THE AUSTRALIAN

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Scientists foresee world of aliens and Dr Doolittles

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17nov06

FIFTY years ago, scientists were predicting that the little-known study of genetics would, in time, develop into one of the most productive areas of research, but they doubted anyone would land on the moon for generations.

Today, they are forecasting a world 50 years hence where quadriplegics can run the marathon after being cured and where future Dr Doolittles can talk with the animals.

Computers will be able to make findings based on intuition, alien life forms will be found living among us and anyone tired of their body can pop along to their doctor to get a replacement.

The predictions are made by more than 40 leading scientists to help the magazine New Scientist celebrate its half century. Only time will tell if they are more accurate than Astronomer Royal Harold Spencer Jones who, at the launch of Sputnik 1 in 1957, said: "I am of the opinion that generations will pass before man ever lands on the moon and that should he eventually succeed in doing so there would be little hope of his returning."

Professor Robert Sinsheimer was spot on, however, when he predicted in 1957 that there was huge potential in the study of genetics -- "at present a rather fuzzy, abstract idea".

If the 2006 generation of scientists is right, in 50 years there will be devices to detect and interpret the emotions of animals as diverse as monkeys and fish.

Professor Daniel Pauly, of the University of British Columbia, said: "I think the most important development for the oceans would be a device that could detect, amplify and transmit to us the emotions and fleeting, inarticulate 'thoughts' of animals in such a form as to evoke analogous emotions and thoughts in human brains.

"This would first work with primates, then mammals in general, then the other vertebrates including fish. This would cause, obviously, a global revulsion at eating flesh of all kinds, and we would all become vegetarians."

The discovery of alien life will be the biggest advance, according to professor Freeman Dyson, of the Institute for Advanced Study, at Princeton in New Jersey. "The biggest breakthrough in the next 50 years will be the discovery of extraterrestrial life," he said. "We are only now developing the tools to make our searches efficient and far-reaching, as optical and radio detection and data processing move forward."

ET may even be found here on Earth, suggested Chris McKay, of NASA's Space Sciences Division, in California. "In the next 50 years we may find evidence of alien life frozen in the ancient Martian permafrost, perhaps dead but biochemically preserved. We may find it on the surface of Europa. There is even a chance we will find alien life forms here on Earth."

Similarly, professor Paul Davies, of Arizona State University, said aliens may have lived on Earth for millions of years: "Most life is microbial, and you can't tell just by looking whether a microbe is 'our' life or alien. If they are here, they could be identified soon. And the discovery that all life on Earth did not, after all, have a common origin would virtually prove that we are not alone in the universe."

In medicine, unlimited supplies of organs for transplant are expected to be made possible. They would be grown in animals, such as pigs, but would be made from human cells, predicted professor Bruce Lahn, of the University of Chicago. Going one step further,

professor Ellen Heber-Katz, of the Wistar Institute in Philadelphia, forecasts the routine replacements of bodies through regenerative drugs.

Treatments will first be developed to regrow damaged fingers and toes. Over the half-century, techniques will advance so that whole limbs and spinal cords can be repaired.

Life spans would increase, said professor Richard Miller, of the University of Michigan.

"It is now routine, in laboratory mammals, to extend life spans by about 40 per cent," he said. "Turning on the same protective systems in people should, by 2056, be creating the first class of centegenarians who are as vigorous and productive as today's sexagenarians."

One academic believes we will have discovered the origins of the universe. "The most significant breakthrough in cosmology in the next 50 years will be that we finally understand the Big Bang," said Sean Carroll of the California Institute of Technology.

The Times