



IMAGES: LUISA JUNG FOR MPG (TOP LEFT), MOHAMAD ALMEDAWAR/API OF MOLECULAR CELL BIOLOGY AND GENETICS (TOP RIGHT), ISTOCK/DMYTRO VARAVIN (BOTTOM LEFT), PICTURE ALLIANCE / JOCHEN TACK (BOTTOM RIGHT)

**38 | DETECTION**

Software has been developed to diagnose psychiatric illnesses.

**52 | RESEARCH**

Under the microscope, mysterious vesicles appear in cells, which are now the subject of research.

**58 | RECORDING**

Cellphone data are a valuable source for statistics on population development.

**64 | REPLACEMENT**

In the future, CO<sub>2</sub> could replace oil as a raw material for chemical products.

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GEO600 near Hanover



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Forestry needs new roots

An interdisciplinary institute could provide scientific insights into how forests can be constituted in the future to be able to withstand ongoing global warming.

## 22 | INFOGRAPHIC

Myriad voices in the avian choir

## FOCUS

Artificial intelligence is learning

## 24 | Not without a reason

Artificial intelligence (AI) has long been able to recognize patterns much better than humans can. But in order to truly be worthy of its name, it would also need to understand causal relationships.

## 32 | When machines get involved

Artificial intelligence is playing an increasingly important role in our everyday lives. But how do humans behave when they come into contact with intelligent machines? And what do they expect of their artificial counterpart?

## 38 | Software to scan the psyche

Just tired? Or depressed? The symptoms of psychiatric illnesses are not always clear. Artificial intelligence could help detect these illnesses at an early stage.

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Charlotte Grosse Wiesmann

From heavenly bodies to human brains

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## KNOWLEDGE FROM

## 52 | Droplets in the cellular soup

For decades, no one was interested in the vesicles that form in cells under the microscope. Now these mysterious phenomena are being studied in more detail.

## 58 | Digital demography

More than one-third of the world's population uses Facebook at least once a month. The data collected from this can be used to track and predict international migration.

## 64 | Fuel from the steelworks

The steel industry is responsible for around six percent of the global CO<sub>2</sub> output. Researchers are investigating how the greenhouse gas can be used as a raw material for chemical products.

## 70 | Zooming into the heart of Centaurus A

At the center of a distant galaxy, there is a supermassive black hole. The Event Horizon Telescope has now given us a more detailed view of it than ever before.

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