Social change — threat or chance?

About Ranga Yogeshwar

Ranga Yogeshwar's enthusiasm for sciences is grounded in his studies of particle physics and astrophysics as well as his work for the Swiss Institute for Astrophysics (SIN) and CERN's Research Center in Geneva.

Committed to making scientific knowledge accessible to all of society, Ranga Yogeshwar continued his career as a science journalist at several publishing houses in 1983, pursuing on to radio broadcasting and television. In that position, Yogeshwar headed the Department of Science at the West German Broadcasting Cooperation Cologne (WDR) and developed the concepts for and hosted several science shows such as WDR's "Quarks & Co" — which first aired more than 25 years ago — and ARD's "Show of Natural Wonders." In addition, Yogeshwar has published several books, such as "Next Exit Future" (2017) and "Any more questions?" (2009), which have become bestsellers in Germany.

Yogeshwar's TV and media engagement, in which he continually advocates for a rational and calm understanding of scientific facts and news, have earned him more than 60 prizes, including the Order of Merit of the Federal Republic of Germany.

INTERVIEW WITH RANGA YOGESHWAR

Nothing is more constant in life than change. This wisdom is all the more true today because change poses a particular challenge to our society. Not only has the type of disruptions changed, they are also accelerating at a breathtaking rate: It took 75 years for the classic telephone to be used by 100 million people; but it only took 16 years for mobile phones and 4.4 years for Facebook. In the age of digitalization, it's not only communication that's rapidly changing: Entire sectors of the economy are also undergoing swift transformation; the working world is reorganizing itself and with it education, too, and how we'll have to learn in (and for) the future. And not to leave out: Artificial intelligence will have an even more radical influence on our future than all the digital changes before it. However, it's not clear exactly where this journey will take us. In addition to uncertainty, the question arises as to how people will react to these disruptions and how they will deal with them. Some stop at the edge of innovation and refuse to go further, while others jump at the opportunity. In our interview for the following cover story, science journalist Ranga Yogeshwar explains why.

Society is going through a period of change right now. What's this process all about?
We're living in times of epochal change. This very fundamental transformation has actually just begun, and several factors are fueling it. Digitalization, in particular, is altering the makeup of our society. These processes are yielding uncertainties, and we have to carefully address a number of questions: Where are we heading? What are the sense and purpose of progress? Which areas can be advanced through critical dialogue?

Where is this journey taking us?
For the first time in human history, we're now able to create a symmetry of information with the help of globalization and global communications facilitated by the internet. Today, it doesn't matter if you're sitting in Bombay, Berlin or Boston. If you have an internet connection, you have access to the same information. Technologies like the smartphone have changed entire communication and business processes. They're changing communication within society and impacting the very way a society views itself. And then there's the dawning of artificial intelligence: Machines are taking over certain processes once reserved for human beings and are doing these jobs much better than we can. This will have a huge impact on our work world over the long term.

In what ways could the increased use of machines and artificial intelligence impact the working world?
We'll see job displacement: Certain jobs will disappear, and new types of jobs will be created. But what will happen if entire industries suddenly lose jobs, if call centers were to shut down tomorrow or if sales personnel became obsolete because they've been replaced by technology. Amazon is already pointing in that direction. Such changes will cause a period of instability. During this period, entire population groups will experience existential fear. They'll worry about whether they have a future. This can lead to anxiety-driven populistic reactions, a step backward. This is where social networks come into play and give a voice to the silent majority. Populists exploit the situation and act illiberally because they disregard the rights of

minorities or ignore certain values. As we move into our digital future, we must find a long-range solution to such instability.

Do you think enacting new laws would be a solution?

Our era of digitalization is like the discovery of a new continent. Profitable resources are initially exploited undemocratically. It used to involve gold in America. Today, it involves sensitive data. Grad-

Profitable resources are initially exploited undemocratically

ually, civilizing processes were put into place and laws implemented. One example is the Declaration of Independence, which helped civilize the United States. We're seeing the same thing in the digital continent that we once experienced in the history of real continents. We're waiting for such a Declaration that will gradually define the rules of the game. This process will certainly irritate some people because the power of the pioneers will decline. We have determined that business groups in the digital world have gained an unbelievable amount of power in a short time and that laws are needed. This year, we've experienced this in debates about Facebook and Cambridge Analytica — discussions that resulted in a new approach to data protection.

What impact is digital transformation having on our daily lives?

Let me answer this by providing an example: Virtual assistance already understands language very well. In the book business, audio books are really popular, much more than e-books. Looking at this trend, you might predict that certain people may be moving toward a post-text world where no one reads. Instead of reading a user's manual,

people watch videos on YouTube. In this world, people will ask themselves: What will this change mean for education? Are we learning things in school that we won't need later on?

What will education be like in such a digital society?

Education will no longer be restricted to a certain period of time; it won't just stop when you finish your degree. Today, we tend to need creative people who focus less on reproducing existing knowledge and instead concentrate on more precisely learning to innovate. Our educational concepts must enable students to "learn to learn" and prepare them for the time they're in the real world where continuing to learn is essential.

How are human beings changing in this era of digitalization, artificial intelligence and the increased use of machines?

Since the days of Aristotle, people have been asking what makes human beings special, particularly in terms of what separates them from the animal kingdom. Humans have been described as "anima ratio," which means that human beings, unlike animals, are capable of thinking rationally and planning ahead. Today, this debate is being waged about the difference between humans and machines. We're asking ourselves what distinguishes us and what differentiates us from machines. Will future systems be able to express something like empathy? Will machines also perhaps be able to understand us emotionally? Patent registrations are on the rise for technologies that try to understand our emotions. Will we have therapists in the form of machines or will we decide that human beings have a certain quality that machines do not possess and that we want? This can be a characteristic a machine doesn't have, something we can't describe. And this is exactly the reason why this quality can't be transported into the world of machines.