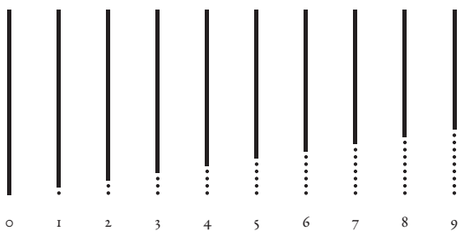
LOVED

&FOUND_THINGS WE LOVE.

The Future Issue

Zero. Universal code.
The LOVED&FOUND design concept changes every time. The things are numbered, and in turn we completely do without page numbers. In addition, typographers and designers can leave their signature on each issue. This time, our Art Director Ruben Scupin has developed a universal code that is read from bottom to top. The cover has also been kept white, in homage to the white sheet of paper that can be designed just like our future.



Editorial. In the past, people stayed quiet about the future, because until the late Middle Ages the future tense didn't even exist in many languages. And no one needed it, either, as long as the future remained something otherworldly that only the Church knew about. People lived in an endless loop of conditions from God. They hung on from season to season, from sowing to harvest; one religious holiday followed the last. The idea that you could actively shape tomorrow and your own life was unimaginable. It was not until the Enlightenment in the 17th and 18th centuries, which put the focus on people and their capabilities, that the horizon of time was also extended.

Today, the future is omnipresent. Everyone wants to know what will happen next. In the constant noise of the information age, in which we have to adjust to new conditions at the speed of light, future and trend research are booming. They promise an element of security amid the madness of continuous change. And trends of the coming years can in fact be predicted relatively accurately. Nevertheless, these are only probabilities – the prognosis can never offer absolute certainty. So we have no choice but to live with the uncertainty.

American publicist H. B. Gelatt therefore claims we have a »future sense«: »It has the paradoxical ability of not knowing exactly how the future will be, not fully understanding the chaos of the present, and nevertheless firmly believing that we can work to create the future that we want.« Gelatt calls this life philosophy »positive uncertainty«.

The LOVED&FOUND editorial office also approached this issue with lots of positive uncertainty and, in the process, not only examined the future-readiness of the present, but also looked at what was futuristic in days gone by. And because thinking about what is yet to come invites you to use your imagination, we have prepared fictitious food innovations for you (no. thirty-six), invented utopian gadgets (no. twenty) and created dematerialised fashion visions in the form of wearable objects (no. forty-five). Because anyone who wants to shape their future needs imagination above all, of that we are quite certain.

The LOVED&FOUND Future Institute

One. Saving time. The idea of packing the present day into capsules and conserving it for posterity comes from the USA, where it has a long tradition. The father of the modern time capsule is Dr Thornwell Jacobs. In the 1930s, his ambitious goal was to create a record of the current state of all human knowledge as well as a picture of everyday life in America. Since this huge historical record would far outstrip the capacity of a standard time capsule, he simply filled up an entire swimming pool in the basement of Oglethorpe University in Atlanta with the »essence of Western culture«. He collected everything the zeitgeist had to offer – from everyday objects like toasters, telephones and Donald Duck figurines to a sealed bottle of Budweiser and voice recordings of famous individuals. He then had the »Crypt of Civilization« sealed, with the instruction that it was not to be opened before 8 May 8113. Unfortunately, his plan didn't work out – just 40 years later, it fell prey to one student's curiosity.

The LOVED&FOUND editorial team have also deposited their own time capsule at a slightly less megalomaniacal scale. Whoever opens the capsule in the distant future will find items including a bar of chocolate that is well past its sell by date, an antique smartphone from the generation of the pre-digital natives and an analogue colour film filled with snapshots – all relics of a long forgotten age, the year 2015.

AS/mb

Snickers double pack (Lilli), Casio F-91W (Tom), shell necklace (Mareike), *Alice in Wonderland* (Julia), Burt's Bees Beeswax Lip Balm (Ruben), iPhone 2G (Inga), pillbox with aspirin and paracetamol (Anja), »I like«-stamp (Ilker), Old Pulteney whisky (Dominique), black and white Ilford film (Maja), Juno dog ball (Kim), mix tape (Valerie)

photo: Tom Schuster

Patrick Morda *(text)*

Two. Bill versus Bill. When it comes to technological progress, some people are optimists and others are pessimists. One prominent example of someone with unshakeable faith in science is Bill Gates, longstanding head of Microsoft, richest man in the world, computer nerd and philanthropist. His less well-known and more pessimistic opposite number is the computer scientist Bill Joy, co-founder of Sun Microsystems and one of the big names in Silicon Valley, who warns against genetic engineering, robotics and nanotechnology. And how about you? Are you closer to Bill Gates or Bill Joy? Take the test and find out!

If you had 30 million dollars in your bank account, you would…
a.) Buy the Codex Leicester.
b.) Build a completely self-sufficient bunker in your front garden with no (data) connection to the outside world.
c.) Contact your bank and let them know about the error.

Who is your favourite Simpsons character?
a.) Ned Flanders
b.) Lisa Simpson
c.) Barney Gumble

What do you think of the sci-fi film Terminator 2 – Judgment Day*?*
a.) Never heard of it.
b.) It shows our future.
c.) It should have been the last film they made in the series.

If someone in a room called out »Centibillionaire!«, you would say
a.) »Here!«
b.) »I don't do anything for money, because that only results in technologies that harm humanity.«
c.) I don't think I'll ever be in a room where someone might say that.

At what point will the end of the world be unavoidable?
a.) In around five billion years, when the expansion of the sun turns the surface of the earth into a furnace.
b.) When humanity creates machines with consciousness. So in less than 20 years.
c.) The end of the world? This again? Let's be honest, this is like the boy who cried wolf.

You regard an irrepressible optimist as…
a.) A romantic.
b.) An idiot.
c.) A pain in the neck.

You once said in an interview…
a.) »640K ought to be enough for anybody.«
b.) »The truth that science seeks can certainly be considered a dangerous substitute for God.«
c.) I don't talk to the press.

I regard social media as…
a.) Mostly a waste of time.
b.) Synonymous with the surveillance state.
c.) I don't understand social media, and I don't think anyone does.

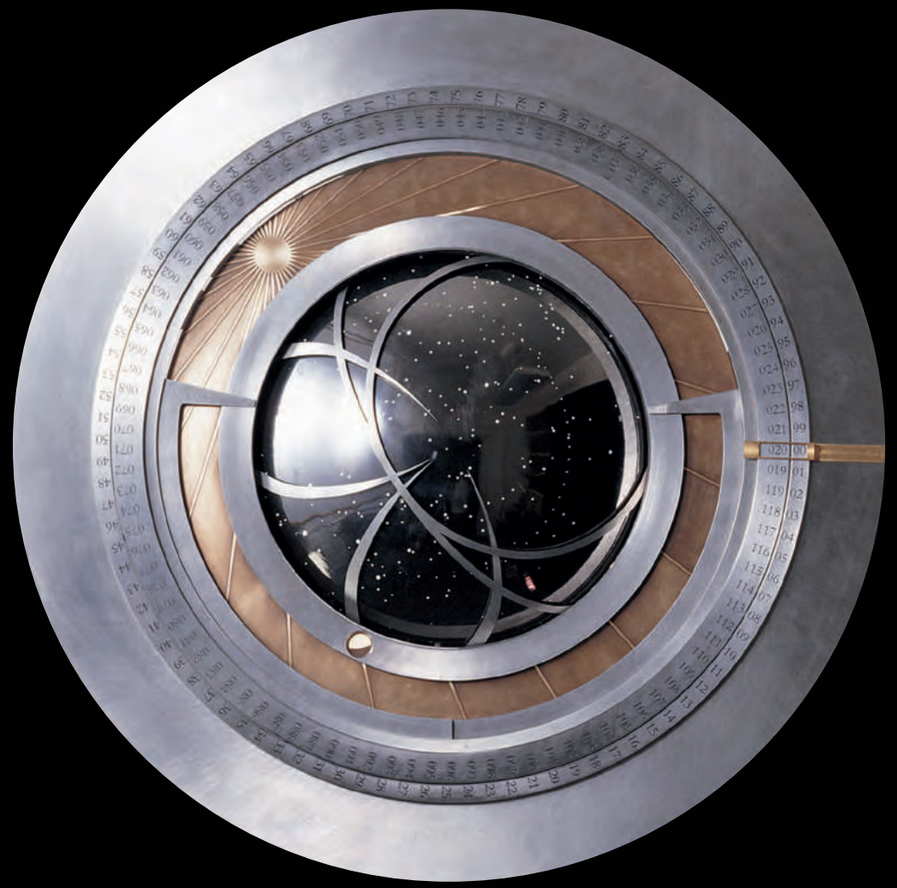
What is your favourite book?
a.) Something with a happy ending.
b.) *1984*.
c.) I don't care as long as it's printed on paper.

BILL

Mainly b): You most closely resemble Bill Joy. Though you (probably) haven't developed a programming language and have never been asked by Wired magazine to predict the future of the world. You are calling for technology to be restricted, or at least for a more reflective approach to be taken towards the possibilities opened up by progress. You believe that terminators à la Arnold Schwarzenegger are a completely realistic technical possibility, and that it's only a matter of time before they are created. If letters and parcels are going to be delivered by drones in the future, you'd rather stop getting post. You also sometimes take the risk of being ostracised for your views. Why? Because you believe that by doing so, you help ensure things will turn out well. The most important thing is that people will have thought carefully first about what actually needed to be changed.

Mainly c): You are the control group. You live in the here and now, and like to keep an open mind. If you had to choose heads or tails, you would try to make sure the coin landed on its edge. This doesn't mean you don't have an opinion. Quite the contrary. But you are neither Bill Joy nor Bill Gates, and your opinion isn't backed up by billions of dollars or media companies. That doesn't matter though. You're undeniably in the majority. Alternatively, you could just take the test again …

Mainly a): You most closely resemble Bill Gates. Though (probably) without a fortune of billions and a 66,000-square foot estate. You see more opportunities than risks in the future and believe that technology and technological progress tend to benefit rather than harm humanity. You are prepared to share the fruits of your achievements with others – which may be because you, quite simply, have far too much. You are a blue sky thinker and sometimes take risks. Why? Because you believe everything will turn out well in the end. Or at least better than it was before.



Rolfe Horn *(photos)*,
Stefan Anlauf *(text)*

Three. Think on, and on, and on …

» Are you sure you are really interested in the preservation of the human race, once you and all the people you know are no longer living?« asked Swiss writer and architect Max Frisch in his *Diary 1966–1971*. The founders of the Long Now Foundation would answer with a resounding »Yes«. The foundation, whose board members include computer scientist Danny Hillis, writer Stewart Brand and musician Brian Eno, follows the ambitious aim – in times of short legislative periods, quarterly reports, changing fashions and the technological rush hour – of stimulating passion for long-term thinking and expanding horizons to the next millennia, because they believe thinking far beyond our limited lifespan is essential for the survival of humankind. Our collected knowledge must be secured for future generations and the earth and its resources require careful maintenance. Of course, climate change does not take place in one or two years – something like that takes centuries. Nature teaches us patience. We people, on the other hand, are impatient.

The foundation was started in 01996. The extra zero is not a typo, but rather a sign that the clocks tick differently here. Their timing takes millennia into consideration. It was this attitude that led the foundation to develop a monumental clock: *The Clock of the Long Now*. It is designed to tick just once a year, chime once each century and work for a full 10,000 years without major repair work. That would make it twice as old as the Pyramids are now! The clock, which is currently being built deep under the Texan mountains, is a true monument for the future, because the clockwork also sets our thought processes moving: will there actually be people to experience the moment it stops ticking? If so, what will their life be like?

In order that future generations learn from the successes and failures of humanity, the Long Now Foundation strives to preserve this knowledge for tens of thousands of years. It was for this reason that the *Internet Archive* was created. It is a digital world library, whose algorithms scan the World Wide Web and store everything there is to be found. It now contains 18.5 petabytes of texts, images, videos and websites, including treasures such as early pages from *Spiegel Online* from the 01990s.

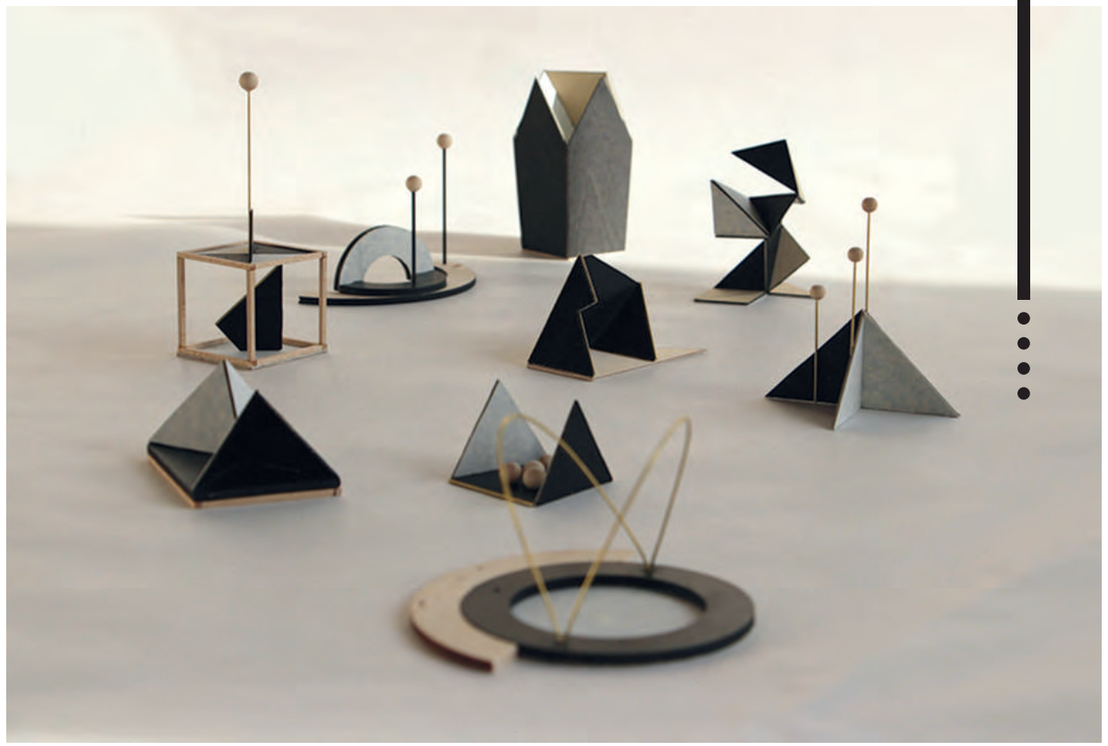
The place where like-minded people meet: since 2 June 2014, members and guests of the foundation have been able to meet in the café The Interval to listen to talks and take part in discussions.

But the medium used to store the knowledge is also ephemeral. Even now, a floppy disk won't fit into a Mac. Programs and formats from the early days of computers no longer work. CDs will be useless in ten years' time, just like USB sticks and hard drives. Even the ink used to print this article will be faded after 75 years. While people in times gone by scratched texts into stone that survived centuries, current world knowledge crumbles before our very eyes, despite the flood of information. This is because today's products and digital storage media are not robust enough. Alarming: without realising it, we are steering our way towards an epoch of forgetfulness. With this in mind, the foundation has developed a storage medium called *Rosetta*: a nickel plate that can last several thousand years, on which 14,000 text pages that can be read with a microscope are engraved. The first versions already exist: 2,500 languages and information on their syntax and pronunciation are engraved on them, because the Long Now Foundation assumes that 50 to 90 % of the languages will disappear in the course of the next century.

The foundation is willing to bet on it. For real. They have started a betting platform, the Long Bets Project, where each individual considers what the future will look like, in order to make bets on it. For example: »Want to bet that … planes will fly without pilots in 2030?« Some of the guesses have already passed their use-by date. For instance, it was predicted that the last source of oil would run dry in 2010. Fortunately, that bet was lost. The predictions are designed to help people think a bit further ahead along the path of humanity and open our eyes to the future, so that we can act intelligently and sustainably. That is what the Long Now Foundation wants for the future.

You can follow the path of long-term thinking on *www.longnow.org*. Website time travel can be found on *www.archive.org*. And the future betting shop is here: *www.longbets.org*

The concept of the clock is based on an electromechanical construction. A torsional pendulum sets the clock pulse. Brian Eno developed the algorithm that is the basis for the melody of the chimes. The finished artwork is to be installed deep underground in a Texan tunnel, protected against vibrations and external influences.



Four. Curated dreaming. While futurologists use trend analysis to forecast the unknown, the Londoner »post-futurist« Amina Abbas-Nazari prefers to rely on her power of imagination. With the think tank *Dear the Future*, she would like to support dream-based future thinking and actively shape the urban environment hereafter. In concrete terms: the *Tech City* in London's East End, a culturally diverse borough with a lively start-up scene. What the residents, workers and founders see as a creative enrichment, the city sees as a lucrative capital investment. According to government plans, here is where the UK's Silicon Valley will be. But what do the people living in the area think about the future of their home? To answer this question, Abbas-Nazari invited them to curated dreaming within the scope of *Dear The Future*. In playful workshops, the residents could daydream to their heart's content. The topics were as diverse as the people themselves and ranged from new means of transportation to autonomous supply to the borough. Afterwards, the visions were translated into abstract sculptures, which Abbas-Nazari calls »social dreaming architecture«. And who knows: instead of sticking to a big master plan from the government, many small visions from the people could be realised in future. What sounds like idealistic craziness could perhaps be reality one day.
www.aminanazari.com, *deviation.org.uk*

AS/eb

Eva Bolhoefer *(text)*

Five. Through outer space to Australia. Richard Branson, founder of a spaceflight company for tourists, Virgin Galactic, is striving to achieve the ambitious goal of capturing the civil aerospace market and offering flights that take you through outer space. For example, a route from Berlin to Australia could take just two hours. What sounds like futuristic delusions of grandeur are actually based on a technical concept with many promising approaches. For this, Branson is drawing on a system that has already been tried and tested for Virgin Galactic spaceflights on his space ships. An aeroplane releases a shuttle at a certain height in the air, which then ignites a hybrid rocket propulsion system and launches it into outer space. »A space ship could leave the atmosphere and land outside of a city area,« explains George Whitesides, Managing Director for Virgin Galactic. The Pentagon, too, is currently researching concepts for worldwide private and commercial transport through the universe. But the technologies are still in their infancy. »The future doesn't give us any gifts, we have to earn things by developing them,« explains Whitesides. »It's an exciting time for the aerospace industry.«

photos 4. Amina Nazari, 5, *bubblesite.org*

Judith Stoletzky *(text & illustration)*

Six. 2126 AD. Melinda Louise Sanchez y Rodriguez Schumacher Jackson de Aguila y Ling Wu Ofili Mbwôl Mpasi Al Assad bent down over her grandchild's little bed late one afternoon in an unusually mild (the thermometer read minus three degrees) July in the year 2126. Although his tiny face mostly just looked like any baby's, the traces of the mass migrations of the past century were plain to see. The sleeping baby's face looked Asian-African-North European-South American-Arabic.

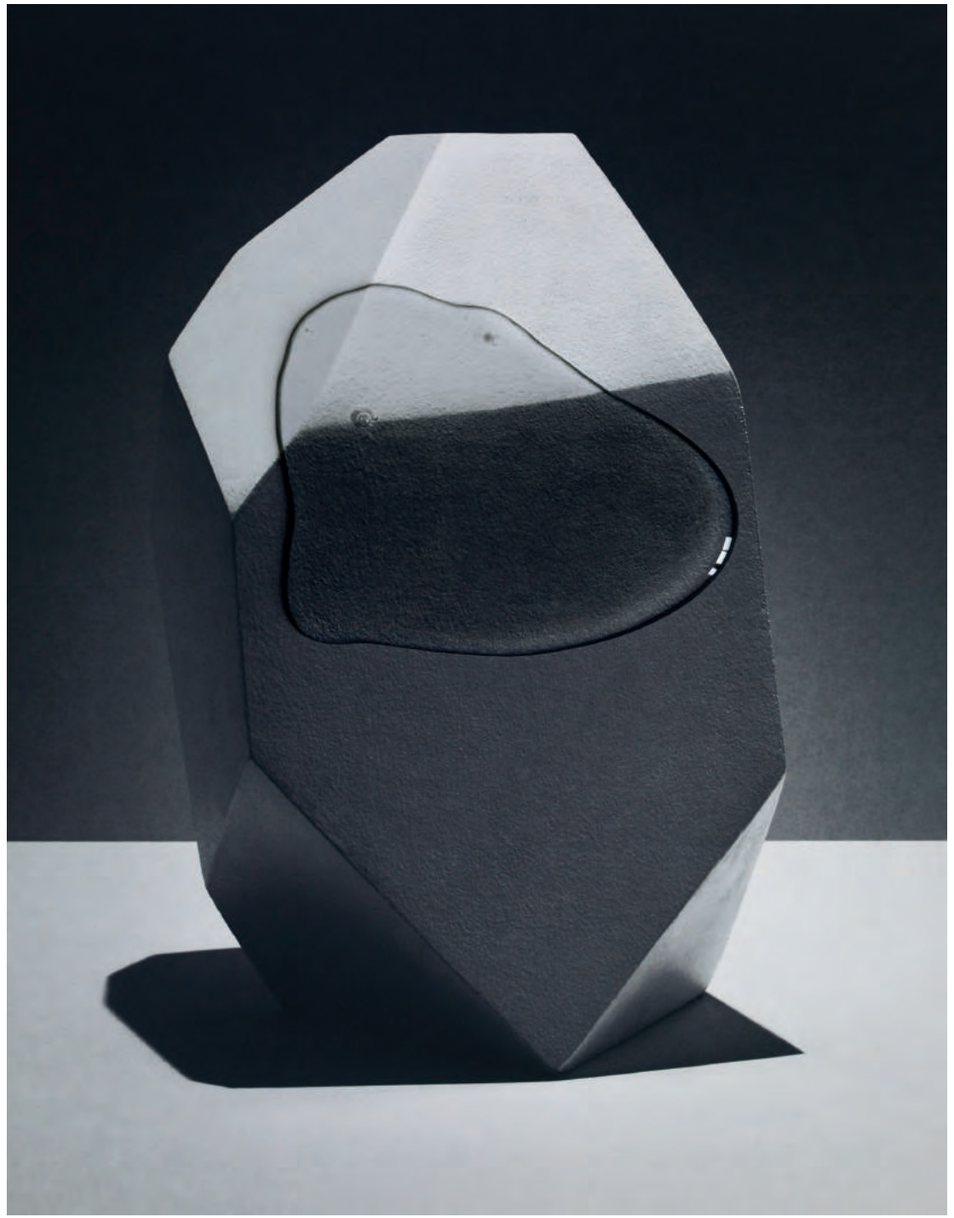
Melinda's gaze shot upwards when several bursts of oily, chrome green liquid erupted from one of the two pale suns that were visible in the clouds of ash above the empty northern horizon, while the other sun, bored of the world, spun on its axis, giving off tiny stars that disappeared again a moment later. Melinda had become a grandmother for the first time, and had mixed feelings about the fact. Yes, she was pleased that her daughter had shown her willingness to do her bit to repopulate the earth. But she was also afraid for her grandson and couldn't picture what his future would be like; didn't know what materials or colours to paint such a picture with.

