



We don't need digital fools

Mr Henning, you criticise the fact that artificial intelligence is often still thought of too briefly. What exactly is the problem?

Klaus Henning: Machines have to be self-reflective when dealing with humans - in other words, they have to be able to make decisions independently. As long as artificial intelligence is cemented with rules in such a way that the algorithms behind them do not develop, nothing new is created. We already have adaptive systems for this.

Can you give an example?

Klaus Henning: I like to explain this on an autonomous car. If it is moving on a road where its entire environment is at 70 km/h, although 50 km/h is allowed, then it will think about whether it should go faster in its own decision. It weighs up the reasons for and against it and makes a decision. So it makes the same qualitative assessment processes as we humans. But if I limit the machine's ability to make decisions and say "You're definitely not going faster than 50", then I make the AI stupid. We have to grant the machines the same discretionary power as we humans do. We don't need digital fools.

This goes beyond machine learning.

Klaus Henning: Platt said, it is like in education. Either I do teach-in and teach someone how to behave. Then he will copy it. Or he must think for himself on the basis of trial and error. What we see in AI is nothing other than the conflict between classical pedagogy and reform pedagogy with learning by doing. There are the radicals who do everything learning by doing and the others who follow a teach-in method. And the third combine the two concepts.

But doesn't this create the danger that the AI systems can no longer be controlled?

Klaus Henning: We have not understood at all what the core of AI is when we limit AI via standardization and security philosophy in such a way that in the end it is nothing but the executing slave. This is why ethical guidelines play a major role in intelligent algorithms. Because you have to teach these automatons something similar to a conscience, which they take as a framework

for their decisions. That is something different from a standard. Basically, such a structure must have its own legal personality.

What exactly is the role of the human being?

Klaus Henning: Its task is to define the design framework. And in this systemic sense, to remain the boss of systems. For example, if someone is breeding dogs, he is inferior to these animals as an individual. Because dogs are quite well coordinated and very intelligent. Nevertheless, humans take over the leadership tasks of these intelligent beings. For me this is the guiding paradigm for dealing with intelligent machines. Could machines take over the leadership? Yes, if we're not careful, they will. But we want a system in which we create the basic conditions. And in this system there are three central concepts: trust, agility and mindfulness.

Meaning?

Klaus Henning: If I want to change something in a value-oriented and controlled way, I have to create a culture of trust vertically and horizontally across all structures, departments and people. That needs to be practiced. One example: In Rio everyone got used to the fully automatic bus. It has been operating there completely autonomously for several years - on specially approved roads. Everyone has got used to it. Trust has developed. You have to create a process in which people can learn whether or not they have confidence in a technology.

What are the other two terms - agility and mindfulness - about?

Klaus Henning: Agility means that we have to become more changeable and faster. And we have to get away from discussions about principles. If a new idea comes up, we should just try it out instead of making laws first. On the other hand, we must learn to look at the side effects of technological development. That is what mindfulness stands for.

AI also scares many people because it will destroy jobs.

Klaus Henning: Every wave of innovation costs jobs and creates new ones. This is not a new topic. Just take this somewhat hackneyed example of the transition from the horse-drawn carriage to the automobile. The phenomenon that entire occupational groups suddenly disappear is not new. But if I know that the machine will be able to do my job better than me in three years, then I should now be thinking about what I can do together with it - in terms of a new business model. One example is predictive maintenance, which has been made possible by AI systems in another dimension. It will amount to a creative

interaction between human and machine intelligence. And it is precisely in such special products and services that the future opportunities for Germany as an export location lie.

How will humans be able to differ from machines in the future? Is it creativity?

Klaus Henning: Be careful, machines can also be creative. Because what is creativity? I give someone a task for which he has no experience. And by further developing the old experience he comes up with a new idea and can solve the task. A navigation system will probably soon be much more creative than I am at finding out how to get from Aachen to Cologne under very specific conditions.

Which strengths can the person play out instead?

Klaus Henning: People are very good at reflecting and dealing with complex situations with a high degree of chaos. Machines are still miles away from this. Humans can make extremely emotional and often correct decisions in such situations. It's about things like emotional intelligence.

The technological development is extremely fast. Do we still have the time to change as a society and create the necessary framework conditions?

Klaus Henning: There is a study with a major vehicle manufacturer on the degree of penetration and market maturity of AI. The result was that we have about 15 years - half a generation. But when it comes to changing legal systems or a new political understanding of a community, 15 years is damn short. This is all the more true when you consider that a 25-year-old today has difficulty understanding what his five-year-old nephew is doing. So we have to hurry. But we engineers and computer scientists have a duty and an obligation to shape the process of how AI can also reshape society.

To the person:

Professor Klaus Henning is Senior Partner at the consulting firm umlaut transformation GmbH and member of the board of the Institute for Entrepreneurial Cybernetics at the RWTH Aachen University. In September 2020 his new book "Smart and digital" will be published in English.