

## **Humans and robots, the hybridization of the coming decade**

EurekaAlert!



There is no need to resort to science fiction; international experts forecast that by 2025 the robot-human merger will be an everyday reality. Antonio López, Professor of Social Work and Social Services at the National Distance Education University (UNED) of Spain, sums this idea up in his book *The Robotics Divide, A New Frontier in the 21st Century*, recently published by Springer.

In just over a decade, robots will be much more than mere tools to help us with our household chores, in assembly lines, or when parking our cars. We will be so attached to robots that we will see a hybridization between humans and machines, with the consequent social, economic and cultural inequalities that this mass use of robotics will bring.

This is what Antonio López, Professor of Social Work and Social Services at the UNED, predicts in his latest book titled *The Robotics Divide. A New Frontier in the 21st Century* (Springer, 2013).

Together with top experts, the researcher draws a clear picture of what society will

be like in 2025, with three distinct but converging viewpoints. The first has to do with the development of new robots that will permit reaching never-before known levels of automation in traditional sectors such as automobiles, and in key areas such as security and defense.

The second topic dealt with in the book is the growing hybridization of humans and robots, which will coexist and interact ever more closely and in more areas of activity.

Third, robotic prostheses will be implanted in the human body, which, in line with the first idea, will result in the increasing merger between machines and people.

"In the book we show how, in the next 15 years, many areas of industry and the services sector will reach levels of automation above 50%," López said. "Imagine a police station, a hospital or a barrack with the level of automation of a car assembly plant," he added.

### **As human as humans**

The book defines the robotics divide and discusses its main dimensions, particularly with reference to the military. "The new robotic divide has to do with power, with the economy and competitiveness among countries. As has happened with other technologies, we create robotics and introduce them in our unequal societies and they may reinforce such inequality," the researcher explained.

The book also examines the emergence of an alter ego, the robot, which will be increasingly integrated in our everyday lives with ever more capabilities. According to the experts, by 2025 there will be a merger between humans and machines, and new companion robots that are just as human as humans will be developed.

López predicts that "in just a few years our most intimate companion may be our robot, and by intimate I mean both our physical and psychological coexistence." In his opinion, there will be both winners and losers in this hybridization process, with people who cannot or will not adapt.

Something similar is happening right now with the digital divide. Society as we know it has changed and in many cases ICTs (information and communication technologies) have contributed to strengthening existing hierarchies and inequalities. In other cases, however, technology has been used to create more dynamic and less hierarchical management structures.

The experts recommend raising awareness of how technology is developed and reflect on how we can shape it to ensure greater social inclusion; something which can and should be extended to the robotics divide.

The book is the culmination of a line of research begun some years ago by the researcher. After reading one of his articles, Springer proposed he write something with a larger scope. "The article we published in *Technological Forecasting and Social Change* was among the 25 most cited articles in the journal and *Science*

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Direct, a database of international scientific literature. For that reason, Springer suggested we expand upon the article in a book," the researcher explained.

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