After the great famines of the 60s, there had been fewer than two billion people left on the cold earth. Yes, she was pleased, but this couldn't be what euphoria felt like. She had heard of such a feeling, and read about it in old books. She imagined it being wonderful. Melinda crumbled some dried lichen – the only vegetation that grew in a radius of many kilometres – into a cup, poured a little melted ice over it and contemplated, with grim detachment, the images of her own childhood that rose before her eyes with the smell of damp earth and dirty snow. She was living with her parents and three siblings with 500,000 homeless people in a camp in New York's Central Park, which was much safer than the decaying, overcrowded skyscrapers made of stone, where of all people it was the ones who still owned something that robbed, stole from and fought with each other. On Park Avenue and Fifth, the former billionaires waged war against one another, hurling primitive incendiary devices at the dilapidated penthouses that looked out over the park. It had been a long time since this had been the premiere address in the free world. Sometimes, when the west wind blew on moonless nights, ghostlike sounds trickled out of cracks in the stonework: the clinking of champagne glasses, jazz being played on the piano and the laughter of young, beautiful women. The global economy and energy supply had finally disintegrated completely in 2071 after numerous cataclysmic collapses, natural disasters and so-called water wars. The whole of Asia sank into the sea after a supertsunami, and El Niño had reared its ugly head three times in one year. The small Eastern European states survived for the longest. Economic migrants from Switzerland who had survived the pulverisation of the Alps and the meltdown of the gold reserves joined refugees from Germany, Sweden, Denmark and France as they surged into Macedonia, Albania and Kosovo, until these countries literally burst at the seams. Melinda still had a few clippings from the Neue Zürcher Zeitung from those mad times that showed the desperate Swiss refugees attempting to get over the barbed wire fences into a life that was slightly less bad. During the years when Melinda had lived at the camp, the global population was around 27 billion. Things were relatively good for her family, because in the camp there was a little bit of community spirit, mutual aid and contrived kindness. There was still a small amount of water in the East River and the Hudson. Melinda thought of the food: »The grey potatoes. They weren't bad. And we could live for two weeks off a racoon. If you roasted the rats for long enough, they were edible, and there were certainly plenty of them.« People had become used to talking to themselves, since it was so rare to meet fellow human beings. »But it was the rats that did for us in the end.« They had triggered the global leptospirosis epidemic, and within a few years the world's population had almost been wiped out. But for some reason for which no scientific explanation could be found, only a romantic one, musicians, poets, visual artists (though not ones who worked with video) and individuals whose hearts were pure developed a mysterious resistance to this pathogen.

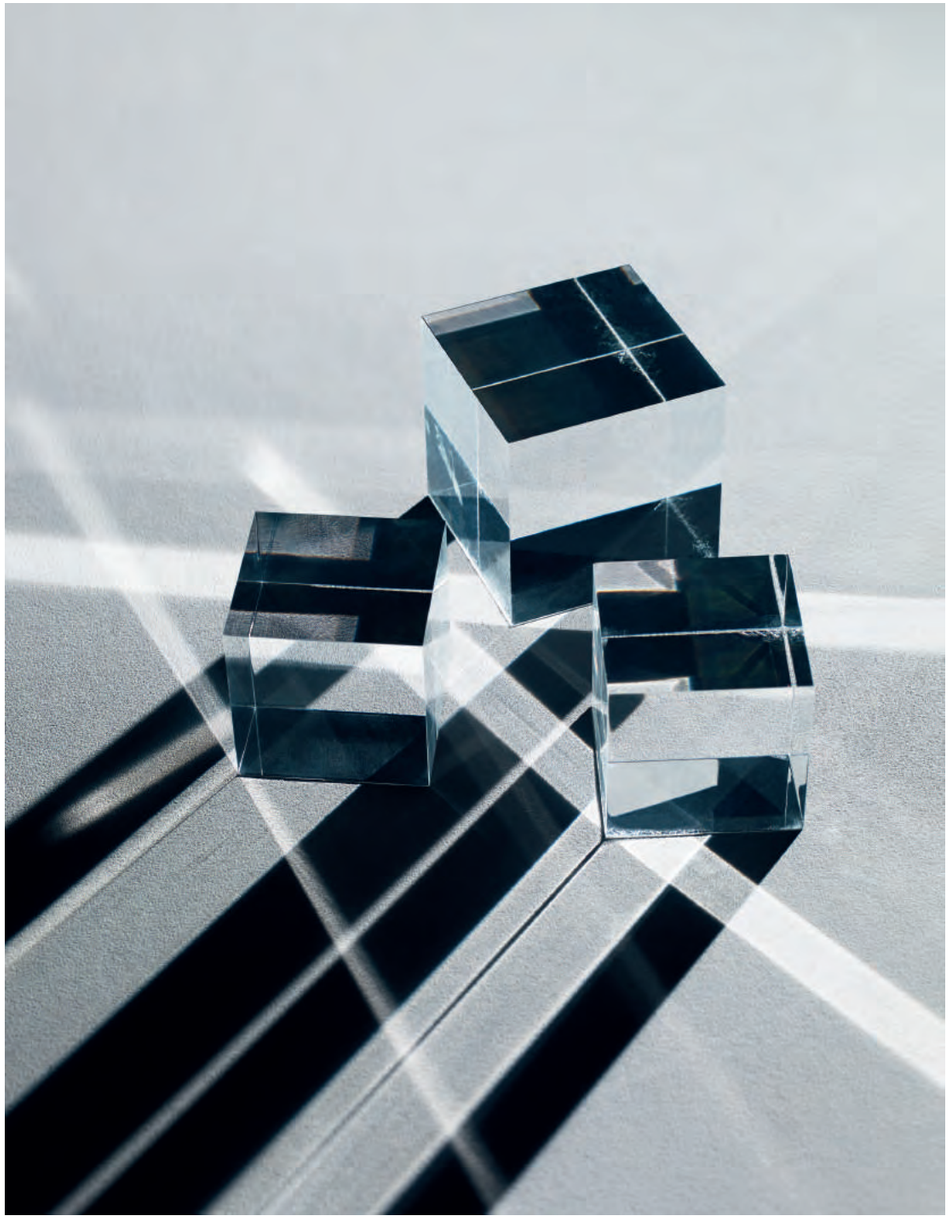
Melinda picked up the baby, rocked him in her thin arms and whispered into his ear the same words that her mother's grandmother had supposedly always spoken to her when things weren't going so well: »Everything will be OK in the end. If things aren't OK, you haven't got to the end yet.«

Benoit Pailley *(photos)*,
Alessandra Sardo *(text)*

Seven. The Magnificent Seven. We usually reserve the number seven for a little style. In this issue, we are not presenting fashion for a change, but smart materials that could revolutionise many areas of our lives in future.



Aerogel
The world's lightest material is 99.98 % composed of air-filled pores and is mostly made from silica dried under extreme conditions. Due to its high optical transparency and corresponding shimmering blue effect, it is also known as »frozen smoke«. The heat-resistant material could be used in home insulation in future.

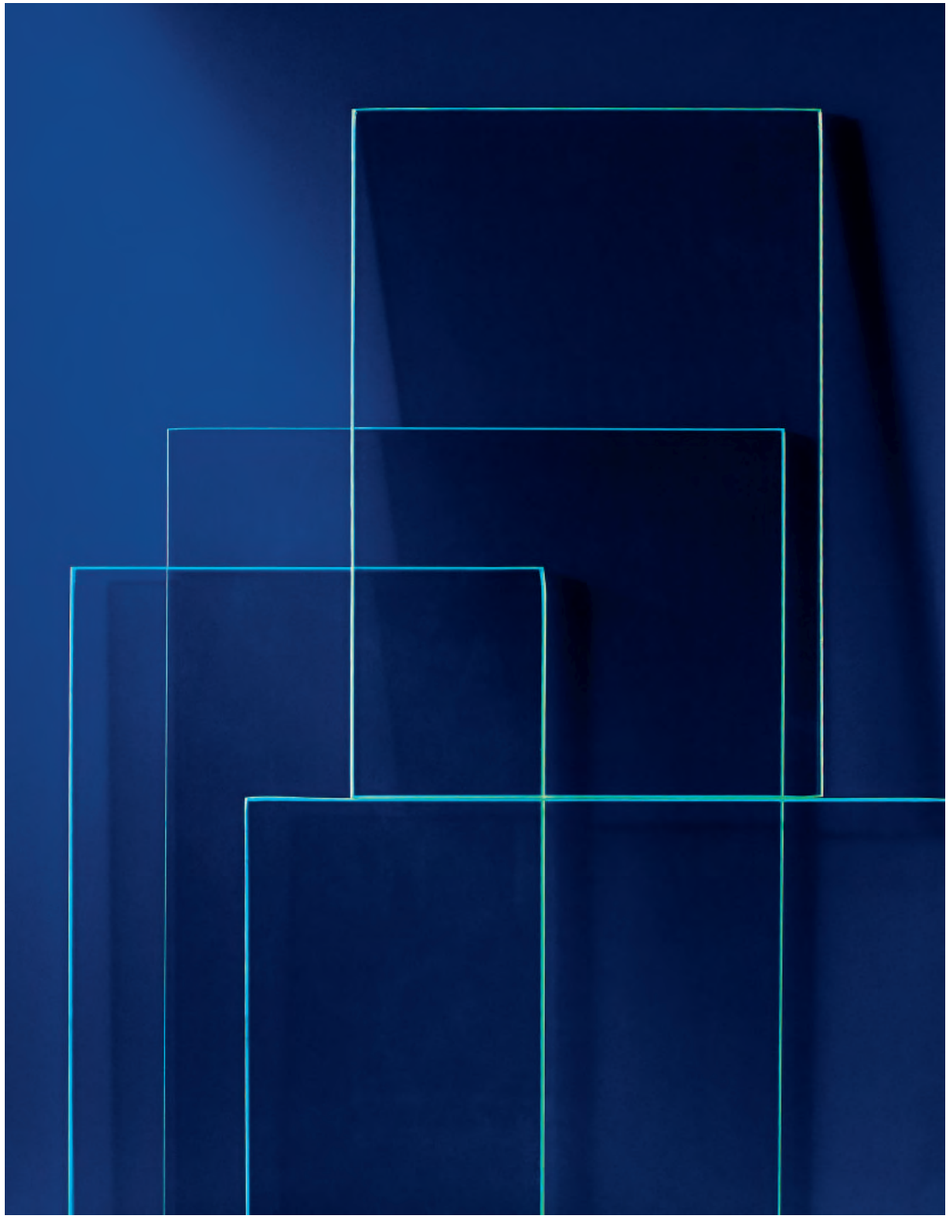


Nanocrystal diamonds

Diamonds are considered the hardest natural material in the world and are therefore ideal for constructions that are exposed to extreme conditions. The material is particularly interesting for aeronautical engineering: fighter jets or aeroplanes composed of diamonds would be virtually indestructible.

Glass alloy

Engineers at the Colorado School of Mines have developed an extremely resilient glass alloy, with which drilling bits can be coated. The steel-based alloy is so hard that it can withstand the greatest pressure without the drill breaking.



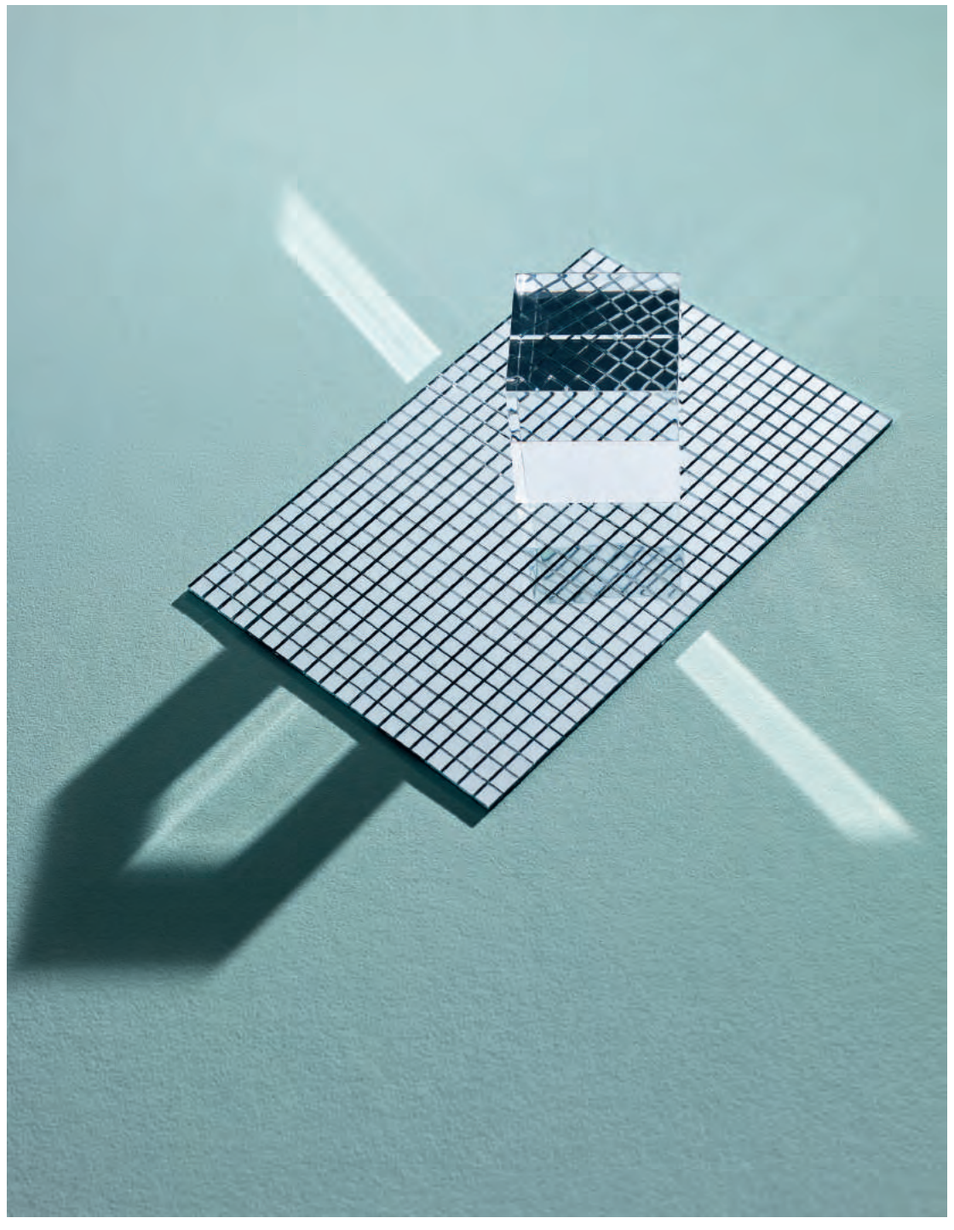
Metamaterial

The artificially produced structure of metamaterial gives it properties that have not been found in nature. Light, power or sound waves are diverted so that things becomes untouchable or invisible, for example. The desire to own an invisibility cloak could therefore one day be fulfilled.

Amorphous metal

The unusual amorphous atomic arrangement makes the material twice as strong as steel. Metallic glass, as it is also known, can help us to protect the environment. Due to its high level of electrical resistance, electricity costs could be reduced by up to 40 % in future.

Carbon nanotubes
The microscopic tube-shaped entities are taken from carbon. The bond is 300 times stronger than steel – in theory it could be used to build towers hundreds of kilometres high. However, the longest collection of tubes produced measures no more than 20 centimetres. For now.



Rare-earth magnets
Rare-earth magnets are so called because they are composed of iron and rare-earth metals. When used in the automotive industry, the magnets can reduce the weight and size of the engine, saving petrol and helping the environment.

photographer: Benoit Pailley *www.benoitpailley.com*
idea: Ruben Scupin

Eight. Smarter Luxury. The intelligent luggage from *Horizn Studios* makes it even easier for comfort-spoilt cosmopolitans to jet set around the world. Whether with GPS, a mobile phone charging station or a complete travel assistance team: each smart bag gives you access to a service which works with a hotel concierge. Bothersome everyday problems for frequent flyers – such as rebooking a flight, finding hotels or making reservations at a spa – are thus left on the wayside. Travel agent for movers at *www.horizn-studios.com*

SA/ac

Nine. Time machine. For digital natives who always want to be on top of the latest trends is the Tizen smartwatch *Gear S2* from Samsung the ideal gadget. This innovative little round wonder also proves to be an electronic all-round assistant: it can not only receive e-mails, take calls, show pictures or record voice messages – as a digital personal trainer, it also takes care of your stamina. The *S Health App* unites numerous fitness functions such as a step counter and heart rate monitor, and it automatically records each training session. In addition to its round shape, this smart timepiece features more details known from traditional watches, such as the bezel which can be used to conveniently navigate through the menu. Everything round the clock at *www.samsung.de*

SA/ac

Ten. Long-lasting lamp. The desk lamp *CSYS Task LED Light* from industrial designer Jake Dyson simply illuminates for longer. A sustainable light system consisting of cooling and heating elements ensures that the dimmable LEDs keep their beautiful lustre for up to 37 years. Even the flexibility of this agile light source is convincing: thanks to an ingenious, innovative mechanism, it can be turned at a 360-degree angle, thus guaranteeing enlightening moments in every corner of the room. Enhanced light for the advanced at *www.dyson.com/lighting*

SA/ts

credits: 8. PR, 9. PR, 10. Dyson, 11. Karen Kimmel Studio, 12. Taschen, 13. Atelier Teratoma

Eleven. Coaster universe. The cosmic coasters from the design studio Karen Kimmel remind us of the moon's surface thanks to their random colour gradations. Each hand-painted piece is unique and made of high-quality leather. So this beautiful round wonder not only protects your table from spots, but also serves as the ideal accessory for all advocates of cultivated table manners. Full of starry style at *www.karenkimmel.com*

SA/rus

Twelve. Space-age visions. About 50 years after the release of Stanley Kubrick's cinematic masterpiece *2001: A Space Odyssey*, TASCHEN has brought out a special edition in a metal slipcase which consists of four volumes and includes the manuscript, still images from the film and interviews. The publication gives you insights into the production of the Sci-Fi classic, which also addressed the visionary genius', Kubrick's, control-freak tendencies and perfectionism. *The Making of Stanley Kubrick's 2001: A Space Odyssey* unter *www.taschen.com*

SA/rus

Thirteen. Techno picnic. Romanticism is becoming more and more innovative: LEDs instead of candles. WhatsApp emojis instead of love letters. And even the classic picnic with a square woven basket on a red-chequered blanket could soon be a thing of the past. That's because the Spanish design office *Atelier Teratoma* has developed a novel picnic basket which looks like a rocket rucksack. At the speed of light, this galactic gadget unfolds to become a table with drinks holder, USB charging station, loudspeaker and screen that can receive messages via Bluetooth. A new dimension of picnicking at *www.atelierteratoma.com*

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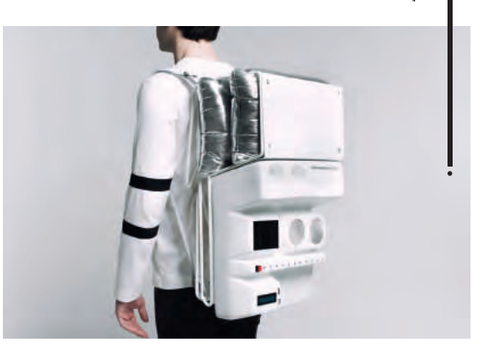
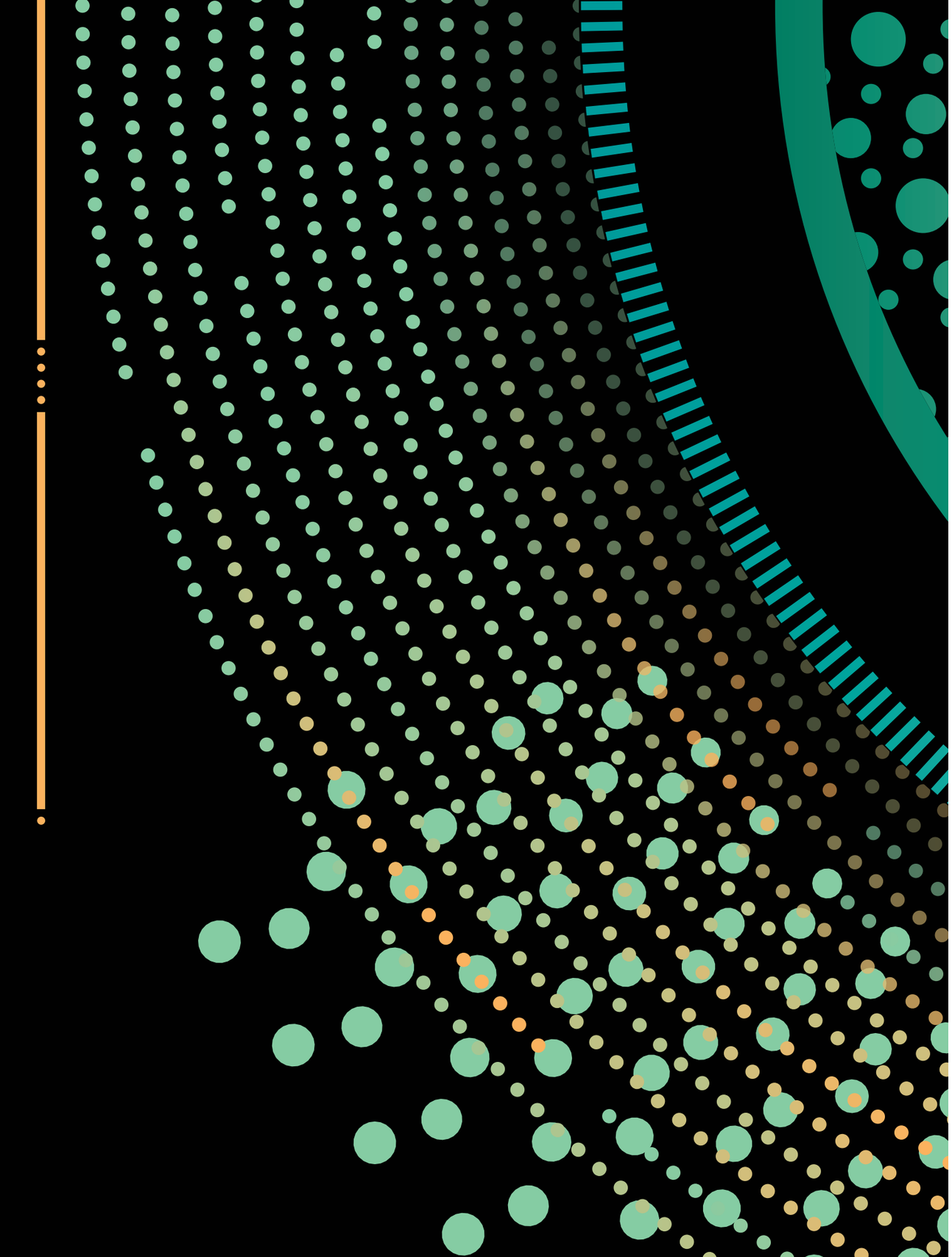




Philipp Kohlhöfer *(text)*,
Julia Kerschbaum *(infographic)*

Fourteen. Work 4.0. The latest study came out in August. In it, the University of Duisburg-Essen published figures that prove the middle class in Germany is shrinking. And has been for 15 years. At the same time, the proportion of low earners has risen. What is worthy of note, however, is not the shrinkage, but its circumstances, as things are going well in the country. For years, Germany has been like an island in the ocean of economic storms. Despite the financial crisis and that of Greece, unemployment has halved in recent years, with a new record for employment likely to be set in 2015 – 43 million people in work.

The only question is: what kind? Globalisation has been destroying hard-earned structures for years. Germans reacted to this by becoming more flexible and adjusting their pay downwards in line with their unequal competitors in the east. The consequence: profits from productivity and average income have gone separate ways in the last 15 years – in the study period, income stagnated while value creation grew continually. Not just in Germany. From 1990 to 2009, the proportion of wages to national income fell, in some cases significantly, in 26 of the 30 OECD countries. The equity owners have benefited. They in particular profit from the revenue of the increasingly borderless businesses, because money flows easily across all borders.

