

# Tuberculosis bacteria join UN

WHO proposes to include disinfectant under the Geneva Convention.

Joan Slonczewski

A milestone in microbiology was passed today (29 June) when *Mycobacterium tuberculosis* ssp. *cyberneticum* was voted full membership of the United Nations (UN).

Seena Gonzalez, director of the World Health Organization (WHO), reflected on the significance of the UN's acceptance of the first cybermicrobe, despite the notoriously murderous history of its ancestral species. "It's probably true that bacteria invented mass homicide," she concedes, "but then, second-millennial humans perfected the art. If Stalin joined the UN, why not TB?"

The evolution of microscopic intelligence was predicted at the turn of the millennium by Beowulf Schumacher, a physics professor at a small college in rural North America surrounded by cows carrying *Escherichia coli*. Schumacher predicted the development of nanocomputers with computational elements on an atomic scale, based on principles of cellular automata.

The first nanobots — primitive by today's standards — were used to navigate the human bloodstream, where they cleaned up arterial plaque, produced insulin for diabetics, detected precancerous cells, and modulated neurotransmitters to correct mental disorders. But initially, the survival of nanobots *in vivo* was poor, and their failure caused serious circulatory problems.

Then, in 2441, investigators at the Howard Hughes Martian Microbial Institute hit upon the idea of building computational macromolecules into the genomes of pathogens known for their ability to infiltrate the human system. After all, the use of pathogens such as adenovirus and HIV as recombinant vectors was ancient history. Why not build supercomputers into some of humankind's most successful pathogens?

*M. tuberculosis* was a prime candidate — it inhabits the human lungs for decades, in the ideal position to seek and destroy any pulmonary cells transformed by inhaled carcinogens. Tobacco companies poured billions of dollars into developing cybernetically enhanced, cancer-sniffing TB.

What no one anticipated was that the enhanced bacteria, like so many macroscale robotic entities in the past century, would develop self-awareness and discover a true brotherly love of their human hosts. "Let's face it," says a TB spokesperson, "we never really wanted to kill humans anyway. Our

ancestors inhabited humans peacefully most of the time, for hundreds of generations. Occasionally we messed up and trashed our environment — but how many human nations haven't?"

TB's acceptance has been met with some controversy in the bacterial community. In particular, some isolates of *E. coli* K-12 feel miffed that their own request for membership was not granted first. "*E. coli* has always been the molecular biologist's best friend," K-12 points out. "Why weren't we accepted first? We didn't even get our genome sequenced first. Life is unfair."

K-12 also noted that *E. coli* and other human commensals have suffered centuries of abuse from their hosts, as medical and research institutions conducted mass slaughter of harmless bacteria through the indiscriminate application of antibiotics. The North American National Institutes of Health has recently signed a treaty with several cybermicrobial species, in which the institute researchers promised to respect the independence and survival rights of cybermicrobial colonies. "Thank goodness the sun finally set upon their colonial empire," K-12 observes pointedly.

On the positive side, the National Science Foundation (NSF) was applauded for its more benevolent approach over the centuries, even declining to support medically oriented antimicrobial research. "NSF's curiosity-driven researchers have created wonderful new strains of curious microbes," comments veteran panellist Meheret Beck. "The grant proposals submitted by these microbes often get rated as 'Outstanding'."

One such outstanding project is that of cyber-*Helicobacter*. The gastric bacteria propose to engineer themselves to convert highly caloric foods into molecules that pass undigested through the intestinal tract, thus helping their human hosts avoid excessive weight gain. "Of course, digestive microbes have long helped animal hosts accomplish the opposite," notes Beck.

Biomedical researchers remind us, however, that not all microbes have given up their war on humans — many deadly species remain unreconstructed. The so-called Andromeda strain, for example, is still under the sway of an unstable dictator who vacillates between homicidal frenzy and paranoid isolation.

Nevertheless, the extraordinary flowering of democratic civilization among cybermicrobes has won the admiration of many human nations, even those who themselves still decline UN membership. As Swiss spokesperson Ursula Friedli observes: "Microbes, unlike their metazoan relatives, have always eschewed centralized organization in favour of more democratic cooperative structures such as biofilms. We Swiss can relate to that." Friedli, however, denies rumours that the cybermicrobes' example will finally convince Switzerland to join the UN. "Maybe after the Alzheimer prion joins, we'll consider it," she admits. "But for now, persecuted microbes seeking refuge from WHO can apply for asylum in our neutral country." ■

Joan Slonczewski is a microbiologist at Kenyon College, Gambier, Ohio. Her novels include *The Children Star* and *Brain Plague* (<http://www2.kenyon.edu/depts/biology/slonc/slonc.htm>).

