In 30 – 40 years time, consumption habits of rich countries will start literally to take land away from developing countries, according to Stefan Bringezu, Wuppertal, Germany. Chris Thomas, York, UK, echoed this concern: countries with the largest CO<sub>2</sub> output have the smallest climate changes, and bio-fuels are a crackpot idea. By 2050 we may well have lost 25% of terrestrial species, and there is no agreement on who pays for the damage.

Cultural evolution, driven by technology and globalisation, is widening the gap between the priorities and living conditions of the wealthy and the poor. And it continues to be wealthy economies that develop and rule the technologies. It would be hard to imagine human enhancement technology benefiting many people on this planet: we cannot even accept that investment in addressing major diseases would provide a net economic payoff. Visionary writers such as H.G. Wells have warned us of futures in which the human race divides. Their basic premise was not very futuristic. It was already happening before their eyes.

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More details of the conference can be found at:

<http://www.embo.org/scisoc/conference07.html>

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