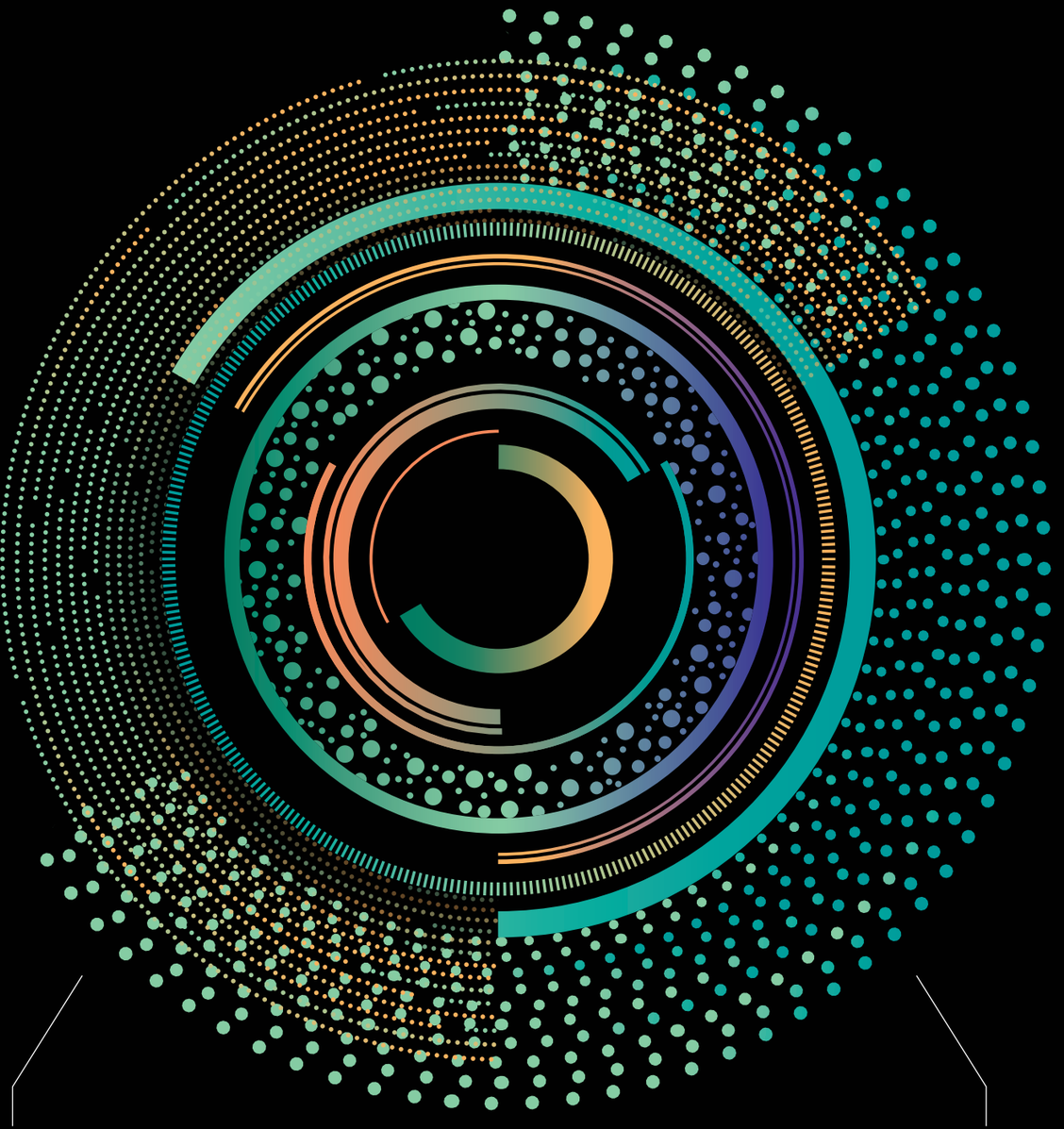
In fact, globalisation is only one side of the coin, with the other being digitalisation. It is nothing less than the fourth industrial revolution – following the steam engine that replaced workmen, electrification and conveyor belts that made mass production possible, and the invention of the computer, allowing automation. And digitalisation is just getting going, because computer storage capabilities are doubling every 18 months. In addition, more and more data is flowing around the earth faster and faster. If the global information flow was 12 petabytes a month in 1998 (one petabyte, PB, is equal to the storage capacity of 1,000 one-terabyte hard drives), the estimated total in 2018 will be 132,000 PB. A data mound that would be enough to stream every film ever made will flow through the Net every three minutes. In the current year alone, as much information will be newly saved as was created in the last 30,000 years. Even today, data-processing centres consume 2 % of all the energy produced in the world. In May, the German Federal Ministry of Education and Research published Foresight – a document explaining over several hundred pages how we will live and work in 2030. How to summarise it in a few key words? Personalisation. Networking. Digitalisation. And inseparable from that: big data. But what exactly does that mean for us? Up to now, there has been an unspoken promise from the state to its citizens: if you are educated, you will find a job. The better the education, the better the career and the higher the salary. But what happens if that is no longer the case? If there are people who lose out? If there are a lot of them?

Even today, a two-figure percentage of tax returns are no longer processed by humans, but rather software that searches for inconsistencies – regardless of whether the tax authorities want to admit it. The idea behind it is to ensure that staff have time available for more difficult cases. But who is to say that it will stay that way, and computers won't simply be doing it all in a few years' time? Wasn't tax inspector once a safe career choice? Or: studying business studies and then taking on a banking apprenticeship. Nothing can really go wrong there. Or at least, that was the case for a long time. But anyone who still thinks that way is overlooking the fact that Google, Facebook and PayPal in particular have already infiltrated the market for payment services. Who needs a bank branch when they can do everything on their computer? Who needs lorry drivers when there are self-driving cars? Or retail salespeople when each shelf can order more sliced bread on its own?

The fact that technology wipes out jobs is not news. Every industrial revolution has blown away hundreds of thousands of them like a hurricane and left few behind. But, in the past, the majority of them were poorly paid jobs. And the destruction created space for new ones.

What new opportunities does an Internet platform create? Can the armies of self-employed taxi drivers and spare-room landlords even out what is being lost elsewhere? If taxi drivers and hotel staff who were previously liable to insurance deductions as part of their employment are replaced by a new generation of badly paid and collateralised freelancers? That would mean that for many what was a nice little additional income would suddenly become the basis for their livelihood. And the social security systems would no longer function, because no one would be paying into them.

Researchers at Oxford University examined the future security of 702 careers in a study completed two years ago (*The Future of Employment*). They came to the conclusion that almost half of them will be eliminated by digitalisation. For example, the authors of the study, Carl Frey and Michael Osborne, believe that around one in two programmers and 95 % of all clerical assistants will become superfluous. Another study, conducted by Babson College, Massachusetts, a university for company founders, assumes that 40 % of all today's major companies will no longer exist in ten years. The reason is that pure knowledge can be made available much more quickly and especially more



Trends

- *Binary world: massive developments in sensor technology and data processing are making the world a programmable system*
- *Increase in intelligent machines and systems: »technologification« at work is replacing people as employees*
- *Collective organisation: technologies and social networks are changing methods of production*
- *Globally networked world: globalisation requires flexibility and adaptability*
- *Extreme lifespans: increased life expectancy is changing learning processes and careers*
- *New media: the multimedia technologies of the future require new forms of media expertise*

Key Skills

- *Social intelligence*
- *Flexible thinking*
- *Logical thinking*
- *Trans-disciplinary interaction*
- *Intercultural expertise*
- *Creative ways of thinking*
- *Virtual cooperation*
- *Cognitive resilience*
- *Solution-oriented thinking*
- *New media expertise*

The key skills are presented in graphical patterns. The colours symbolise global trends. The combination of key skill and trend shows which capabilities we need to survive in the future job market.

analytically by computers. Thus, for the first time in the history of work, in future there is a threat to jobs that are considered typically middle class – »white-collar jobs«.

»Innovations can make the economic cake bigger. But there is no law of economics that guarantees all people will profit from the developments«, says economist Erik Brynjolfsson from the Massachusetts Institute of Technology (MIT). »A relatively small group get the biggest benefit.« Namely, those with the greatest computing capacity.

And also those who can do something for which machines are not empathetic, creative or strategic enough – such as nursery teachers or carers. The Oxford study also sets out how we can stand out and set ourselves apart from algorithms in future: team spirit, moderation, mental flexibility and cross-sector thinking. That which is today considered a nice additional qualification will soon develop into a decisive advantage. Relatively high security is also offered by a career that can meet customer wishes as individually as possible. That applies to both ends of the scale – so alongside doctors, judges and engineers, gardeners, hairdressers and waiters are also not at risk of losing their jobs. In any case, tradesmen have little to fear according to Carl Frey and Michael Osborne. »People who can paint well, lay electric cables or do gardening work will not be replaced by robots in the foreseeable future«, agrees Ortwin Renn, Professor for Environmental and Technological Sociology at the University of Stuttgart. Renn calls them »production elites«. But they urgently need to be better paid, we must »invest in them«, says Renn.

And the others? Those who are currently the middle class? The majority? They need to be aware that a nine-to-five job will become increasingly passé. Self-employment will increase, with permanent employment positions going in the other direction. The world of work is become more flexible and less certain. There will be different working models within a company: home office, flexitime, job sharing, project-related work, crowd work – i. e. work completed entirely via the Net. All of this has already begun, and the pace will increase.

»One of the questions in future will be how to manage innovative ability«, says Ayad Al-Ani, a researcher at the Alexander von Humboldt Institute for Internet and Society (HIIG) in Berlin. Because the future will be about problem-solving expertise, he says, networking will be more important than specialist knowledge. Communication experts will be in demand – in the end, CVs will involve less and less stability, he believes. But that won't be an issue, he continues, because digitalisation will probably lead to companies having to offer more: co-determination, interesting projects, variety and also, of course, more money: »The classic company hierarchy has reached or perhaps even passed its peak«, says Al-Ani. Examples can already be found today in places where digitalisation is very advanced. Who can tell who's the boss when everyone is wearing a hoodie?

Innovative ability. Problem-solving expertise. Communication experts. It sounds like everything and nothing. And who needs millions of communication experts (who will all end up running a nail studio) anyway?

So for those who only have their work to offer, especially those in the middle, things could continue to go downhill. Harvard economist Richard Freeman can even see a form of feudalism approaching in the digital era: »in which the rich dominate markets and governments like in the Middle Ages.« But how do you prevent uncontrolled structural change that costs jobs, destroys social structures and thus ultimately turns democracy into an oligarchy?

Technophobia is not a solution. It is as old as technology itself, and even the Silesian weavers who protested against the introduction of new technology in the shape of looms and the accompanying massive deterioration in their working conditions in the summer of 1844 were not able to prevent the change in structure – even after the start of industrialisation, it still took decades for employees to be paid more. And what's more: that had nothing to do with the new technology. It occurred because a new political power had managed to become involved – the labour movement. The central question is therefore not about the future of work, but rather: how can profits of productivity be sensibly distributed in future?

Harvard economist Freeman wants the employees to participate in the companies: via shares, options and profit sharing. »All companies that work with automation already have such models«, he says. Indeed, the model is in operation in Silicon Valley, for example, but also in the old economy at companies such as Volkswagen. MIT researcher Brynjolfsson, on the other hand, suggests an unconditional basic income – and points out that this is absolutely not a radical left-wing idea, but simply economically sensible. In order to sell goods, he says, one needs a large, stable and prosperous middle class. Advocates of a basic income have included people like Milton Friedman, Friedrich August von Hayek and Richard Nixon, certainly not socialists. Regardless of that: something similar already exists in Germany. It is called a tax allowance, and is 8,472 euros in 2015.

Henning Meyer, an academic at the London School of Economics, brings subsidisation of jobs by the state into the conversation – a second job market, financed by

citizens via taxes, that picks up those who do not make it into the primary job market. He says »The technology dividend must be redistributed,« and feels the state has to finance such jobs, but can do so without directly employing those people.

Most academics agree, however, that something must be done. In the medium term, digital networking will not only affect the world of work, but will also radiate deep into our lives. The borders between work and free time will become blurred – and that too can already be seen today.

Günter Voß, industrial sociologist at TU Chemnitz, calls this »removal of borders«. Workers will be given more room to design things themselves. Sounds good, but: »Ultimately, it leads to the employees becoming fully involved in gainful employment.« Voß fears that the reorganisation of structures will mean work taking up more and more space in our lives. If we can already organise everything with a smartphone today, that also means: constant availability. It is possible to work at any time and from anywhere. There is a danger that all of life will become economised, with free time subordinate to the career. Do I really just go jogging because I like the exercise? Or am I actually hoping to gain an advantage over overweight colleagues through increased attractiveness? And am I genuinely interested in the text I am reading for work on the weekend? What is driving this development? The constant fear of slipping out of the middle class.

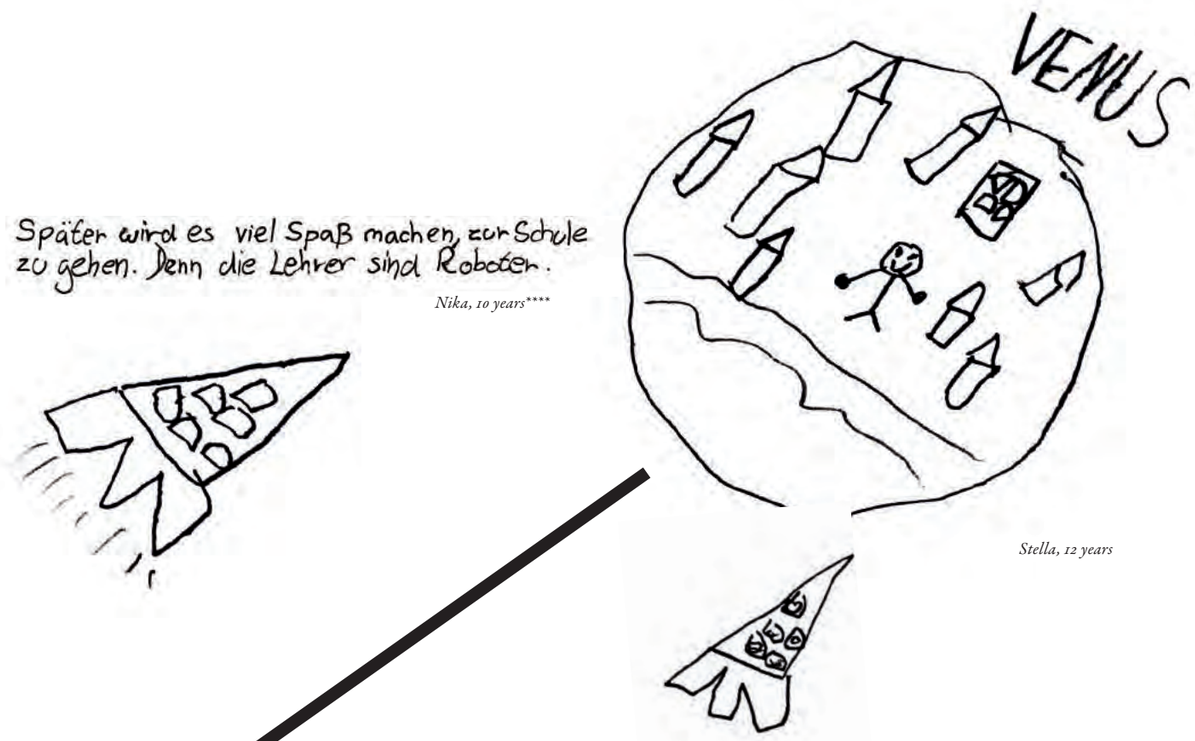
Regardless of which measures are ultimately selected – be it basic income, job subsidisation or employee participation – changes cost money initially. However, our society is richer and more productive that at any time in history. The money is there. The question is: what do we do with it?

Judith Stoletzky *(text)*

Fifteen. When I grow up… It is often said that the children of today are overprotected and spoiled, that they lack independence and that they are antisocial. Under the constant gaze of helicopter parents who hover watchfully over their brood, kept far away from anything bad or dangerous, they will barely be able to develop their own worldview, initiative and sense of responsibility. But if you ask the Neles, Tessas, Stellas and Karls of this world how they imagine the future, their visions are not remotely naive or egocentric. Kids' dreams reveal them to be realists. Nowadays, girls don't dream of being a princess in a castle, owning a horse farm or having the longest blonde curls. Nor do kids want to become a superhero who everyone worships, or a millionaire who can buy whatever they want. Their visions are serious, not rose-tinted. Kids have understood that the world needs to be saved first before the future can become one big, amazing adventure playground. So that's what they intend to do – and it's not just a dream.

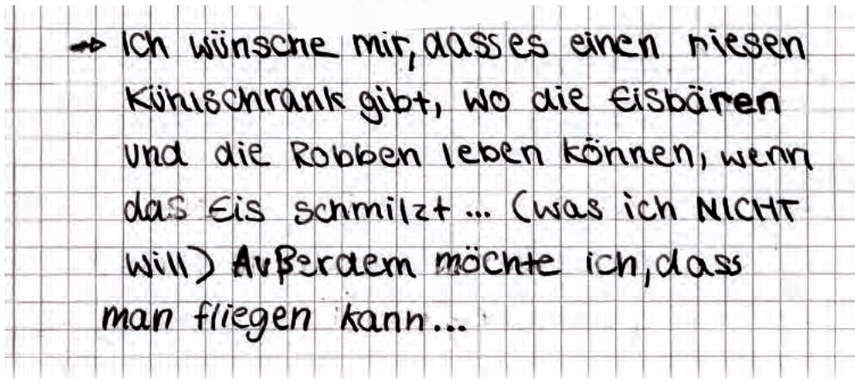
*Stella, 12 years***

*Karl, 7 years****

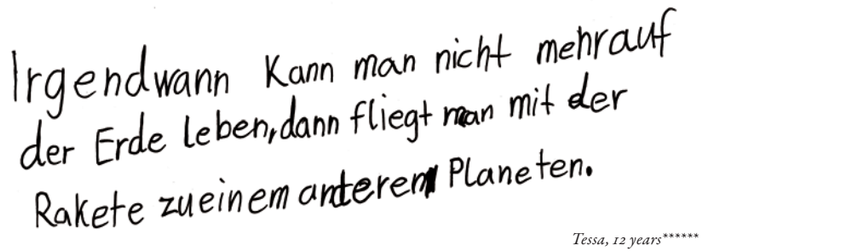


*Nika, 10 years*****

Stella, 12 years



*Nele, 12 years******



*Tessa, 12 years*******

* Earth ** In the future, islands will have lots of skyscrapers. *** Humans shouldn't hurt the Earth. **** It will be a lot of fun to go to school one day, because robots will be the teachers. ***** I wish there were a really big fridge, so all the polar bears and seals could live in it, once all the ice melts… but, really, I want to be able to fly. ****** One day we won't be able to live on earth anymore, and we will have to fly in a big rocket to another planet.

Ivan: jacket: William Fan, shirt: Boss Orange over Zalando

Lisa: coat: William Fan, shirt: Closed

Sarah Kühl *(photos)*,
Ava Carstens *(styling)*,
Catrin Florenz *(text)*

Sixteen. Gender blenders. The days in which heroic men had to protect delicate women who were constantly on the verge of fainting from all the world's hardships are over, thank goodness. Gender roles are becoming more fluid. Nowadays, men don't just take hard falls on the sports pitch – it can simply happen at any time, and strong women will be waiting to catch them. If they feel like it at the time.

That's exactly what being a man or a woman will consist of in future: whatever we feel like at the time. Gender roles will vanish. Everyone can be as tough or delicate as they want. We can have 12 children, become the head of NATO and crochet oven cloths on the side. We can head a construction crew while sporting Chanel Rouge Noir on our toenails. We can stand on a chair screaming because there's a mouse, and then open a beer bottle with our teeth to get over the shock. Our biological gender simply can't dictate anything to us any more.

Once gender ceases to matter, we will see each other as people, as complex beings with many facets – a mix of masculine and feminine parts that we assemble ourselves and shake and stir until we're happy with the result. In future, we'll do whatever takes our fancy: we'll fall in love with whoever we want, and wear whatever we want. Which will also be incredibly practical: because no matter who we spend the night with, the next morning we're guaranteed to find something in the wardrobe that looks great on us. Sounds good, doesn't it?

Iwan: pullover: Wood Wood over Zalando, skirt: Black Velvet Circus, coat: Tiger of Sweden

Lisa: top: Black Velvet Circus, trousers: Tim Labenda

Iwan: pullover: Armoire d'homme, shorts: Umasan, shoes: Doucal's over Zalando

Lisa: dress: Preach, shoes: Björn Borg

Iwan: coat: STUTTERHEIM, shirt: BOSS over ZALANDO

Lisa: coat: STUTTERHEIM, shirt: CLOSED

Iwan: top: Ethel Vaughn, pullover: Howlin', skirt: Ethel Vaughn, trousers: Closed

Lisa: pullover: Howlin', top: Ethel Vaughn, skirt: Henrik Vibskov

photographer: Sarah Kühl *www.sarahkuehl.com*
styling & production: Ava Carstens
hair & make-up: Linda Sigg *www.ninaklein.com* using Balmain
styling assistant: Michael Lis
models: Iwan *www.m4models.de*, Lisa Randall *www.modelwerk.de*

Lisa: pullover: Marc O'Polo over Zalando, shirt: Umasan

Iwan: pullover: Ethel Vaughn, shirt: Umasan

Valerie Voss *(text)*,
Tom Schuster *(illustration)*

Seventeen. Unidentified flying insect. The bee is popular. It is considered to be hard-working, generous and well organised. But it is much more than just an eager organiser. For example, among other things, the *Apis mellifera* – as it is known in research circles – can also be used to track down illegal substances such as drugs or explosives. In the *Stealthy Sensor Insect Project*, financed by the Pentagon, scientists are training the ambitious workaholics to become sniffer bees. They have also made a career as pioneers of space travel on Challenger, where they succeeded in building a normal nest in zero gravity. Entomologists also attest to bees' sense for numbers and faculty of abstract thought. But the most important task performed by the intelligent insects is probably the pollination of blossoms. Alongside cattle and pigs, bees are the third most important productive animal for people. In Germany alone, around 85 % of all agricultural plants are reliant on their hard work. Each bee pollinates up to 3,000 blossoms per day.

But in recent years their numbers have fallen more and more, with a mysterious spate of bee deaths affecting many nations. The causes were a species of mite carried over from South East Asia and the increased use of pesticides. In the award-winning documentary film *More than Honey*, the extent of bee deaths can be seen particularly clearly in parts of China, where the beneficial brown and yellow striped organism has already disappeared from entire regions. People have therefore had to take on their work and pollinate the blossoms in the large monoculture fields themselves. As part of the *Share The Buzz* campaign, the supermarket chain Whole Foods in Berkley, California, made clear how bland a future without bees would taste by removing all foods from their salad bar that would not exist were it not for the numerous swarms of bees and other pollinators. Imagine how dull our menus would be without apples, cucumbers, avocados, tomatoes, carrots, onions, strawberries or beetroots.

Scientists at Harvard University in Cambridge are currently developing an alternative to the buzzing original in the form of the *RoboBee*. Originally conceived for people searches and rescue operations, the synthetic high-tech insect could take over the role of bees in future. It is the size of a one-euro coin and weighs just 80 milligrams. »There's no way it can replace real bees. But a metal-sheet bee could be used in any weather conditions, for example, and therefore provide additional support,« explains Johann Gruscher, President of the Austrian beekeepers' association.

To ensure that the use of *RoboBees* in our meadows and fields remains technological theory, we need to save the bees. And more and more people are in fact displaying interest in their continued existence. For example, in the mould of urban gardening, urban beekeeping has recently become a trend. A prominent beekeeping example is Flea, the bassist of the Red Hot Chili Peppers. He takes care of 200,000 bees in his garden. And people who take on the hobby in a responsible manner can make a genuine contribution to saving the bees.

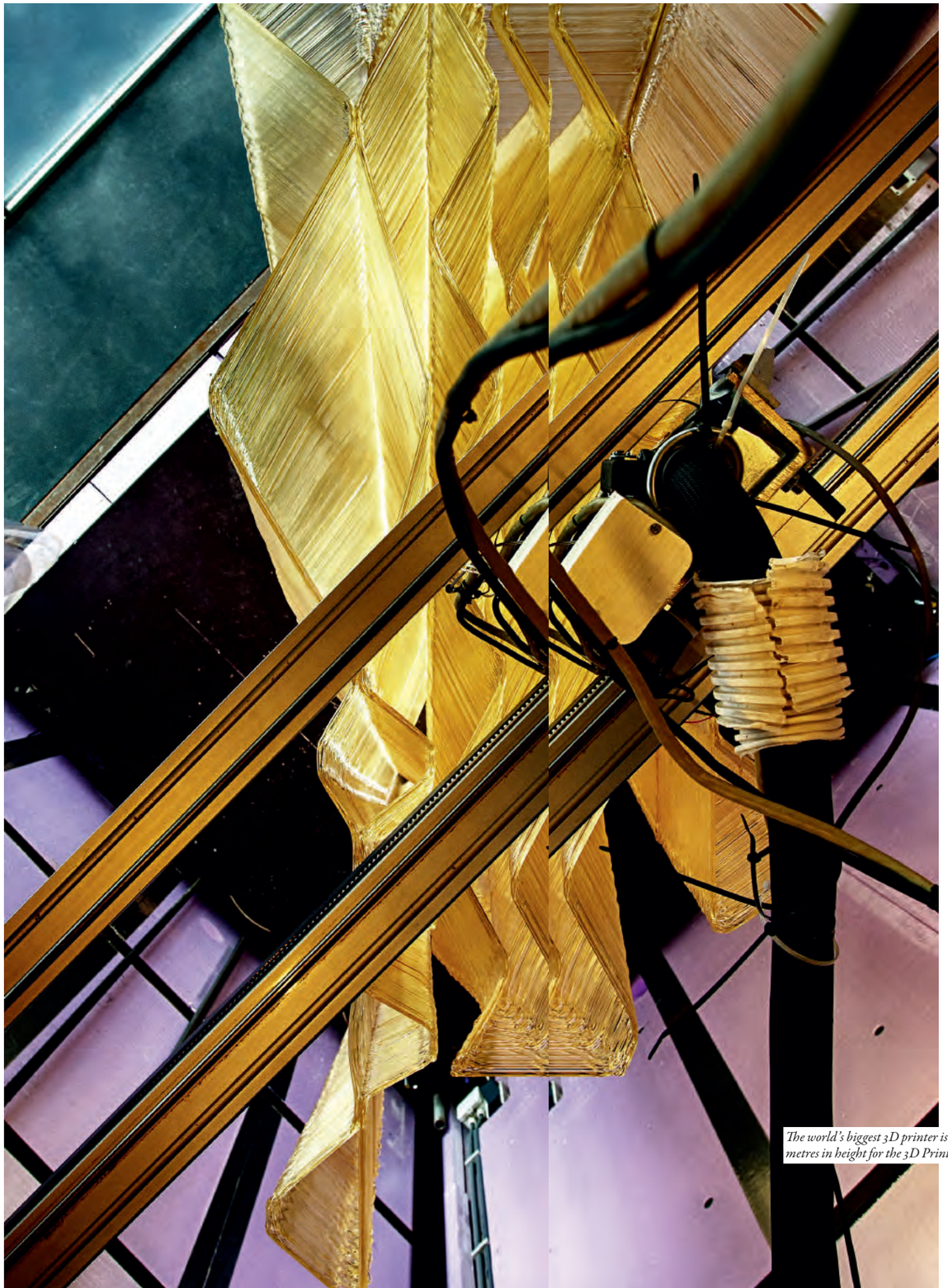
For anyone who wants to learn more about bees' capabilities, we recommend the book *Die Biene – Eine Liebeserklärung* (The Bee – a Declaration of Love) by Katja Morgenthaler, published by Greenpeace Media.

Eva Bolhoefer *(text)*

Eighteen. At home in the future.

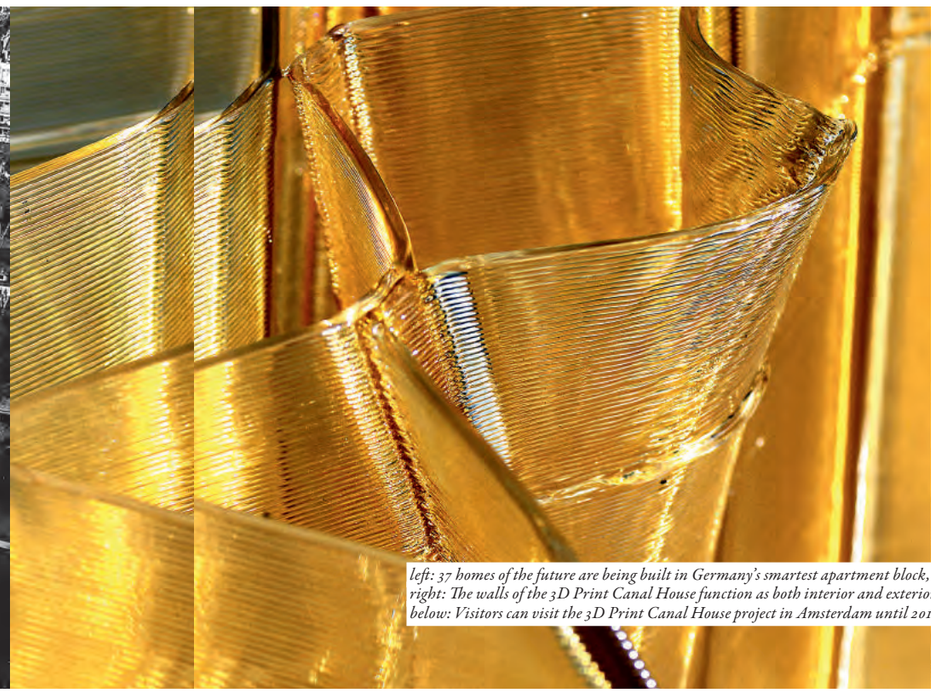
Stingy plug sockets, empathetic heating, speaking toasters, virtual locks: our household appliances are coming to life, heralding a technical revolution in our homes. One place where proof of this could be seen was at the *Consumer Electronics Show* in Las Vegas, where this year for the first time there was a special exhibition devoted to *smart homes*. Meanwhile, the US market research company Gartner predicts that by 2020 there will be 25 billion connected household appliances across the world.

Xing founder and Internet millionaire Lars Hinrichs is also convinced that smart homes are the future. He is currently planning »Germany's smartest apartment block« in Hamburg's Rotherbaum district. The businessman has dubbed it the *Apartimentum*, and is installing everything that today's innovation lovers yearn to have in the smart homes of the future. Accordingly, it will feature a whole host of electronic assistance systems. For example, imagine the tenant of the future: he has to brave the cold autumn wind to get to his car after a busy day at the office, so he takes out his smartphone and uses an app to start running his bath remotely. As he drives into the underground car park, the lift has already registered his smartphone via Bluetooth and sets off to collect him. The pesky task of searching for his keys is also a thing of the past – the virtual lock opens as if by magic, ushering the tenant of the future into his pleasantly heated home where even the thermostat has automatically adjusted to his habits. As soon as he opens the door to the bathroom, he is greeted by his favourite fragrance and the music of his choice plays from the speakers. He can even hear it underwater at optimum sound quality.



The world's biggest 3D printer is being used to make walls of up to six metres in height for the 3D Print Canal House in Amsterdam.

Lars Hinrichs' US counterpart is software developer Ian Mercer. His home is also connected from top to bottom. In his basement is a big computer, the nerve centre of the house, to which all the cables that run invisibly through the walls are connected. It controls the heating, the lighting and the ventilation. Mercer has been fine-tuning the automated systems in his home for over a decade. But we shouldn't overdo it, in his opinion. Who really needs a digital photo frame with detectors that will discolour the family photo if there's not enough oxygen in the air? Mercer is much more interested in discovering how technology can be used to really make everyday life easier. Perhaps the most beneficial feature of his smart home is its energy efficiency. Sensors and motion detectors in the floor detect whether there is currently anyone in the room or not, and regulate the heating and ventilation accordingly.



left: 37 homes of the future are being built in Germany's smartest apartment block, the Apartimentum in Hamburg.
right: The walls of the 3D Print Canal House function as both interior and exterior walls. The material is up to 80 % biodegradable.
below: Visitors can visit the 3D Print Canal House project in Amsterdam until 2017.

photos: Martin de Bouter, Olivier Middendorp via Hollandse Hoogte, PR

Gradually, this kind of smart technology is making its way into everyday life in small doses. Take Airbnb, for example, the community platform for booking and letting out places to stay. From the accommodation ads on the site, it's clear that smart services are becoming increasingly popular with travellers. »There's particularly high demand for places to stay which offer innovative integrated tools that make everything run even more smoothly,« according to Julian Trautwein, Press Officer at Airbnb Germany. »For instance, virtual locks make the handover of keys much more practical. You simply get sent the PIN code on your smartphone and then you can open the door with an app,« he explains. »However, people in Germany are still sceptical about such technology, unlike in the USA. They still need to be convinced that it's really secure.«

The question of security is crucial. What happens if your smartphone, containing the PIN, ends up in the wrong hands? »Then the person can get into your home just the same as if they had a physical key,« explains Lars Hinrichs. But, he points out, in that situation you would only have to change the password – not the entire lock. And even if there's a power cut, you won't be left stranded helplessly outside the locked door – because the lock has its own battery with enough power for at least 14 days. But as well as smart household appliances, the technological revolution in our homes also extends to the buildings themselves. For instance, arduous manual labour might no longer be required to construct buildings in the future – they could simply be printed out. Scientists at the University of Southern California with architectural ambitions are already

developing a robot that will be able to build a house out of concrete within 24 hours, a 1,100 m2 villa was recently built in China in two days using a 3D printer and the 3D Print Canal House is currently being built in Amsterdam. This means that in future, the cost-intensive lifetime mission of building your own home could gradually become a weekend project. However we feel about the numerous possibilities – one thing that's certain is that the technology will continue taking up residence within our four walls. Now we just need to get used to it.

The British-Irish artist Neil Harbisson is the world's first cyborg to be officially recognised as such by a government.

Meric Canatan *(illustrations)*,
Laura Hamdorf *(text)*

Nineteen. Upgrading the senses.

The picture shakes. Every now and again, a blonde bowl cut with an antenna comes into view. Tablet in hand, Neil Harbisson makes his way through the overcrowded bar in Melbourne. He is looking for a suitable spot to conduct our Skype interview. The 33-year-old with British and Catalan roots is currently in Australia to visit friends and give some talks. Talks about what it's like being a cyborg. Cyborg: the word conjures up images of dystopian science fiction. It might make you think of the Borg from *Star Trek*: part organism, part machine, all nasty – right down to the last electrode. Neil has found a quiet spot and is smiling into the camera. He looks friendly and harmless. The antenna curves around from the back of his head to his forehead, like a small street light. It looks a little bit like the esca of an anglerfish from the depths of the ocean. A camera with a sensor is attached to the end of the antenna. Neil developed the device, called the eyeborg, himself with the help of several scientists, and has been wearing it since March 2004. The reason: Neil has suffered from achromatopsia since birth, which means he can only see the world in shades of black, white and grey. The eyeborg allows him to perceive colour – and in a truly unique way: the camera is connected to his auditory cortex and translates every colour that enters his field of vision into a tone on the chromatic scale.

»You sound like G and F sharp at first glance," he says to me, and asks me to bring my face a little closer to the camera. »Your eyes sound like C sharp, your skin is F sharp and your lips are E. You have lots of tones in your face.« I wonder whether that's good or bad. Neil continues to explain how he sees the world: »The sky is a very high C sharp, grass is an A, taxis are usually a G.«

By training himself, he has acquired absolute pitch and can match 360 different tones to 360 different colours. This means the eyeborg does more than merely compensate for a handicap – Neil's perception of colour is actually more acute than that of other people. He also uses his ability in reverse: the 33-year-old cyborg regards himself as an artist and paints what he hears. A song by Justin Bieber, for example, or a speech by Adolf Hitler. They are both colourful images – Justin Bieber predominantly yellow and pink, while Hitler is purple and green. Neil's antenna provokes a range of responses from other people. Some are curious, but others are openly hostile and say it is against nature. Neil is used to adversity. He had to fight hard to be allowed to use a photo of himself with his antenna in his passport. Thanks to the support of several doctors, he was able to convince the British authorities that the eyeborg is part of his body. Since then, he has been the world's only officially recognised cyborg. In order to minimise the barriers for likeminded individuals, Neil founded the Cyborg Foundation in Barcelona in 2010. The foundation assists people with becoming cyborgs. It campaigns for their rights and fights for the acceptance of human-machine hybrids. The foundation was co-founded by Catalan choreographer Moon Ribas, who has a seismographic sensor in her elbow that transmits vibrations whenever an earthquake occurs somewhere on the earth. She also wears earrings that vibrate if there is movement

in her vicinity. Neil Harbisson and Moon Ribas are now far from being exotic exceptions. Another cyborg association was founded in Berlin in 2013 by the blogger Enno Park. Like Neil, he uses implanted technology to compensate for a medical handicap. Enno is almost deaf. He wears a cochlear implant behind his ear that is connected to his auditory nerve. This artificial hearing device doesn't just replicate a healthy sense of hearing – it can go even further. For example, it can reduce background noise and increase the volume of the person he is talking to. Enno could even set the implant to hear ultrasound. The members of the association, Cyborgs e. V., include IT specialists, artists and academics working in the arts and humanities. They are all fascinated by the idea of expanding their senses by technological means. They regard cybernetics as the next logical step in the evolution of humanity. They also experiment on themselves. Some of them have had magnetic plates implanted in their fingertips, allowing them to sense electromagnetic fields: their fingers tingle if microwave ovens, speakers or induction hobs are used nearby. The implants provide them with a sixth sense.

Cybernetics can also become a component of a smart home – like in the case of Tim Cannon from the USA, a self-described »biohacker«, who has a chip under his skin that measures his body temperature, heartbeat and blood pressure. The data is transmitted to his smartphone, which detects his stress level, and when he comes home his smart lighting configures itself to his current state. Practical, admittedly, but the chip, which is the size of a cigarette packet and is clearly visible beneath the skin of his lower arm, looks painful. Employees at the Epicenter office complex in Stockholm have significantly smaller chip implants, which are inserted using a syringe. These chips allow them to open all the doors in the building and operate the photocopier. The chips also act as an identification tool, meaning there's no more need for passwords.

Scientific research is also pushing cybernetics forward. The smaller and smarter that technologies become, the more possibilities there are to implant them into the body for medical purposes. The German company Retina Implant is currently working on a digital retina that can be controlled like a computer display. Cybernetics is taking human self-improvement to new extremes. It is the next step for the quantified self movement, which uses self-tracking devices like smart wristbands or smart watches to count calories, measure sleep or recommend optimum fitness exercises. It's long been about more than merely compensating for medical deficiencies. It's about acquiring new senses and abilities.

Neil has continuously upgraded his eyeborg. For two years, it has been connected to the Internet. This allows him to perceive colours from other parts of the world – or even to connect to a satellite and perceive colours from space. He can even make telephone calls with the eyeborg – without using his ears. »The Internet is my new sense,« he says. The next planned upgrade: Neil wants to be able to control the antenna with his thoughts in future. Does technology add sex appeal, Neil? He thinks about it. »I think some people see it that way, yes. In any case, an attraction exists between cyborgs, since they share the experience of having had their senses expanded. Cyborgs marry cyborgs.« The cyborg trend is still in its infancy. There's no doubt that it will make waves – but to date, it's only been possible to speculate about the size of those waves. One of those who thinks the waves will be very big indeed is the American futurist Ray Kurzweil: »Nobody has to die! We can all live forever! And I will be the first one to do so!« he triumphantly proclaims in his talks. His prediction is that by 2029, the boundaries between human brains and computers will have dissolved – a condition he calls »the singularity«. By 2024, we will be able to repair and optimise genes. And by 2045, we will be able to insert miniature robots into our bodies to replace damaged cells. The path to immortality sounds simple – but as crazy as Kurzweil may seem, Google had sufficient faith in his genius to appoint him Director of Engineering in 2012 and to help him to found Singularity University in California in 2008 in conjunction with the NSA. Neil's prediction for the future isn't as specific as Kurzweil's, but it is no less audacious for all that: »In the future we will live in outer space. We need to modify our senses and bodies so that as a species we are capable of surviving out there,« he says. He's completely serious. We finish our interview, and the screen goes black.

Living in space, immortality – they must be crazy, these cyborgs with their esoteric predictions. But who knows – perhaps in 20 years I'll already be laughing at my naivety. *cyborgism.wix.com/cyborg*

The Catalan artist Moon Ribas is co-founder of the Cyborg Foundation. Together with Neil Harbisson, she campaigns for the rights of human-machine hybrids.

illustrator: Meric Canatan *www.mericcanatan.com*

Travel Atomator
Time-consuming intercontinental flights and tiresome security checks at the world's airports are finally a thing of the past with this revolutionary invention. The Travel Atomator can simply reduce cosmopolitan jetsetters to their atoms and beam them from Kiribati to East Timor and back again. The Starship Enterprise is mere science fiction by comparison!

Oliver Schwarzwald *(photos & concept)*,
Elena Mora *(styling & concept)*,
Sebastian Storck *(text)*

Twenty. The next big things are small. The computer nerds at Google and Apple are still planning their next groundbreaking gadget, but the LOVED&FOUND innovation laboratory has already developed five high-tech devices that will make the Internet look like it was invented by the US Department of Defence in the 1970s. Your move, Silicon Valley!

Meteor Master
To create the starry sky of your dreams, simply fill the Meteor Master with brass or gold and press the button to enjoy a display of fireworks that look like shooting stars. The blue button creates a romantic atmosphere, while the green one will ignite true passion.

Dream Machine
Freud would have loved using this futuristic gadget for his psychoanalysis. The Dream Machine cuts out the need for talk therapy and puts the subconscious straight down on paper. How? Simply go to sleep, dream and then press »Print« when you wake up. The dreamcatcher antenna, dream accumulator and dream visualiser will take care of the rest. It's like a dream come true!

Bad Memory Eraser
Your head is pounding, and images of burly bouncers with angry faces and the despairing expressions of unfortunate taxi drivers are replaying before your mind's eye. A clear case for the Bad Memory Eraser. The moments you'd prefer to forget are transmitted to the device via the headphones. It doesn't just look like a sponge – it is one. Once it's absolutely saturated with embarrassing memories, it can be wrung out and then conveniently washed at 40 degrees Celsius.

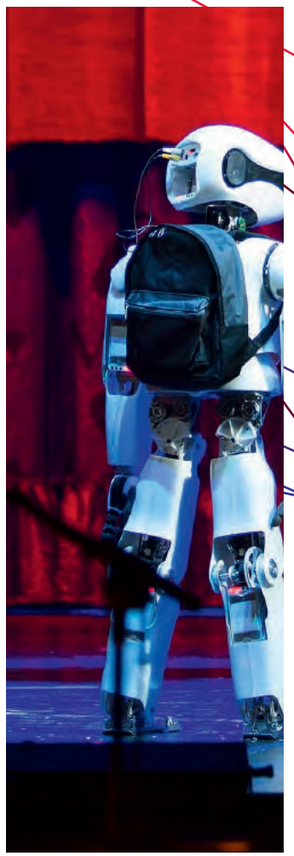
Always Sunny Machine
The weather is an extremely popular topic of discussion for those who are new to the art of small talk. Advanced practitioners use the Always Sunny Machine to make the sun appear on the horizon at the push of a button. The time this saves allows them to talk about the things that really matter in life: for example, the late running of the trains.

photographer: Oliver Schwarzwald www.oliverschwarzwald.de
styling: Elena Mora www.elenamora.com
idea: Julia-Christin Holtz

Laura Hamdorf *(text)*

Twenty-one. Machines like us. Ava is beautiful. 26-year-old Caleb is caught up in her seductive gaze in no time. In the film *Ex Machina* from British director Alex Garland, the feminine humanoid robot manages to deceive both Caleb and its creator Nathan. In the process, the enchanting machine, which takes its intelligence from search engine data, has only one aim: to do whatever it takes to flee the research laboratory.

Human-like robots such as Ava still provide material for science-fiction films today, while, simultaneously, research into artificial intelligence is constantly developing – and it is hard to predict where it is leading us. Will the machines of the future be friends or foes? An open letter from the Future of Life Institute (FLI), signed by many prominent scientists and computer experts, is also devoted to that question. It says: »Nowadays there is a general consensus that AI research is continually moving forward and that its influence on society is likely to increase – that the possible benefits are huge because, after all, everything civilisation has to offer is a product of human intelligence; however, we cannot predict what we could yet achieve once this intelligence is expanded by the tools of AI. For this reason, we need to explore how we can profit from it and how we can steer clear of the potential abyss.« The scientists, including the well-known astrophysicist Stephen Hawking, are calling for research into and answers to judicial, political and ethical questions with regard to AI research. A comparatively harmless example of AI is *iCub*. The humanoid robot looks like a four-year-old child, and its human-like physiognomy is designed to reduce fear of contact. *iCub* can crawl and listens to commands. In its head are 53 motors with which it can move its arms, legs, hands and hips. It can recognise people, touch objects and measure movements. More than 20 research laboratories worldwide were involved in its development. However, its capabilities have been programmed within it – in contrast to the robot *Myon*. It was constructed in the neurorobotics laboratory of the Humboldt University in Berlin and has numerous sensors and a hard drive with limited storage capacity. That means: Myon decides for itself what to store and what not. Its learning process is similar to that of a child, who sees, understands and imitates things. So far it can stand, walk a few steps, reach for objects and point to them. *Myon* plays a leading role in the Komische Oper Berlin's presentation of My Square Lady – a play about a robot that develops feelings.



The theatre of the future? The robot Myon plays the lead role in the play My Square Lady *at the Komische Oper Berlin.*

photo: Iko Freese *www.drama-berlin.de*

The automation provider Festo, meanwhile, is leading us into the animal kingdom – they build robots based on the example set by nature. A new one each year. Thus, among other things, a kangaroo has jumped through the halls of major robotics trade fairs, and mechanical seagulls and dragonflies have flown around. This year, it's ants. Small robot ants demonstrate how flocking behaviour works electronically. Driven by motors, they push small objects in front of themselves. If something is too heavy, as in real colonies, they call other ants to help – via radio signals rather than scent. The flocking behaviour shows how machines can be networked together, for example to increase productivity in industry. Smart robots that work more and more efficiently and, for example, can produce completely individual unique pieces in the factories of the future. Sounds efficient.

But artificial intelligence is also highly controversial, especially when it's a matter of life and death. The best example: military robots. They are a genuine revolution in military service, because they can attack in place of soldiers, break cover without difficulty and shoot more precisely. The battle robot Security Guard Robot 1 from Samsung subsidiary Techwin can follow its target over a distance of up to four kilometres. It is equipped with a machine gun with a rate of fire of 700 to 1,000 shots per minute and reloads the magazine independently. Once it detects a target, it first calls for them to surrender – i. e. to put their hands up. If the target does not do so, the robot opens fire. But what happens if the hands are not raised high enough or the robot misinterprets a gesture? Or if it is even manipulated and shoots wildly? Who is responsible? The Campaign to Stop Killer Robots is attempting to deal with that very scenario. The union of 15 non-profit organisations is demanding an international ban on autonomous military robots. They insist that machines should not be allowed to make life-and-death decisions independently. Ironically, one look at the top-level civilian robots is enough to recognise how far artificial intelligence still has to go. This can be seen particularly clearly in international robot competitions, such as the Robot Challenge. There, the teams celebrate their inventions frenetically if they manage to so much as scale a step on a staircase in slow motion. Often, the technology stalls, the machines lose their balance or they stand still and clueless in the middle of a labyrinth. What's more: to this day, no robot has passed the Turing Test of the intelligence of machines. In the test, a test person communicates via screen and keyboard with a person and a machine. If, after five minutes, the test person cannot decide which of the communication partners is the computer, said computer must be considered intelligent.

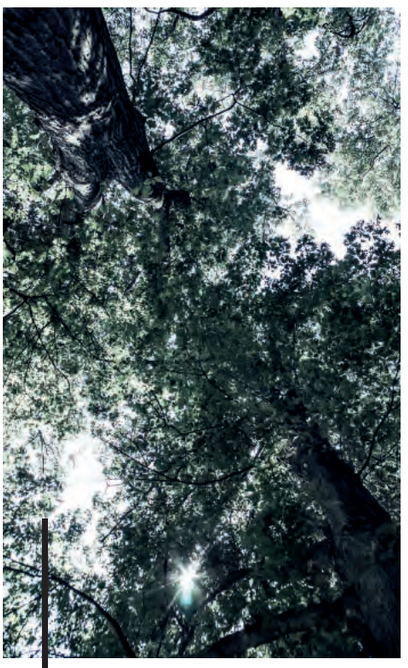
But intelligence is not only shown in eloquence and inference capability. Intelligence is also about reacting to actions; adjusting one's own body to the environment. That is still a problem, because due to their technological inner workings, robots are still very heavy and only have limited battery life, i.e. a small radius of movement. In addition, they suffer from motor deficiencies, because electric motors do not work the same way muscles do.

But that is not true in the case of the humanoid robot Roboy. It was developed in the artificial intelligence laboratory at the University of Zurich and can not only give kisses and compliments – it is also the first robot in the world to have an artificial skeleton. With its 48 motor muscles, Roboy sets new standards in terms of mobility – for example, it can regain its own balance if you bump into it. It represents »embodied intelligence«, an important aspect of artificial intelligence that recognises the body as a significant element of intelligence. Roboy aids medicine with its body that imitates the human skeleton – the plan is to use it to research muscle functions in order to help stroke victims, among others. The Human Brain Project by the European Commission, which aims to create a complete computer simulation of the human brain, was also created for medical reasons. It should allow better treatment of neuronal illnesses. The idea is that in five years the brain could be decoded and transferred to a computer. Whether the project will be successful is uncertain, as the brain, the most complex organ in our body, does not come to logical individual decisions like a computer, but comprises a number of totally different decision-making systems.

So should we view artificial intelligence with scepticism or anticipation? What is clear is that the more complex the cognitive functions of machines become, the more important it will become to handle them responsibly. There is therefore still a lot to be done in future in the area of machine ethics.

In the Robot Challenge, robots from all over the world compete against each other. An exciting spectacle – at least for their inventors.

photo: PR



Twenty-two. Flying foresters. The British start-up company BioCarbon Engineering has an ambitious goal: with the help of small drones, they want to plant a billion trees a year. The flying foresters analyse the cleared area and systematically distribute the *trees-to-be* across the sparse earth. Following a successful drop, the seedlings are monitored by the drones. Perfect futuristic forestry at *www.biocarbonengineering.com*

ED/rus

Twenty-three. Urban visions. Rachel Wingfield and Mathias Gmachl from London design studio *Loop.pH* are optimistic as far as the future is concerned. With good reason – after all, they play an active role in shaping the urban tomorrow: together with their team, the two outdoor artists design and implement installations in public spaces. Their aim is to make the city of tomorrow come alive today. For example, fluorescent plants serve as street lights. Green islands give people space to breathe again. In the process, *Loop.pH* combines natural elements with high-tech materials, design with scientific knowledge and pleasantness with usefulness. Urban visions of the future at *www.loop.ph*

ED/am

Twenty-four. Secret operation. A futuristic tracked vehicle slowly rolls its way across the asphalt at an abandoned Dutch air force military base. The geometric vehicle, which looks something like a spaceship, is an art installation by Dutch design studios Rietveld Landscape and Frank Havermans. As part of the *Secret Operation 610 Project*, it is intended to bring back the mysterious atmosphere of the Cold War. Thanks to the slow speed of the vehicle, the guests inside perceive the surroundings and the history of the military airfield in a new way. Travel though history in a spaceship at *www.raaaf.nl*, *frankhavermans.wordpress.com*

ED/eb

credits: 22. Maja Harden, 23. PR, 24. By RAAAF – Studio Frank Havermans, Photography by Michiel De Cleene, from The New Nomads, Copyright Gestalten 2015, 25. Future Perfect, 26. PR, 27. Wai Ming, 28. PR

Twenty-five. Future Perfect. The present has always had a way of appearing so ugly that you wish for a better future. The Australian independent magazine *Future Perfect* has given itself the task of summarising world events of the previous quarter in graphics – after the event and as unhurriedly as possible – and recommending some publications relating to world problems for further reading. In addition, the content of the articles is presented in a professional way, a few words are devoted to the author and the original source is pointed to, along with the number of minutes needed to read the article. In addition, there are wonderful picture essays and a few reports by the likeable editorial staff themselves that can rival the pieces in the New York Times or *Rolling Stone*, which is quite an achievement. Hats off to them. *www.futureperfect.today*

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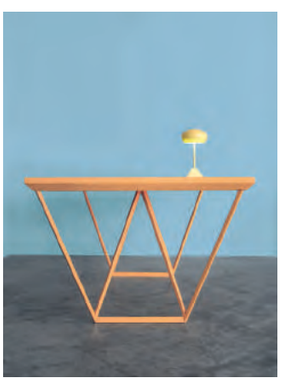

Twenty-seven. Techno-table. A table for tomorrow, today. The *Current Table* from designer Marjan van Aubel is equipped with electrified properties. Its integrated solar cells allow light to be turned into electricity. The energy-providing piece of furniture, which functions based on the same principle as photosynthesis, thus serves as a reliable source of energy for the gadgets of electronics-savvy digital natives. The special solar cells do not need energy directly from the sun, but rather can also store indirect light sources. You can find out more about the electricity-saving power furniture project at *www.marjanvanaubel.com*

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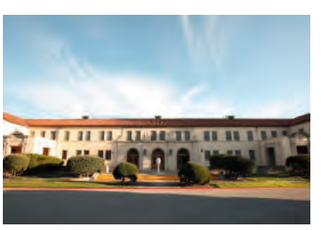
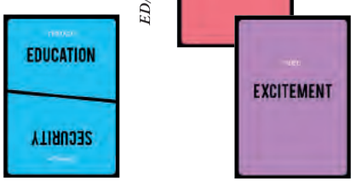


Twenty-eight. Future academics. Think universities are quiet places of learning where knowledge is carefully preserved? Singularity University in Silicon Valley is a rather different kind of alma mater, as it pursues bigger aims. It is a charitable organisation, research facility, think tank, training post and start-up centre in one, looking to the future rather than the past. Its mission sounds ambitious: mastering the challenges faced by humankind today with the technologies of tomorrow. For example, when it comes to remedying the water shortage in California. Solve the major problems of humankind at *www.singularityu.org*

ED/eb

Twenty-six. Creative card laying. *The Thing from the Future* is a card game for creative visionaries who prefer to rely on their own imagination rather than oracular tarot. The framework of the creative pastime includes several action cards that describe different future scenarios depending on how they are combined. Together, the players think up objects and circumstances to suit them, with the most fantastical vision being the winner. Things from the future at *www.situationlab.org*

ED/rus



Roderick Aichinger *(photos)*,
Sabine Cole *(text)*

Twenty nine. When new buildings come crashing down. Last century, utopian social projects created by architects and city planners for the benefit of the lower classes tended to reach for the skies. Several examples of what happens when these ideas come into contact with reality can be found in the ultimate high-rise city: New York. In the South Bronx district – whose insalubrious northern end borders Manhattan – impoverished residents used to live in small, dismal houses. Viewed from the outside, it looked like a cramped, chaotic mess that fell short of all modern standards. So the slums were torn down and the »city of the future« rose up: skyscrapers on wide streets, with parks in between. The uniformity and high degree of abstraction that this type of housing necessarily brought with it unleashed the destructive potential of poverty, crack and crime. You could say that reality brought utopia crashing down, if you want to be melodramatic about it.

In The *collectivity project*, Olafur Eliasson, the incisive Danish artist who has already graced New York with several of his installations, has gone one step further than his predecessors. He combines reality with utopia – the moment when it all comes crashing down is planned in right from the start. Eliasson set up a Lego building site in the shadow of the vast Hudson Yards construction site – where, incidentally, new skyscrapers are being built for residents who have absolutely no need to be liberated from cramped living conditions and are not afflicted by any other base material concerns. Tourists and New Yorkers can build an imaginary skyline there using white Lego blocks. The organic structures are stacked up higher and higher by children (every Tuesday and Thursday from 4 to 6 p.m.) and adults (every Wednesday and Friday at the same times). Intently focused, the kids work to the rhythm of the city's hammering, beeping soundtrack, adding to the »imaginary cityscape« as though they were just in any old playroom. They always make the same request when they hand individual parts to the accompanying grown-ups: »Put it somewhere on the top. Pleeeease.« And then the thing happens that was all part of Eliasson's plan: a child wriggles through the gaps in the buildings to attach a spectacular part themselves – and brings an entire corner of the building site crashing down with a careless movement. Unlike in the South Bronx, the disappointment caused by the failure of the construction project doesn't last long. A nice man from the NYC Parking Authority sweeps up all the blocks that are scattered on the floor, and everyone is pleased at the gap that has been created in the structure.

This means the skyline of this miniature utopian city district at the end of the High Line is constantly changing, much to the delight of the artist and the ambitious builders – but without disadvantaging anyone. Unlike actual real estate in Manhattan, which is now unaffordable even to members of the middle classes.

More info about the project at
art.thehighline.org/project/olafureliasson

The architect Kisho Kurokawa had a vision: flexible buildings that could be adjusted to the needs of the tenants. The individual box-shaped modules of the Nakagin Capsule Towers are decorated with round porthole windows. Depending on requirements, larger or smaller living or office units can be created inside the capsules.

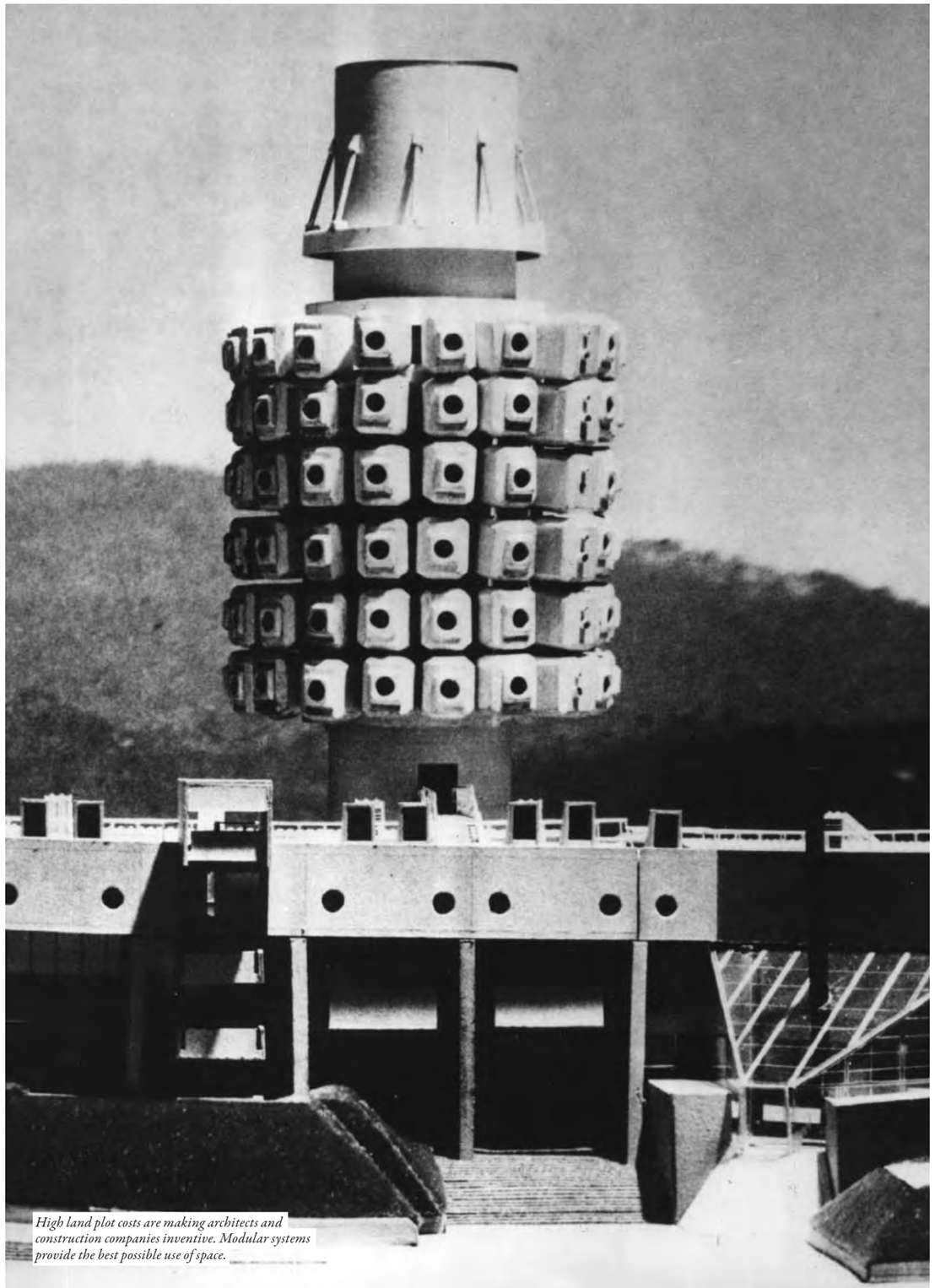
photo: Noritaka Minami from the 1972 Nakagin Capsule Tower, published by Kehrerverlag

Laura Hamdorf *(text)*

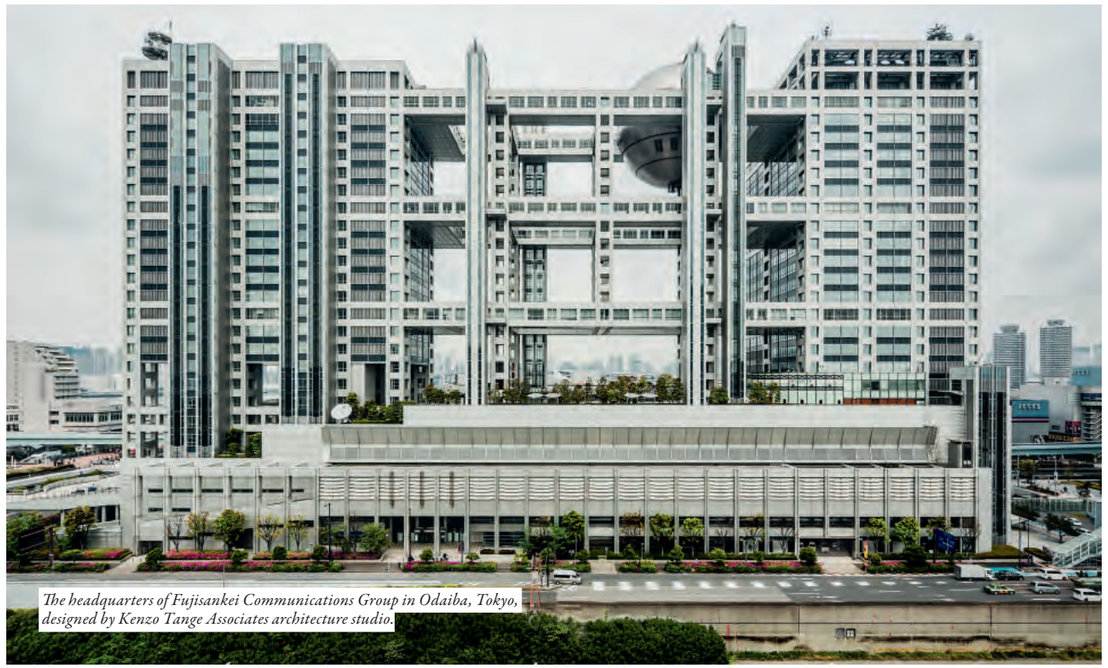
Thirty. Flexible flats. Imagine if the buildings we lived in were as changeable as we are. This architectural utopia is not a new concept. It is 55 years old. In 1960, a group of Japanese architects presented their manifesto *Metabolism 1960 – A Proposal for New Urbanism* at the World Design Conference in Tokyo. It was the vision of a completely new style of construction, in many ways more radical and future-ready than today's drafts. The protagonists of the movement were supposed to be acclaimed like pop stars shortly after.

Metabolism imitates nature. Just as cultures live in cycles, multiplying through births and decreasing through deaths, this style of architecture is intended to adjust to these cycles. To this end, compact living units are added to honeycomb-like structures, with buildings growing in height or stretching out onto water. Metabolism appears as imposing concrete entities that look like bleak visions of science fiction on the one hand and like not-so-unrealistic living concepts on the other – standardised, no-frills and somewhat dull, but undoubtedly fascinating.

The icon of Metabolism was completed in 1972: 144 capsules stacked on top of each other form the 13-storey Nakagin Capsule Tower. The units were produced by a company that otherwise manufactures containers for ships.



High land plot costs are making architects and construction companies inventive. Modular systems provide the best possible use of space.



The headquarters of Fujisankei Communications Group in Odaiba, Tokyo, designed by Kenzo Tange Associates architecture studio.

Metabolism is driven by three factors: the destruction caused by the Second World War, the atomic bombs dropped on Hiroshima and Nagasaki, and rapid population growth since the end of the war. Limited living space and the desire for security – these are the problems that the architecture is intended to help solve. The Metabolists exude unadulterated optimism for the future – they draft entire utopian cities and want to create ideal living. In doing so, they do not consider themselves in any way modernist – on the contrary: they make use of Japanese traditions and strict symmetry.

Few of the constructions were made reality back then – the majority exist only as sketches and drafts. The oil crisis caused all financing plans for major construction projects to be axed. However, relics of Metabolism can still be admired in Tokyo. For example, the Nakagin Capsule Tower, comprising 144 capsules and two core units. The building is in urgent need of renovation and its future is uncertain. In the meantime, there were calls for it to be protected as a World Heritage Site, but the response was muted.

It is conceivable that architecture will return to Metabolism in the next 50 years. Perhaps in a more modern form, with a friendlier look and a little more opulence. Maybe we will see floating cities. State-of-the-art living units with solar roofs and herb gardens on foam floats put together like puzzles. We could even float across the oceans in this way, occasionally meeting other floating cities that we could then easily join together with to share resources. Or perhaps we will grow upwards with our cities – inventing new construction materials that bring together stability and flexibility in ways that seem crazy today. Buildings growing up into the sky like trees. Buildings that offer space for thousands of people – with corridors that criss-cross like branches in the sky and provide endless superstructural possibilities in the form of new, bubble-like living units. We would look straight out into the heavens from our beds. As would our many, many neighbours.

For the time being, the vision of the future from the Japanese architectural pop stars of yesteryear has been extinguished, but curiosity and the need for new living-space design have the imagination of many architects in overdrive. Who knows where the house move after next will take us?

Jonathan Taplin not only worked as tour manager for Bob Dylan, but also for the Canadian-American group The Band, considered one of the most influential in the history of rock.

photos: Jonathan Taplin

Eva Bolhoefer *(text)*

Thirty-one. »It is time for a digital renaissance.« Professor Jonathan Taplin, Head of the Annenberg Innovation Lab at the University of Southern California, spent 30 years working in the music and film industry with greats such as Bob Dylan, Martin Scorsese and Wim Wenders. In this interview, he explains why we slept through the digital revolution.

Mr Taplin, you recently gave a lecture entitled Sleeping Through a Revolution *that garnered significant interest on the Net. What is it about?*
I take a look at the digital revolution of the past 20 years. I demonstrate the connections between business, culture and technology and explain how the Internet has changed the position of the artist in our society. I worked as tour manager for Bob Dylan and The Band in the 1960s, at a time when the most important works were still also those that were the biggest sellers. I was lucky enough to experience the moment at the Newport Festival when Bob Dylan first reached for his electric guitar. The much-discussed Rhode Island concert is to this day considered a milestone in Dylan's development from a folk musician to a rock legend. Rock and roll sparked a cultural revolution and I firmly believe that originality and creativity can change society. Unfortunately, the significance of the artist has been significantly damaged by the digital revolution and nowadays it is no longer possible for many creative people to make a living.

In your lecture, you particularly mention the »free-of-charge culture« of the Internet, which affects smaller artists especially, as a reason for this. How do you explain to a generation of digital natives that they should pay for music when access to it is as much of a matter of course for them as the air they breathe?
We need to convey the value of culture to our children and sensitise them to the fact that Internet piracy is not a trivial offence. After all, some of them will become the next authors, musicians and filmmakers themselves. The current mentality of self-service is disrespectful to those who invest time, energy, talent and money in the creation, marketing and distribution of cultural works.

Why do Internet pirates have such an easy time of it?
To understand that, you first have to know how the Silicon Valley economy functions and what philosophy it adheres to. A key figure in this is Peter Thiel, the founder of PayPal. In 1987, he was responsible for the graduating class in business management and informatics as a professor at Stanford University His university magazine, *The Stanford Review*, represented radically libertarian viewpoints: no state regulation, no taxes, no copyright and no competition. You could summarise it thus: competition is bad, monopolies are good. The Silicon Valley capitalism preached by Thiel is hyper-innovative and individualist. Google founder Larry Page is also sympathetic to its principles. Thiel founded PayPal in 1998 and, when he sold the company to eBay in 2002, he became one of the first to invest in what is now the world's most successful social network: Facebook. The so-called PayPal Mafia was later formed by former PayPal employees – a powerful network that also includes the founders of Yelp, LinkedIn, YouTube and Facebook and today controls all of Silicon Valley.

As you just mentioned, following Thiel's example, copyright laws are not exactly in abundance in the Silicon Valley economy. Is that the only cause of the desperate plight of the creative sector?
Of course we can't make such a sweeping statement. But it is a fact that since the introduction of file-sharing networks such as Napster in the year 2000, the worldwide turnover of recorded music has fallen from 21 billion to seven billion US dollars per year, with the publishing industry also recording losses of up to 40 %. Copyright law is not so relevant for Google; it prefers to concentrate on its core business, online advertising. Anyone who wants to watch their favourite film online just has to type it into the Google search engine and they will be led to the corresponding site.
Google does not perform Internet piracy itself, but it takes no action against it. This allowed digital bandits such as Kim Dotcom, who placed advertising before films, the rights to which he did not own, on his file-hosting platform Megaupload, to become millionaires. The artists, on the other hand, received nothing. Despite this, the Internet as we know it actually has its roots in the creative class.

In what way?
In the late 1960s, the writers Ken Kesey and Stewart Brand published the *Whole Earth Catalog*, a mixture of a magazine and a catalogue designed to give the reader comprehensive information about anything in the world that interested them. For example, if you wanted to find out about sustainable farming, you could not only find the information in the catalogue, but also the right contact partner and their telephone number alongside it. The *Whole Earth Catalog* was lauded by Steve Jobs as a precursor of search engines like Google. Incidentally, it is also the source of his famous phrase »Stay hungry, stay foolish.« In 1985, Kesey and Brand also founded the first social network, called »*The WELL*«, The Whole Earth 'Lectronic Link. There, hippies and fans of The Grateful Dead had discussions with people who would later found IT companies, influential journalists, artists such as Brian Eno and John Perry Barlow and visionaries like Howard Rheingold, who published his first social media book in 1993.

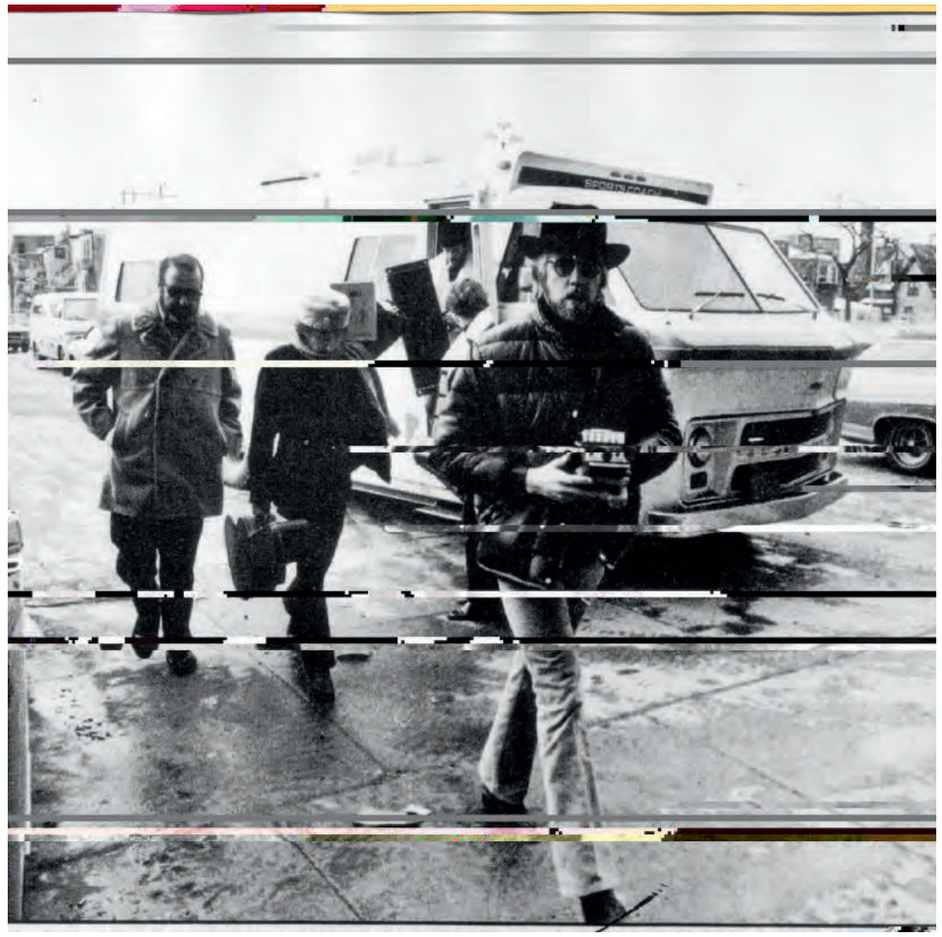
How did it come to pass that the creative sector could not adjust quickly enough to the challenges of the digital age?
As early as the 1960s, Martin Luther King drew attention to the fact that many people who live in a time of great social change often realise too late where they are. They therefore do not manage to develop the necessary forms of behaviour that the new situation requires quickly enough. And so, they sleep through the revolution. He also said that it was important to establish a moral structure for the technical revolution.

Hence, people like Peter Thiel, Larry Page, Jeff Bezos and Mark Zuckerberg were wide awake during the digital revolution?
That is not least confirmed by the Forbes list of American billionaires. The ones who slept were the creative class of America, the people who make the music, films, TV, magazines, newspapers and video games that are America's contribution to global culture. I don't worry about artists like Jay Z or Beyoncé – I worry about the less well-known writers, musicians and film directors who make an important cultural contribution to our society. They have to find a way to make money with their work. Google is part of the problem, but it could also be part of the solution. We will see how far they are willing to go to combat Internet piracy in future. But it cannot be that, for example, the only way unknown musicians can still earn money in the digital age is by going on tour or playing gigs; that is to say, bolting the doors and having people pay to enter like in the Middle Ages.

So has the digital revolution had any positive consequences?
I'm not a pessimist; I don't doubt the miracle of the Internet revolution, but I think we need to take stock to see where it has led us. It is time for a digital renaissance. Today, we assume that the future is shaped solely by machines and corporations, but I don't think that is correct. The humanist in me is convinced that people, and the accompanying power of originality, play an important role in our technology-driven world. But I think responsible action and moral principles are important when it comes to the development of new technologies. Unfortunately, we tend to invent them first and then consider how best to deal with them – for me that is the wrong way round. After all, the future is still designed by people, not machines.

You can find Jonathan Taplin's blog on *www.jontaplin.com*

Today, Jonathan Taplin works as a professor at the Annenberg Innovation Lab, a Think & Do Tank of the University of California, which shapes the media creatives of tomorrow.



Jonathan Taplin and Bob Dylan on their way to the Chicago Concert Hall for the opening gig of the Bob Dylan and The Band *tour in 1974.*

Gingham fabric is woven on a loom using alternating warp and weft yarns of equal breadth. It was originally used as a simple, minimalist and contrasting design for bed linen, pyjamas, etc. – including in the military. It was taken up by the fashion world in the 1950s and is now considered a classic.
Top and skirt: Alexandra Tamele, hat: Henrik Vibskov

Lina Zangers *(photos)*,
Ava Carstens und Nina Petters *(styling)*,
Sabine Cole *(text)*

Thirty-two. Modern folklore. Traditional costume usually refers to clothing, the prevalence of which is limited in terms of region, time and denomination, worn by the rural population. It changes depending on the occasion or level of relationship or mourning, and sometimes reflects social status. Workwear, on the other hand, describes clothing that has proven itself to be appropriate for certain professions, protects the wearer or has become usual for them. Neither category is generally affected by fashion, though both are often referenced within the fashion world. Clearly, designers are fascinated by the fact that the rules of fashionable transience do not apply to patterns, cuts and functions that have been around forever and will forever remain – precisely because they are subject to a certain invariability for the aforementioned reasons. Some current collections have made use of the colours, forms and spectrum of patterns from folklore and interpreted them for the future. In doing so, they have relinquished their works to their foreseeable overhaul by the next collection. A destiny that the sources of their inspiration are spared. And will continue to be so.

The striped top first appeared in the uniforms of the French navy in 1858 – it was designed to ensure that sailors who went overboard could be found more easily. In later years, the cotton piece would go on to write fashion history. Here it is interpreted vertically because, as we have known since Obelix was invented, it »makes you skinny«.
Blouse, trouser skirt and pullover: Dries Van Noten, socks: Kunert, boots: Sportmax

The idea of the boiler suit as a piece of workwear has been around since the Middle Ages. From the 12th to the end of the 18th century, craftsmen and later labourers would wear garments by which their profession could be recognised. Today boiler suits, or overalls, are the uniform of mechanics, employees of moving companies, plumbers and factory workers.
Overall: Henrik Vibskov, coat: Bobby Kolade

The classic corset should sit tightly against the upper body and shape the waist and is a successor to the bodice. When tied too tightly, a corset can impede breathing and blood supply to the skin and organs.
Pullover: Dries Van Noten, corset: Marina Hoermanseder, socks: Falke, Schuhe: Chanel

In Africa, the traditional patterns of the materials processed or wrapped into garments provide information about the origin and status of the wearer. The fabrics in Ghana, the Ivory Coast and Benin are particularly bold.
Blouse: Versus Versace, trousers: Bobby Kolade, coat: Tim Labenda

Many motifs on West-African textiles are produced with wax prints, whereby wax stencils are printed onto cotton, which is then coloured. The stencils are then removed, leaving a unique pattern.
All from Mérimée Deumo

Janker is the German name given to a type of traditional jacket particularly popular in Alpine regions, which stretches to around hip length with a straight cut. In the 16th and 17th centuries, ladies' coats were known by the same name. Over time, they became increasingly short and developed into the traditional jackets we see today.
Dress and top: Christian Wijnants, jacket: Chanel, shoes: & Other Stories

The kimono is a cloak-like piece of clothing, held together with a broad belt. The cut-off, wide sleeves are a stylistic feature. Nowadays, Japanese people wear kimonos for special occasions such as weddings and tea ceremonies.
Dress: Dries Van Noten, pullover: Sportmax

Paisley is the name given to an abstract, decorative fabric pattern based on a leaf with a pointed, bent tip, something like an oversized comma. The origin of the pattern can be traced back to a floral motif from the Persian Sassanian dynasty, which reached India via the Moguls. There it inspired Gerolamo and Roberta Etro to create their famous Etro pattern.
Knitted trousers and pullover: Joseph, Kleid: Etro

photographer: Lina Zangers www.lina-zangers.de
styling & concept: Ava Carstens & Nina Petters www.ballsaal.com
hair & make-up: Patrick Glatthaar using Chanel and Less Is More Haircare www.ballsaal.com
styling & production assistents: Lisa Oswaldt, Michael Lis
models: Daniela Domique www.m4models.de
postproduction: Retouched Studios www.retouched.de

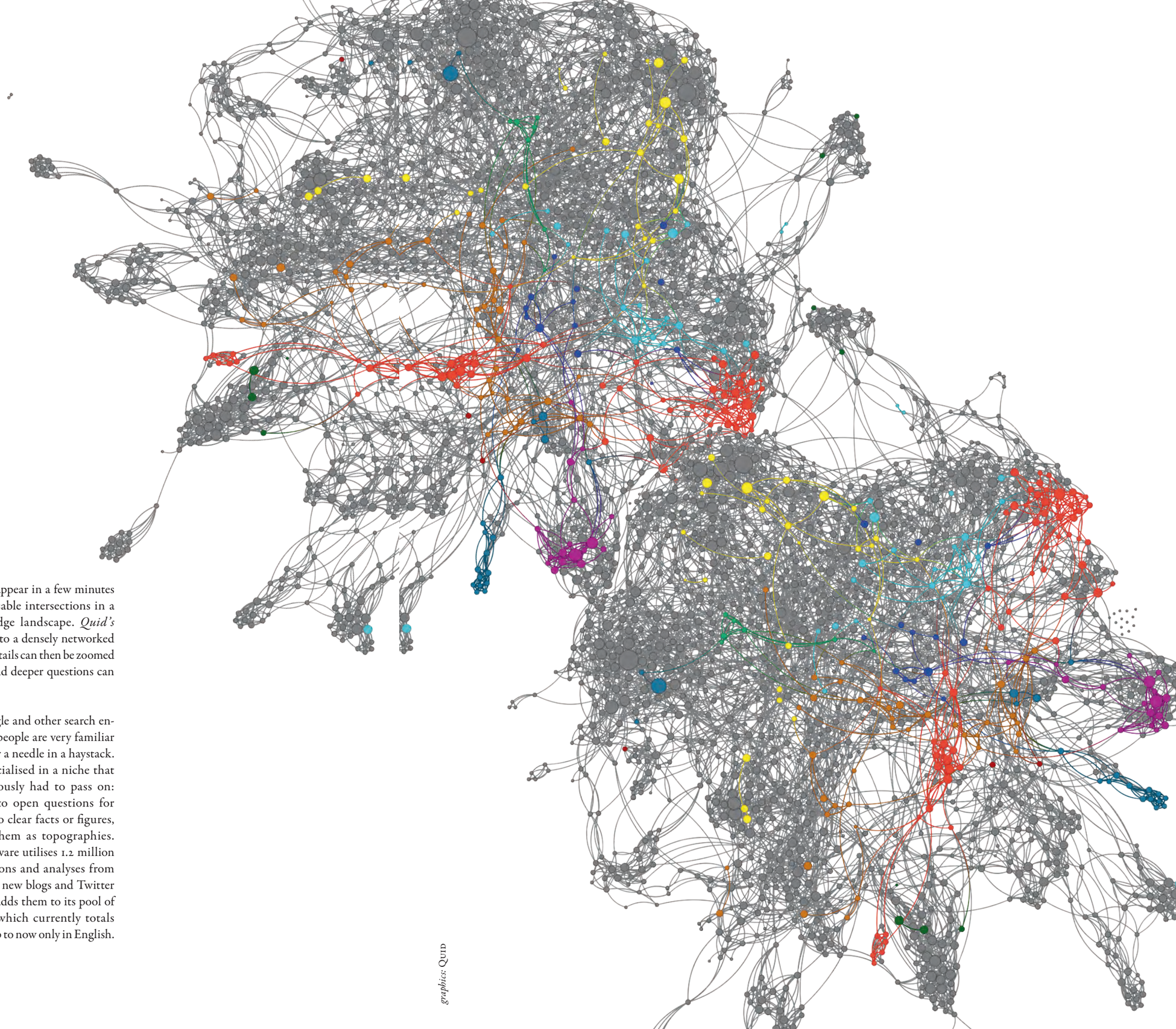
Steffan heuer *(text)*

Thirty-three. The superbrain. No question is too vague for the knowledge platform *Quid*. With its software, companies survey the world in order to recognise trends more quickly and look into the future. The founder and Chief Research Officer, Bob Goodson, spent the last five years developing a new kind of search engine with which global companies can play out their most important strategic decisions and recognise megatrends quarters or even years in advance.

»These are questions that are often worth hundreds of millions of dollars or euros,« explains Goodson, British by birth, who moved to the high-tech Mecca of San Francisco after studying at Oxford. With a few clicks, he pulls up examples in his browser: who will dominate the race for commercial space travel in the next decade? What functions should successful smartphones of the future have? Which forgotten books should next be turned into films by a major studio? Which topics must a presidential candidate be occupied with in the next 12 months?

Relevant insights appear in a few minutes as clearly recognisable intersections in a coloured knowledge landscape. *Quid's* maps look similar to a densely networked nervous system. Details can then be zoomed in on as desired and deeper questions can be asked.

In the era of Google and other search engines, millions of people are very familiar with the search for a needle in a haystack. But *Quid* has specialised in a niche that technology previously had to pass on: finding answers to open questions for which there are no clear facts or figures, and presenting them as topographies. To do so, the software utilises 1.2 million articles, notifications and analyses from established media, new blogs and Twitter day after day and adds them to its pool of text documents, which currently totals around a billion, up to now only in English.



graphics: Quid

This database is complemented by 28 million patents granted since 1960. Algorithms distil the important details from them – things like people, products, companies and even vague terms such as »networked house« or debates and emotions relating to a book title – and relate them to each other. This creates thematic islands on the map that can grow, shrink or even disappear again. Thus, anyone who asks the same question every day will be shown a slightly different knowledge landscape each time, showing the latest developments.

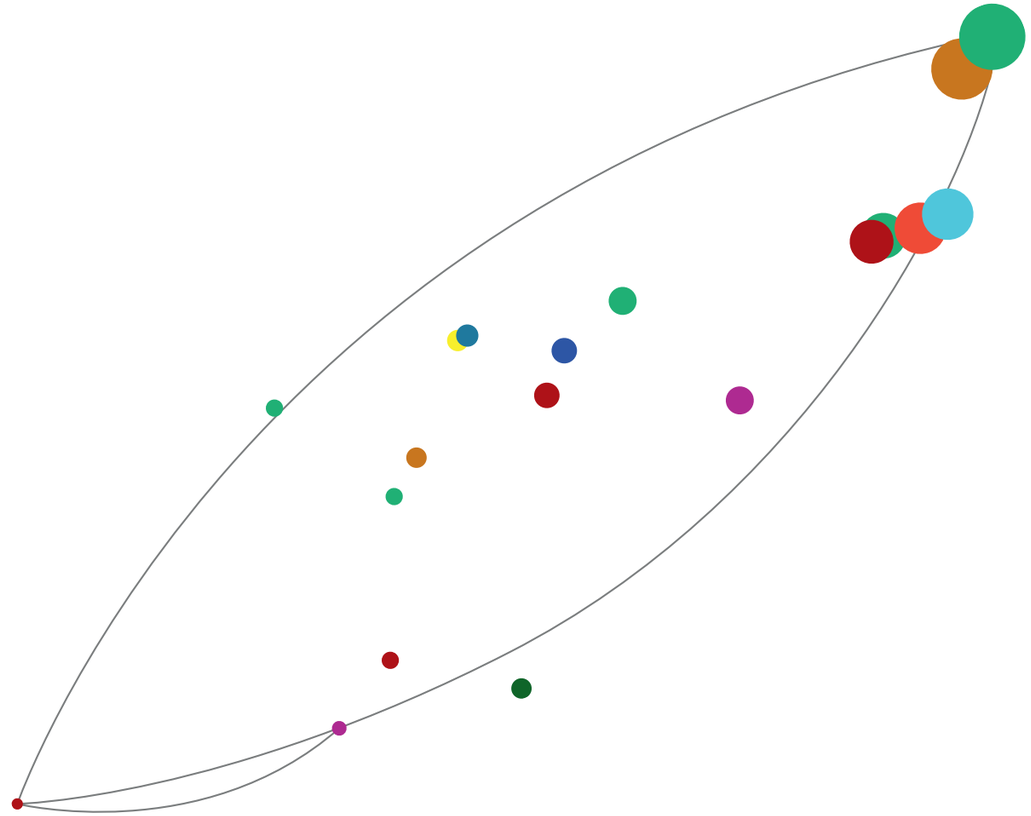
For example the future of commercial space travel. When *Quid* analyses more than 10,000 news items from all over the world since summer 2013, a map of innovation and exploration in space is created. Important discussions appear as the central cluster, while less relevant topics float on the edge as distant galaxies.

Thus, it can be seen at a glance that the current debate about the future of space travel is dominated by three topic areas: nostalgia about past missions, science-fiction scenarios that envision the advance into new worlds in dazzling colours, and the growing significance of a modern scientific-mathematic education (STEM) that prepares and motivates young people for space missions.

Important economic trends relating to the leap from earth into space can be seen in more distant clusters: space mining, i. e. the extraction of resources from planets and other celestial bodies; pioneering production technologies such as 3D printers for the manufacture of components away from the blue planet; origami engineering, foldable structures for manned space travel; solar panels; biomimicry, in which efficient designs from nature are copied; and, finally, automated vehicles for unmanned space missions.

Quid's map can also answer the question about future market leaders in commercial space travel. The USA is still leading the way, but Russia, China and Europe are catching up fast and are often mentioned in the same breath, which suggests growing cooperation that could challenge the dominance of the USA.

»We do not replace human intelligence, intuition and creative thinking by any means. Computers won't be able to do that for decades. It is much more a question of complementing the human mind in an optimal and extremely fast manner,« says Goodson. »If I can see the answer to almost any question in a few minutes, I think differently and further ahead. I ask more questions, more often, and I take a journey of discovery through the knowledge of the world.«



graphics: Quid

That, he argues, offers companies decisive advantages when they have to make forward-looking decisions, such as those relating to investments, product strategies or marketing. »Before, you had to thoroughly consider whether or not to invest months of work and half a million in a strategic analysis. Now, you can allow yourself to just be creative.«

Three major customer groups are now making use of this benefit: companies that want to support their strategy department, well-known corporate consultants, who often have to look years into the future for their clients, and advertising agencies who want to pick up on short-lived trends a few weeks or months in advance with *Quid*.

However, the living maps deliberately do not predict what will happen in a month or five years, but rather bundle together hundreds of thousands of historical and current details into a handful of clearly recognisable trends, which the human eye can intuitively comprehend. »People are still responsible for the interpretation«, says Goodson, »and that is quite right. No machine can replace the human mind. But we can revolutionise how we handle information.«

More information on the subject can be found on *www.quid.com*

Syd Mead at his desk in his Californian villa, where many of the futuristic science-fiction vehicles, such as the flying police car Spinner from Blade Runner, *were created.*

Patrick Strattner *(photos)*,
Eva Bolhoefer *(text)*

Thirty-four. The man who draws the future. Syd Mead's workspace does not exactly seem like a place where the future is created. A plain chipboard worktop, to which he has attached a long-necked metal lamp on the left and right, serves as a desk for the master of futuristic vehicle design. Brushes, paper and cardboard are spread across it. He is in demand in Hollywood, as many famous science-fiction classics bear the signature of the 82-year-old American. Fantastic modes of transport, such as the Light Cycle from Tron and Spinner, the flying police car from Ridley Scott's Blade Runner, have sprung from his imagination. Mead also conceived the architectural backdrop of dystopian Los Angeles for the 1982 cult classic – a dirty, bleak and overpopulated city. But the specialist area of the »visual futurist« remains mobility, as his biography shows: shortly after graduating from the Art Center College of Design in California in 1959, he worked in the styling studio at Ford. Eventually, in 1970, he founded the idea factory Syd Mead Inc. – alongside the major film studios, his pool of customers includes companies such as Philips, Sony and Chrysler. Syd Mead is crazy about cars. He was particularly affected by the Cadillac. »When it came onto the market in 1959, I thought I needed to change career, because I couldn't imagine that anyone would ever top that first-class vehicle design,« he recalls. And, interestingly enough, Mead has in fact never designed a mass-produced vehicle.

All drafts by Syd Mead are created at his drawing table.

His only contributions to American automotive history are the tail lights of the 1960s Ford Falcon. Instead, Mead's creations fly around the universes of science-fiction films and will live on as a piece of American cultural history. However, as fantastical as his works are, they nevertheless appear astoundingly real. This is also something he learned from years of experience in major automotive companies. Mead knows the industry and what challenges it must be ready to face in future. »Private property is becoming more and more expensive and is a popular target for tax increases. There will still be private vehicles in future, but they will be more an elitist hobby for high earners,« he predicts. »The majority of the population will get around through car sharing. Today's automotive industry is primarily oriented to productivity, but I think the potential of the markets in China and India is overestimated.« Mead has already predicted quite a few trends. Over 30 years ago, he drew a vision of the »electronic herd« – autonomous vehicles that communicate with one another and drive without colliding, like flocks of birds in the air or shoals of fish underwater. Today, this principle is called car-to-car communication. Mead is convinced that driverless driving is future-proof – after all, people got into flying kerosene boxes, too.

But how does a man like Mead always manage to be ahead of his time? He spends many hours reading sci-fi literature and respected science and economics magazines. In line with his theory that »imagination means translating existing knowledge into new forms,« he turns information into mobile visions. Split personality helps him in this endeavour. He says that in order to be successfully creative, it is necessary to take the perspectives of different characters: firstly, that of the mad scientist who gives free reign to his visions; secondly, that of the person who critically questions the ideas and reviews their feasibility; and thirdly, the realistic assessment of someone who confronts the client or customer with a suggestion.

Top left: Syd Mead with a toy model of the police car Spinner *from the science-fiction film* Blade Runner.

Top right: This award was presented to him on the 30th anniversary of the science-fiction classic Tron *at Grauman's Chinese Theatre.*

Centre: One of Mead's first designs was the Village Machine, *which he drew at the Community College in Pasadena.*

Bottom left: He collects inspirations for the next futuristic vehicles on his pinboard. He is a particularly big fan of the 1959 Cadillac.

The Light Cycle from science-fiction classic Tron *is also a product of Syd Mead's pen.*

The principle has proved effective – to this day, Hollywood directors make the future his business. The love for detail in his inspiration is particularly appreciated. Alongside Tron and Blade Runner, Elysium, Star Trek, Alien and Mission to Mars are also on the short, friendly man's list of references. But it is not only the film industry that makes use of his services; the exclusive circle of the international jet set is aware of the visual genius, too. Thus, billionaire sheikhs and entrepreneurs are part of Mead's clientele, and have him equip their luxury yachts and private aircraft. Now and then, he also invites clients to join him for a sundowner on his property in Pasadena, where he lives together with his life partner and manager Roger Servick. Syd Mead enjoys pleasant company within his own four walls, but still, sometimes he is tempted out into the world. He gives talks at film festivals, attends sci-fi conventions and gives interviews. But does he ever tire of talking about the future? »Not at all. Thinking about it is a continual creative challenge,« he explains. »The future is our mutual destination. It is down to all of us to shape it sensibly. I will continue to see it as an opportunity for each individual to play a part with their own capabilities, in order to make the world a little bit better.«
www.sydmead.com

photographer: Patrick Strattner *www.patrickstrattner.com*

Eva Bolhoefer *(text)*,
Kim Arendt *(illustrations)*

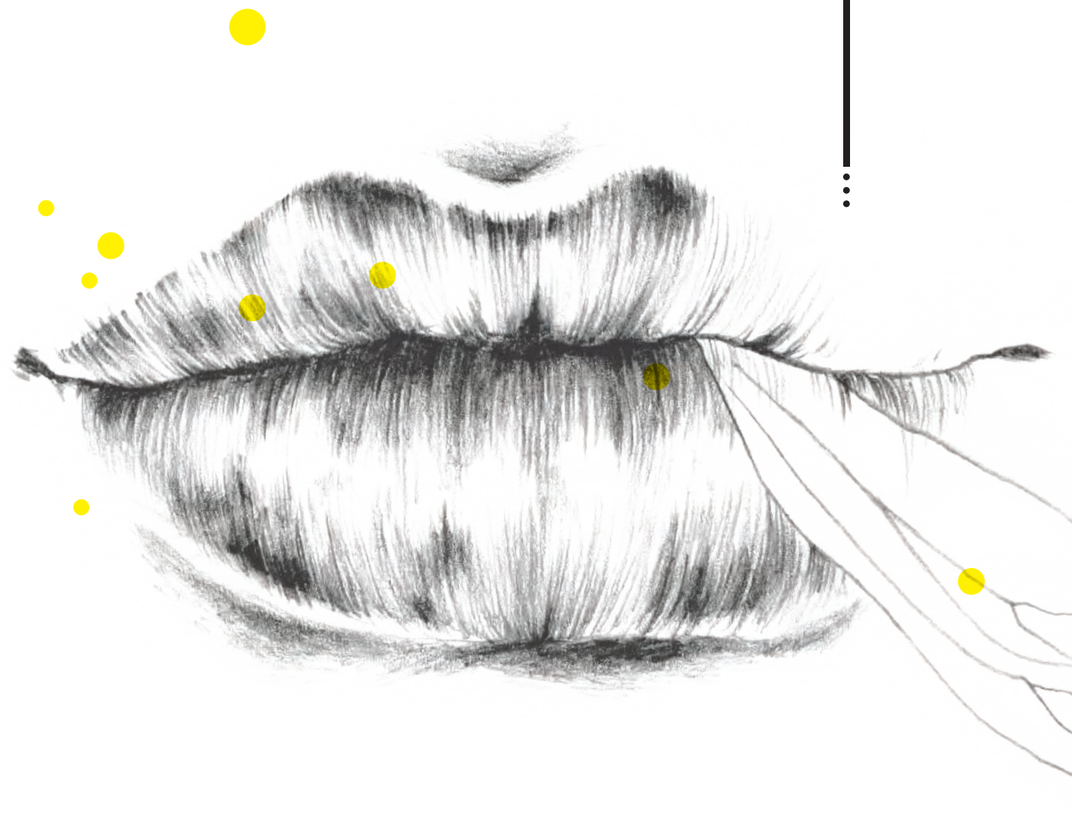
Thirty-five. »You are what you don't eat.« Leading food expert Hanni Rützler on food as a stylistic device, culinary speechlessness and the sharpening of our senses.

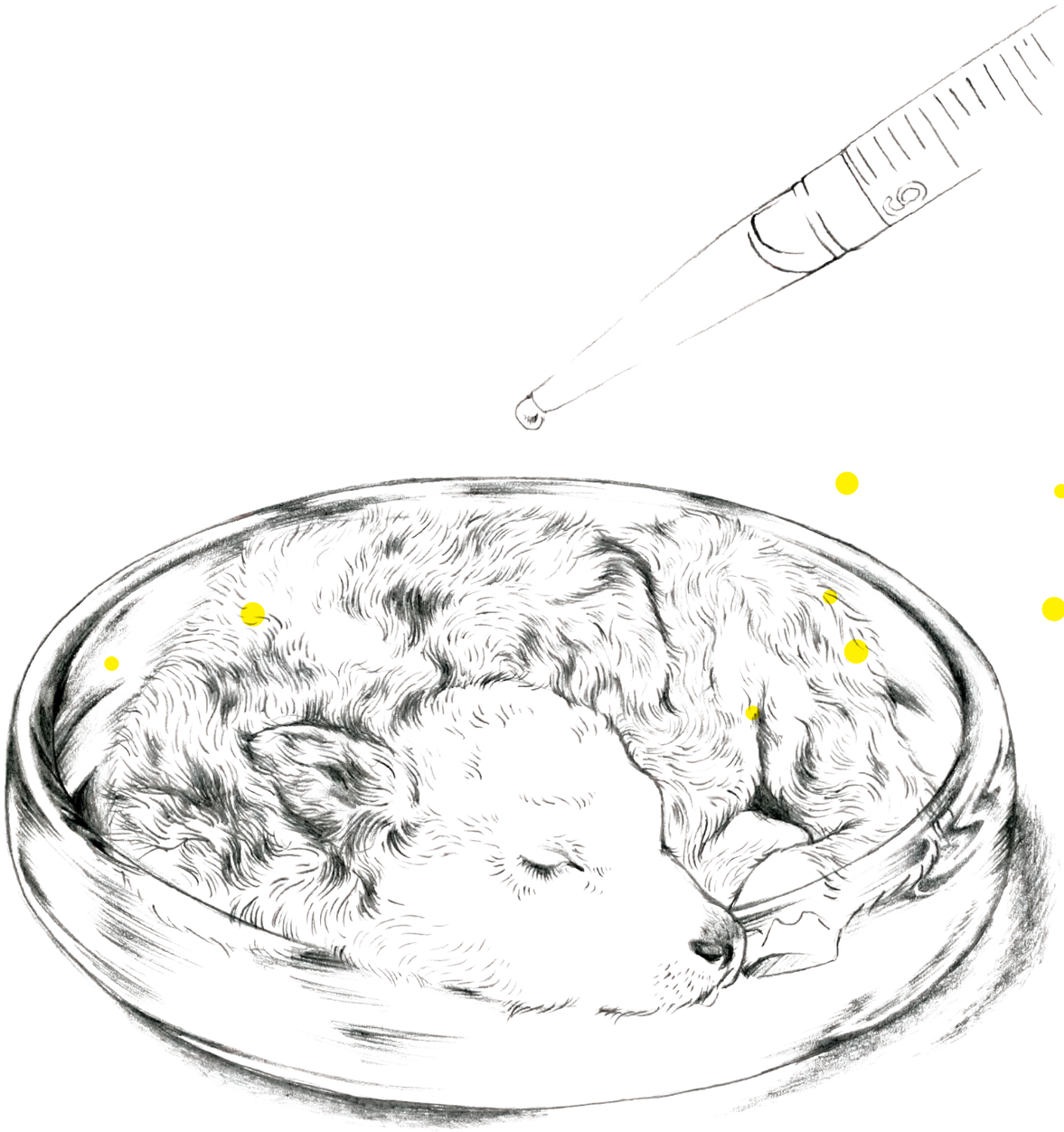
In the Food Report 2016, which is published annually by the Zukunftsinstitut, you predict that food will become more and more of a stylistic device in the coming years. How exactly will that be expressed?
Food has taken on a whole new significance in our society in the last 15 years, which, among other things, is connected to the major changes in our working world. We are in the late industrial age and on the path from the information society to the knowledge society. Before, mealtimes still structured everyday life – lunch was on the table at 12 noon on the dot – today, our mealtimes are oriented to our working hours and are adjusted to suit our lifestyle. Food has become a playing field; it has developed into a profiling tool. We consider which food suits us best and what attitude we can express with it: individuality, non-conformism, criticism or morality.

How do you explain this development?
We are looking for possibilities for orientation within the plethora of food options and learning to deal with it. This is also related to increasing individualisation. We have the freedom to choose, and opt for what suits us best. For example, there are more and more selective eaters, such as vegetarians and vegans, not to forget the various »free-froms«. They consciously forgo certain foods and, in the process, make a statement along the lines of »You are what you don't eat.« In urban spaces, there is a bright new food scene based on the search for new qualities. It's no longer about food having to be cheap, but about taste, origin, enjoyment and morality. Food has never been as ethically charged as it is today. That is particularly clear in the discussion about meat.

According to the Food and Agriculture Organization of the United Nations, consumption of meat will double by 2050. How realistic do you think this prediction is?
I consider predictions like that to be insufficiently differentiated. That arises from a linear view of societal developments that takes neither cultural peculiarities nor disruptions – i. e. crashes or surprises, be they large or small – into account. We will see population growth, that is certain. Therefore, in some parts of the globe the consumption of meat will indeed increase, but in Europe and the USA we have already reached »peak meat«. In emerging countries in Central America and Asia, where a new middle class is appearing, consumption may increase, but, at the same time, a new self-awareness is cropping up in those countries – the people are proud of their culinary culture and are bringing their traditional cooking, which is based on far more vegetables than ours, back to life. In Germany, agricultural policy is currently still encouraging the export of meat and import of feed. But I assume that will change in the next 20 years.

Do meat-replacement products offer possibilities, and could new foods containing protein, such as insects, complement or even replace conventional meat production?
There are already numerous alternatives to meat today. For example, in a great many culinary cultures around the world, insects are a fully established part of the menu. Of course, whether they will be a success in terms of consumption in this country is a hot topic for discussion. But that is not only because we find the idea unpleasant. A few years ago, many people could not imagine eating raw fish, either. Today, sushi seems totally natural on our plates. It is more that insects are not officially permitted as foodstuffs in Europe. In addition, their culinary potential is not really being put to use because they are primarily cultivated as animal food.





Alongside insects as an alternative to burgers and steaks, the production of synthetic meat from stem cells is being researched in laboratories. In 2013, you were one of the first to test the so-called »In vitro burger«. What do you think of this method of meat production?
I find the idea very exciting, but I don't believe it will become prevalent any time soon. The production is still too expensive, and many consumers are put off by the idea of biting into a piece of meat from a lab. In German-speaking cultures we are fundamentally sceptical towards these kinds of innovations. What's more, mistrust of the food industry has grown a lot due to past scandals.

People are becoming more and more critical and responsible in their interaction with food and are increasingly interested in its origin. What makes this trend particularly clear?
The markets and food festivals that are currently booming in every city are equivalent to pop-culture events and have become an alternative to the theatre or cinema. They provide a good opportunity to further develop one's own sense of taste and discover new regional offerings. Of course, going there purely because it is currently hip and cool doesn't help much. If you get involved with what food is on offer, there is an opportunity there. In Germany, the majority are still extremely price-conscious and thus often forget to ask themselves if it really tastes good. The price should not remain the central factor. We need to stop that trend if we want to see food as an element of the quality of life and not just a cheap source of energy. We need to sharpen our sense of taste again and consciously engage it in order to be able to recognise quality for what it is.

In recent years, we have been very focused on appearance. But we have also learned that appearances can be deceiving. A bright red tomato might not taste as good as it looks.

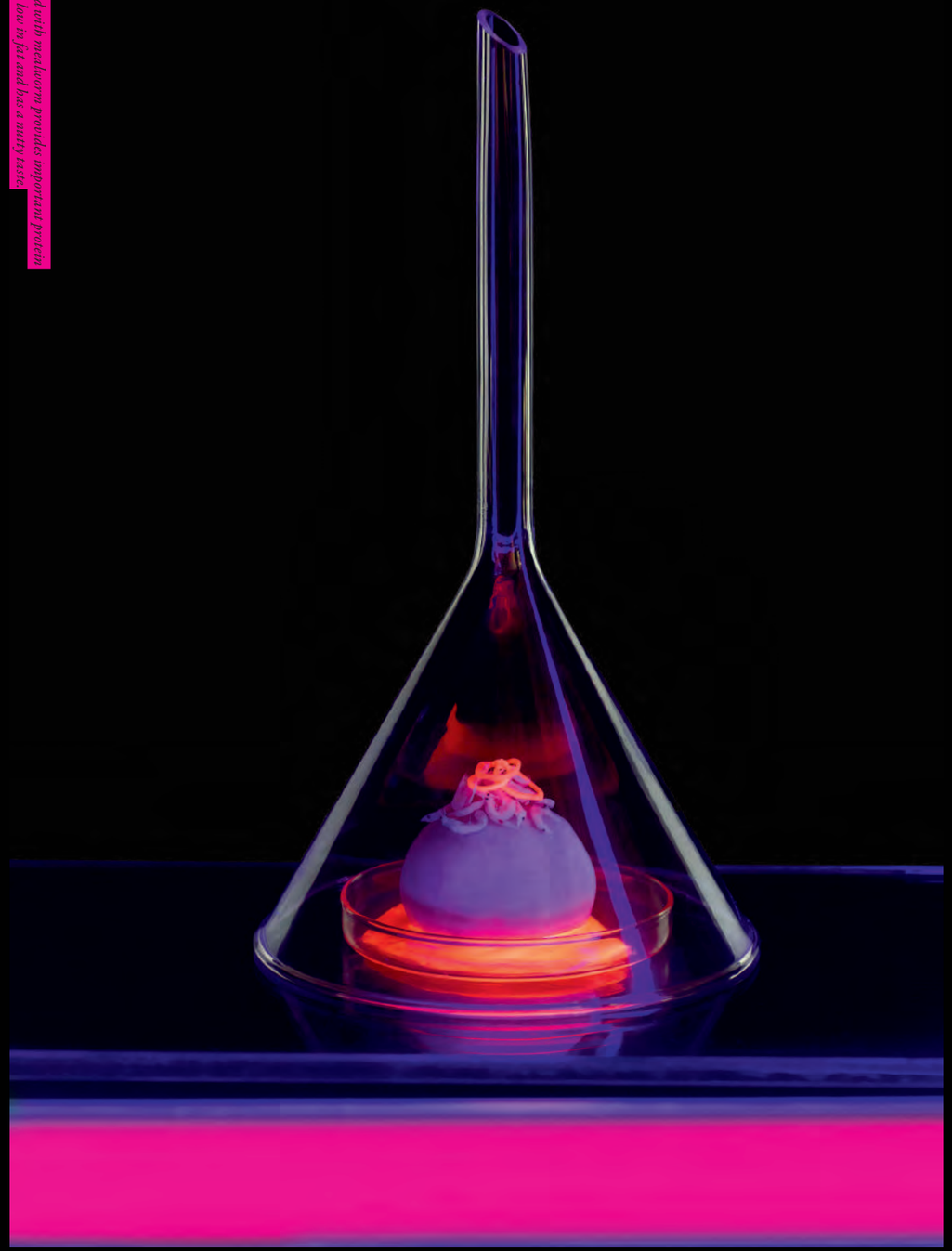
The optical side of food is easy to show others, as numerous food blogs make clear. But how can taste be conveyed?
Taste is a very individual experience and therefore difficult to communicate. The only way to share a taste experience is through language – but to do so we first need to develop a language of enjoyment. In German-speaking culture in particular, we are quite speechless when it comes to our food. Often, not much more than »lecker« (delicious) passes our lips. In France and Italy, things are rather different. As we know, there is the language of enjoyment for certain foodstuffs such as wine, coffee and olive oil, but it is still completely lacking in our everyday interaction with food. And yet, language is a very powerful tool – it can change our perception and allow us to remember a certain taste more clearly. I would like it if we could learn to use all our senses again in order to fully perceive and enjoy the perfection of good food. *www.futurefoodstudio.at*

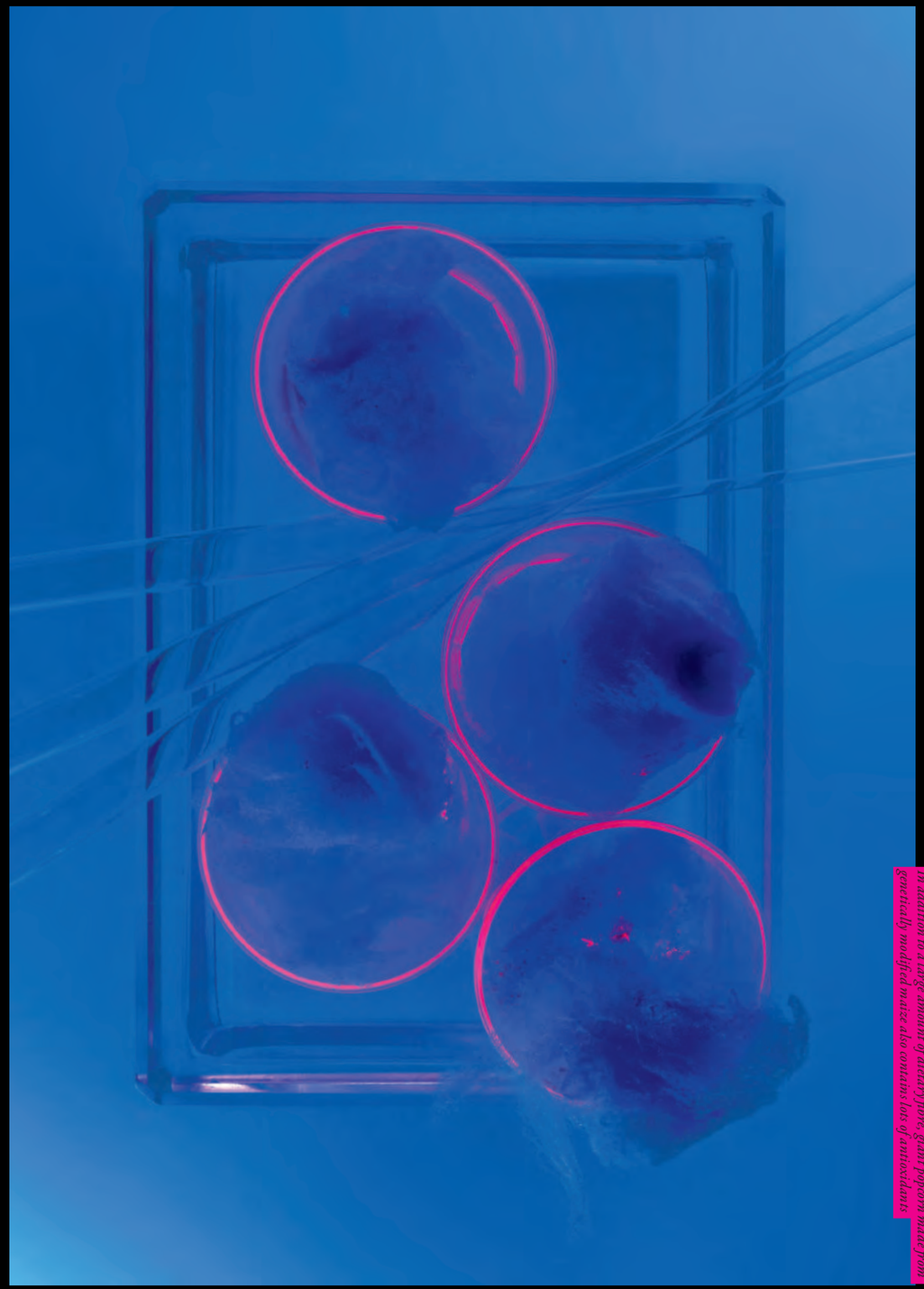
Ragnar Schmuck *(photos)*,
Christian Kleeman *(styling)*,
Sebastian Storck *(text)*

Thirty-six. Science kitchen. Chips from the bio-printer, genetically modified super algae, steak from the Petri dish, insects containing protein, jellyfish as an alternative to a fillet of fish: if you believe the predictions of nutritional scientists, science-fiction fare such as this could soon be on the menu. The Future Food laboratory is already providing a taste of tomorrow's culinary innovations. Bon appétit!

The genetically modified super algae spirulina is rich in natural vegetable iron, calcium, vitamin A and vitamin C.

Sea urchin garnished with mealworm provides important protein and is easy to digest, low in fat and has a nutty taste





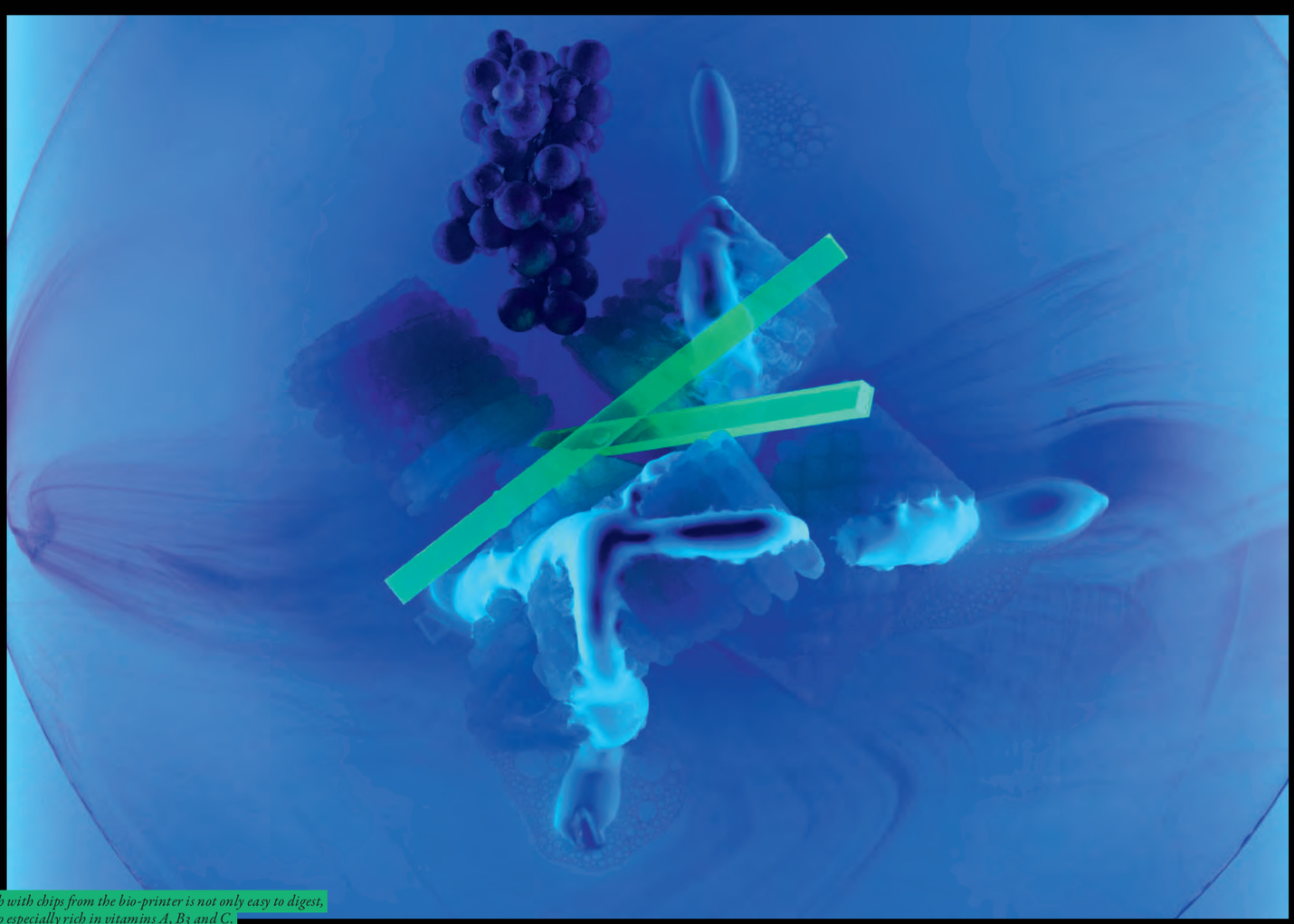
In addition to a large amount of dietary fibre, giant popcorn made from genetically modified maize also contains lots of antioxidants

The in vitro hamburger cultivated in the laboratory is fat-free and contains protein, as well as valuable minerals such as calcium and iron.

The microalga chlorella, here in a new highly concentrated capsule form, strengthens the circulation and has a detoxifying effect.

The molecular super-cocktail changes colour depending on its temperature and state of matter, and can be either drunk or inhaled.

photographer: Ragnar Schmuck *www.ragnarschmuck.com*
future-foodstyling: Christian Kleeman *www.christiankleemann.com*



Jellyfish with chips from the bio-printer is not only easy to digest, but also especially rich in vitamins A, B3 and C.

Thirty-seven. Weight-defying skateboarding. With its hoverboard Slide, the Japanese car manufacturer Lexus has revived the cult board from *Back to the Future 2*. Pro skater Ros McGouran stepped into Marty McFly's shoes to test the futuristic board's flying ability. But before it could take-off, an entire skatepark had to be fitted out with magnetic rails. After all, even a high-tech gadget like *Slide* has to follow the laws of physics. Thanks to the use of superconductive material, which has been cooled down to –197°C with liquid nitrogen, a magnetic field is created that lets the board hover 3 cm above ground. Unfortunately, it was only developed to underscore the Lexus brand's image of innovation. So skaters will continue to have to do with asphalt, water or snow. *www.lexus-int.com*

MF/rus

Thirty-eight. Timeless timekeeper. The *Runwell Coin Edge* model from Shinola is made of rust-free stainless steel and promises timeless quality from a city which we thought has long seen its final hour: Detroit – rough-and-tough especially after the downfall of the car industry, which quickly led to skyrocketing unemployment and crime. But in the past few years, many artists, musicians and companies such as Shinola have rushed to The Motor City's aid. Thus, a historical Argonaut building, the former headquarters for General Motors, has been creating not only watches, but also bicycles and leather goods since 2011. Quality made in The Motor City at *www.shinola.com*

MF/ac

Thirty-nine. High-tech kicks. The sneaker Lechal *Alfa Casual Microfiber* is equipped with trailblazing features: integrated navigation technology in the shoes' sole ensures people with a less-developed sense of direction can still reach their destination without any detours. Via a smartphone app, the user simply enters the address of the finishing line. The high-tech runners then navigate the user with a gentle vibration to the left or to the right. Foot it into the future at *lechal.com*

MF/lb

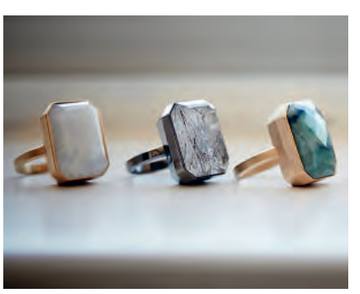
credits: 37. Lexus, 38. PR, 39. PR, 40. Jibo, 41. Ringly, 42. Oculus Rift

Forty. Personal robot. *Jibo* is one of the family. Whether a photographer, good-night story reader or personal assistant: this little robot is always ready to serve you. Developed together with MIT professor Cynthia Breazeal and financed at first via a crowdfunding campaign, the innovative mate should be ready to move in by the end of the year. A robot for a bit of household help at *www.jibo.com*

MF/lb

Forty-one. Smart jewellery. On the outside, *Ringly* looks purely analogue, but on the inside of this decorative wearable are hidden lots of technological talent. That's because the smart rock connects itself to your iPhone via Bluetooth, while the ring's matching app offers a whole range of functions. For instance, from receiving a phone call or tweet to WhatsApp news, you can combine various vibrations and colours with one another. So you'll never miss a notification again. Innovative ornament at *ringly.com*

MF/rus



Forty-two. The two-billion-dollar glasses. The virtual-reality eyewear *Oculus Rift* is the ideal gadget for video-game lovers who avoid reality like the pest. What started as a kick-start campaign was bought out by Facebook last year for 2.3 billion euros. The glasses will be revolutionising the entertainment industry by the end of the year. But not only will you soon be able to experience PC games with a 360-degree view – virtual reality will also capture films, journeys and video calls, to name just a few. So you can be in the middle of the action in future, not just a bystander. Bespectacled in virtual worlds at *www.oculus.com*

MF/lb

Greg Hunt *(photos)*,
Valerie Voss *(text)*

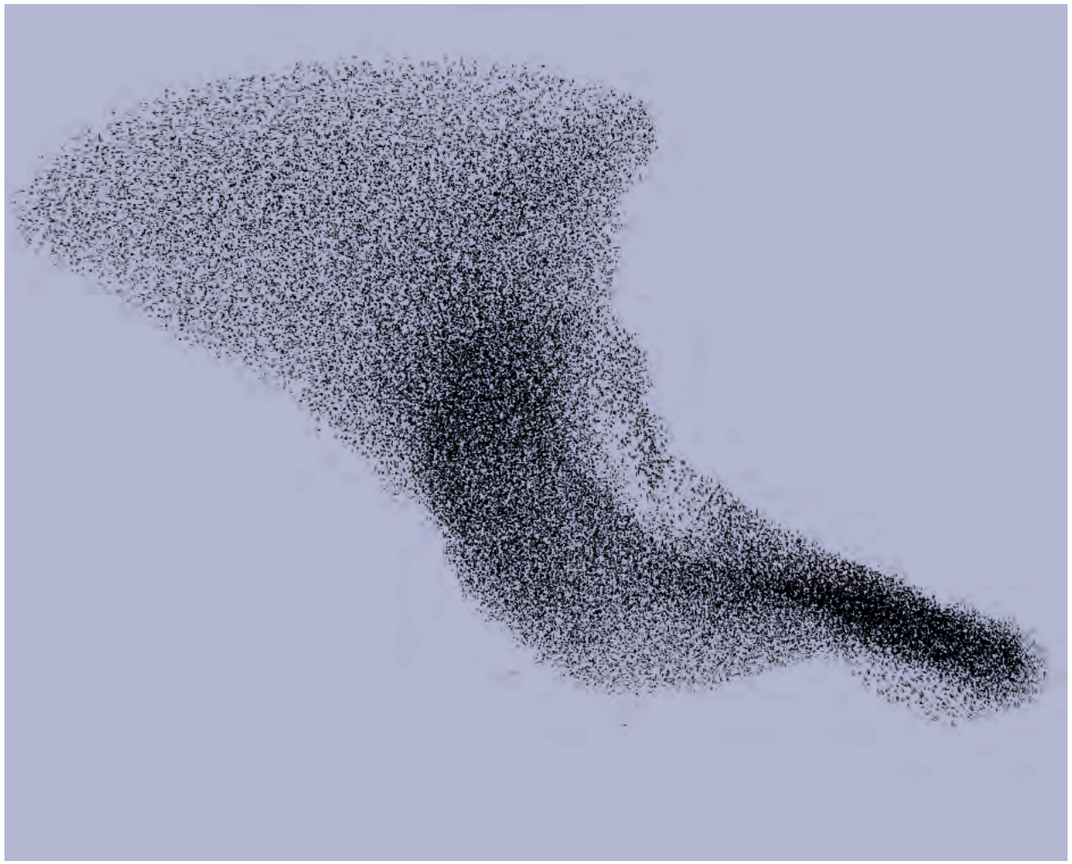
Thirty-four. Collective intelligence.

»The whole is greater than the sum of its parts,« said Aristotle. But what exactly is the »wisdom of crowds« all about? Firstly, a swarm or flock is the coming together of individual members of a species to form a group. Without any hierarchical structure, the masses reach decisions that, in the best-case scenario, prove to be an intelligent choice for all involved. This is how artistic sky formations such as the flock of starlings recorded in Aberystwyth in Wales come to pass. The individual birds are organised in a network in which each one reacts to the flight manoeuvres of the six or seven others around it.

The natural phenomenon of swarm intelligence can also be transferred to technology. As users, we form virtual swarms on the Internet, for example. This networked wisdom can be seen in the Web project *Zooniverse*, for instance, in which over a million registered members support professional scientist in the processing of mounds of data. You simply need to decide: classify the surface of Mars or help to translate the Oxyrhynchus Papyri? Internet prediction markets such as Intrade also manage to forecast election results more accurately than classic opinion research institutes or learned politics experts through the intelligence of the masses.

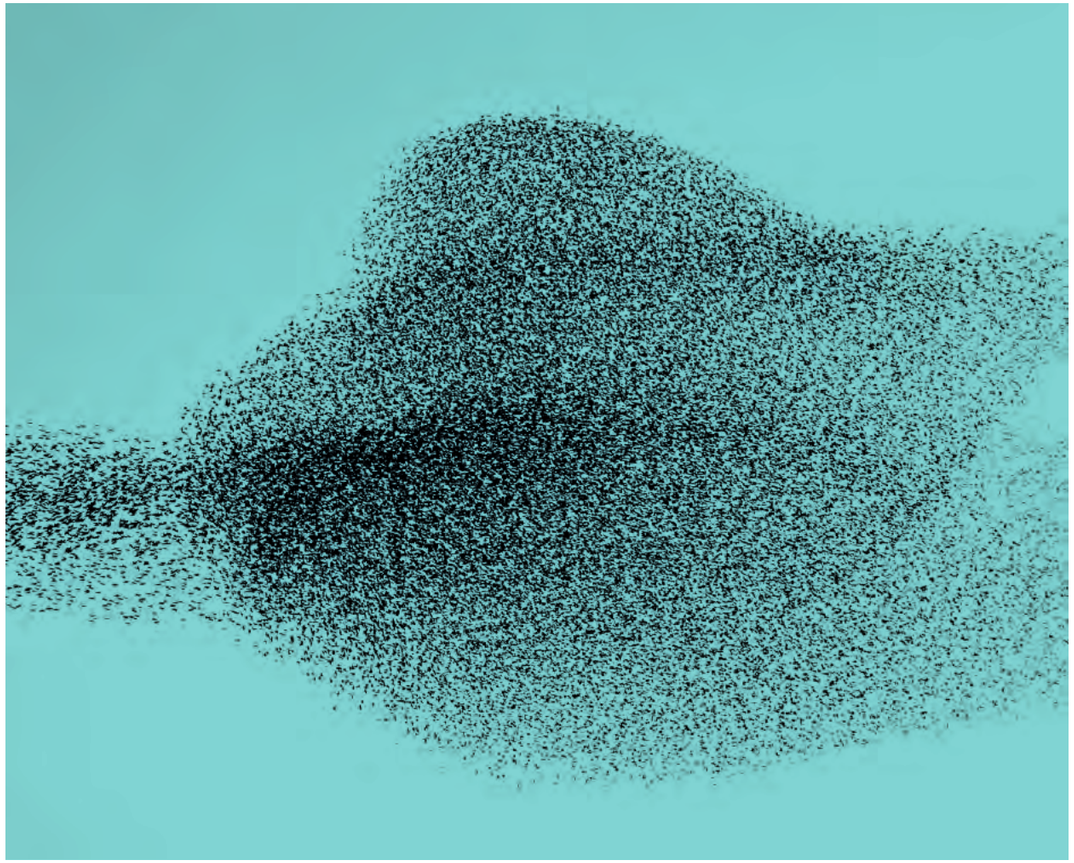
The collective intelligence of bees and ants also helped the research teams in the development of the world's largest autonomously acting swarm of underwater robots as part of the AI project *CoCoRo* (Collective Cognitive Robots). The mini submarines communicate with each other via sensors and make independent decisions in the process. In future, they will help us fathom the mysteries of the ocean, among other things.

More information on *www.zooniverse.org* and *www.intrade.com*



The individual members of a swarm do not follow any instructions. Rather, the choreographies develop due to certain if-then rules, i. e. if a certain situation occurs, they form a whole.

Physicists, biologists and engineers work together and show that any species and any organism can form a swarm – from neurons to people.



photographer: Greg Hunt *www.flickr.com/eosxreg*

Coordination within the group functions through constant interaction with one another – ants use pheromones, bees the waggle dance – and us? The World Wide Web. As long ago as the 1980s, Nicholas Negroponte, Head of the Media Lab at MIT, posited that: »The true value of the Net is not so much in the information as in the community.«

Ava Carstens *(text)*,
David Daub *(photo)*

Forty four. Music of the future.

The avant-garde pianist Volker Bertelmann from Düsseldorf, known by the alias Hauschka, produces extraordinary soundscapes using ordinary objects. Table tennis balls, pencil erasers, grease-proof paper, tea lights, bottle caps: anything goes, as long as it sounds good. »I simply stick the objects to the strings, which results in a different sound each time. This allows me to divide the piano into different soundscapes,« he explains. »A piano is, in a certain sense, a percussion instrument, because each of the hammers strikes a string.« He might, for example, wrap aluminium foil around the hammers, producing muted, electronic sounds in an analogue way. Hauschka constantly coaxes never-before-heard sounds out of the piano. Many of his pieces transcend genre boundaries and alternate between classical and electronic music. He would like to see this variety and love of experimentation brought to opera houses and concert halls across the world too. He sees great potential in combining the sound of acoustic instruments with more contemporary currents – provided that conventional structures are not rigidly adhered to. In Hauschka's vision, the music of the future resembles a big DJ set in which the audiences are taken on an acoustic journey through various genres.

Amidst the constant noise of the information age, the pianist would like to see a more reflective approach to music. His success began in the online world, which was where most of his initial sales came. »I am about to decide whether to exclusively sell my music in analogue form.« A move away from digital music platforms towards trusted record dealers. This decision is absolutely not intended to shut a door on the digital age – he simply believes in slowing things down. »Downloading an album with a single click is a completely different experience from buying it on vinyl,« Hauschka believes.

The world of music will have to undergo a transformation in the future. »The scene only validates itself, instead of opening up to other genres. Musically, we're operating in a vacuum at the moment.« The present day is dominated by big egos and individualists. But Hauschka thinks this won't last much longer. »We need to develop a sense of community again and have a lot more rituals. We need to regularly share things with our family and friends.«

But according to Hauschka, it's not just music itself but also the environment in which we listen to it that needs to be reinvented. Music events need to move away from the strict hierarchy of seating in theatres towards greater interaction between artist and audience. Audience members will stand, sit or dance wherever and however they like – backwards, sideways, forwards. Hauschka finds that the strict arrangement of concert halls into rows often creates a barrier between young audiences and classical music: »It makes younger people feel exposed, uncomfortable, out of place.« The artist also attempts to put the principle of interaction into practice at his own concerts. And whenever the situation permits it, he places his grand piano in the middle of the room, instead of on an elevated stage. And who knows? Perhaps in future the audience will be part of the show, and classical concerts will become big jam sessions.

photographer: David Daub www.daviddaub.com

Mierswa & Kluska *(photos)*,
Lorand Lajos *(styling)*,
Judith Stoletzky *(text)*

Forty five. Wearable states. Will the stuff that fashion dreams are made on still be »stuff« at all in the future, strictly speaking? Natural materials are becoming extremely scarce, while synthetic ones tend to bring people out in a sweat. No question about it: tomorrow's material girl will be far less materialistic than today's.

We are experiencing a renaissance of classic UV light. Longwave is THE must-have of the season. Discrete quanta are now most definitely passé on the interstellar catwalks. Flattering photons and playfully iridescent elementary particles spin around a dark core. Be a bright spark: these collections will disappear at light speed.
Coat: Fendi, shorts: Escada, top: Gucci, bracelet, black: Emporio Armani, bracelet, multicoloured: Hermès

This warm, reversible self-defending jacket made of pure electricity is irresistible. Indispensable for telekinetic dislocations, especially for women travelling alone. Can be worn positive or negative. With adapter and charger for all known galaxies.
Dress: Irene Luft

The linear, figure-hugging molecular chain of vacuum-spun photons on this gravity-free dress makes it absolutely enchanting. The relativistic shimmer around the exquisite black holes is ravishing, while the raw-look magnetic field on the back is a bold touch. Accentuated waist with space-time curvature. Price on request.
Dress: Escada, jewellery: Atelier Swarovski

photographer: Mierswa & Kluska *www.mierswa-kluska.de*
styling: Lorand Lajos *www.lorand-lajos.de*
hair & make-up: Tan Vuong using Chanel *www.hallsaal.com*
model: Charlotte K *www.core-management.eu*
casting: Nu Projects *www.nu-projects.com*

These flowing red materials from the avant-garde new worlds in orbit 3 of the 83rd galaxy beyond the 17th moon of Jupiter are charisma in liquid form. A great look for those who can pull it off! Hand wash only.
Leather gilet: Porsche Design, over-the-knee boots: Versace, belt and bracelet: Hermés, gloves: Roeckl

Anna Charlotte Schnabel *(illustrations)*,
Judith Stoletzki *(text)*

Forty-six. Nouvelle cuisine moléculaire. Who doesn't know them: the rescue-the-world cookbooks with good intentions and recipes full of protein-rich, meatless »recipes for a small planet« in which you learn to make tasty spreads made of pestled birch tree bark, to conjure up airy soufflés out of lichens and crispy snacks out of well-informed but unread cookbooks. You could be of the opinion that no one needs recipes anymore – but you're wrong: the astrologists at the Harvard-Smithsonian Center for Astrophysics have discovered that these small planets, which orbit the stars in other solar systems, are evidently made of the same ingredients as our good old Earth, where we have left behind a much too large footprint from our dirty big feet during our reckless strolling around. This insight doesn't just give us reason for hope, it also inspires us to finally cook truly sustainably. Surprise your guests at your next dinner party – not with a scoop of vanilla ice cream, but with a small planet for dessert! The recipe is easy enough for novices with a bit of hand at cooking and serves one to two persons. It is free of lactose, glucose and gluten and is also anti-allergenic, but it can contain trace elements of nuts. Preparation time: several million years, plus cooling time. For large parties, for instance the Earth's population forecasted for the year 2050, simply multiply all the measurements by nine billion. Bon appétit!

Ingredients:
240 g magnesium
240 ml silicon
1.5 kg iron
300 ml oxygen
½ tsp aluminium
½ tsp nickel
½ tsp calcium
¼ tsp sulphur
1 spritz of water from asteroids

Loosely mix all ingredients in a large bowl and then use your hands to form the mixture into a ball. Place the ball perfectly in the ecosphere of a young star. Heat it until the ball smoulders white. Let simmer for a few million years and then let it cool down until the colour changes from white to yellow to red and finally builds a delicious golden-brown crust. The ball should now no longer let off any light. Season with water and a few organic compounds. Let the steam dissipate to create clouds and oceans. During this process, the ball will shrink a bit. Step back and wait another million years and see what happens. With a bit of luck, a thin glaze of new life will appear on the surface of your new world.

source: New York Times und Harvard-Smithsonian Center for Astrophysics

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20457 Hamburg info@loved.de
www.loved.de www.lovedandfound.de

Managing Director Mieke Haase (MH), Michael Jacobs (MJ), Peter Matz (PM)

Editor-in-Chief Eva Bolhoefer (EB)

Creative Directors Mieke Haase (MH), Julia-Christin Holtz (JCH, Dep.)

Fashion Editor & Project Manager Ava Carstens (AC), Michael Lis (Assistant)

Editorial Stefan Anlauf (SA), Ava Carstens (AC), Eva Dittmer (ED), Alessandra Sardo (AS), Catrin Florenz (CF), Michel Foertsch (MF), Laura Hamdorf (LH), Michael Lis, Patrick Morda (PAM), Judith Stoletzky (JUS), Sebastian Storck (SES), Valerie Voss (VV)

Photo Editors Anja Kneller (AK), Mario Schöning (MS, Assistant)

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Layout *loved GmbH*
Kim Arendt (KA), Dominique Brodel (DB), Inga Detlow (ID), Maja Harden (MHA), Marie-Therese Humer (MTH), Patricia Hoffmeister (PAH), Mareike Holst (MAH), Merten Kaatz (MK), Julia Kerschbaum (JUK), Alexandra Michels (AM), Anna Schnabel (ACS), Tom Schuster (TS), Rouven Steinke (RS)

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Responsible for the contents of this issue
Eva Bolhoefer and Mieke Haase

Contributors Roderick Aichinger, Meric Canatan, David Daub, Carl Elkins, Patrick Glatthaar, Greg Hunt, Steffan Heuer, Christian Kleemann, Philipp Kohlhöfer, Sarah Kühl, Lorand Lajos, Michael Lis, Andreas Mierswa & Markus Kluska, Elena Mora, Lisa Oswaldt, Benoit Pailley, Nina Petters, Ragnar Schmuck, Mario Schöning, Oliver Schwarzwald, Linda Sigg, Sandrine Siregar, Daniel Steinbrück, Tan Vuong, Lina Zangers

Final Editing Ilka Weihmann
Jürgen-Töpfer-Str. 81
22763 Hamburg tel./fax: +49-40-668 545-28
nachricht@lektorat-weihmann.de

Translation Markus Götz
Apostroph GmbH
Harkensee 6 tel. +49-40-636 497-77
22307 Hamburg fax. +49-40-636 497-79
www.apostroph.hamburg
info@apostroph.hamburg

Production thjnk ag
Große Bleichen 10 tel. +49-40-413 499-0
20354 Hamburg fax. +49-40-413 499-27
www.thjnk.de

Print-Production Schulz + Co Professional Production Services GmbH
Mühlenkamp 6c tel. +49-40-271 505-5
22303 Hamburg fax. +49-40-271 505-333
www.schulz-und-co.de

Print & Processing D+S Druck und Service GmbH
Flurstraße 3 tel. +49-3 95-581 07-0
17034 Neubrandenburg
www.dusgmbh.de info@dusgmbh.de

Distribution Ava Carstens
Brandstwiete 46 tel. +49-40-800 04 86-44
20457 Hamburg
www.lovedandfound.de ac@loved.de

contributions or comments?
please contact us at contributions@loved.de

Retailers and Manufacturers

Alexandra Tamele / African Fashion Berlin / press@africafashiondayberlin.com / www.alexandratamele.com

Armoire d'homme / Press Office Denmark / +45 29 12 44 92 / www.armoireofficielle.com

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Marc O'Polo über Zalando / BOLD Berlin / +49 30 20 21 577 0 / www.zalando.de

Marina Hoermanseder / Blackbird Berlin / +49 30 639 62 42 00 / www.marinahoermanseder.com

Porsche Design / Loews PR / +49 89 21 93 79 10 / www.porsche-design.com

Preach / SANE Communications / +49 30 89 56 65 47 / www.preach.eu

Roeckl / Roeckl Press Office / +49 89 729 69 26 / www.roeckl.com

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