



University
of Basel

UNINOVA

University of Basel Research Magazine – N°138 / November 2021

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The trend is upward.



Angelika Jacobs,
UNI NOVA editor



Noëmi Kern,
UNI NOVA editor

At first it was worrying; then it quickly became frightening. The steep rise in cases at the start of the pandemic took politicians and the general public by surprise. As Helmut Harbrecht explains in the interview in the Dossier section of this issue, even some mathematics students find it hard to get their head around exponential growth. Unlike the case numbers, many other aspects of life seemed to collapse — radius of movement, economic output and, after some time, even the cohesion of society itself.

We've devoted this issue to the various aspects of growth; something that, in part, only becomes apparent through its absence. What causes communities to grow and merge? What if we abandoned the concept of an ever-expanding economy? We present research projects that look at how we should manage scarce land resources as we seek to feed the constantly growing world population; how we should deal with the rising tide of our own digital data; and what connects nutrients and growth. Last but not least, the shift toward working from home and limitations on our opportunities to move around have contributed to weight gain in some individuals. With this in mind, we put a number of key questions to the head of the obesity outpatient clinic at University Hospital Basel, who is also a researcher at the University of Basel. Moreover, we bring you a series of infographics showing what grew during — or as a result of — the pandemic in order to trace its impact beyond rising case numbers or new variants.

We hope this issue helps you to expand your own knowledge and we hope you enjoy reading it.

Angelika Jacobs and Noëmi Kern
UNI NOVA editors



Psychiatry needs more precise methods.
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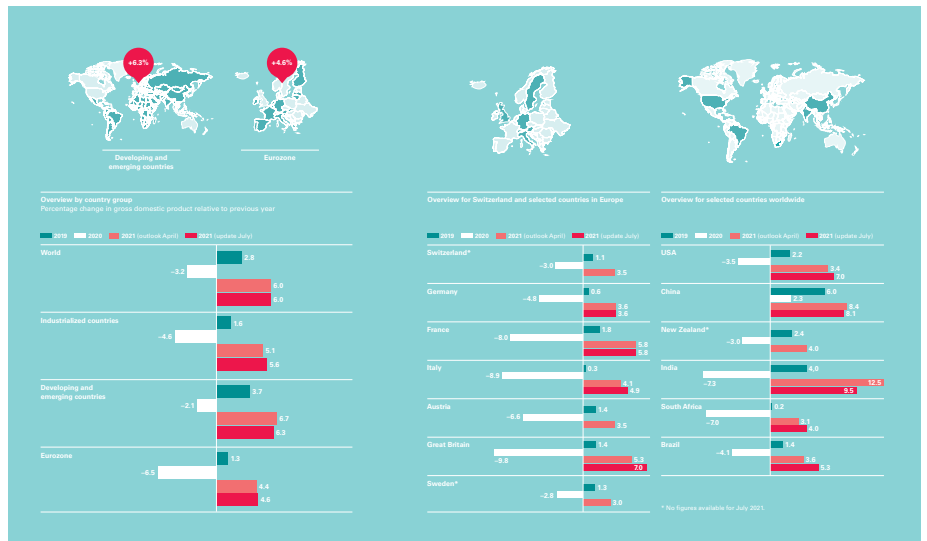
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The mind is difficult to examine medically. Yet, Annette Brühl is convinced that blood tests and brain scans could unlock new possibilities for psychiatry.



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Antique drinking games

The right vessel for every drink.

Fine wines are something that not everyone can afford to buy. For those that can, they serve as a status symbol — and inviting others to enjoy a high-quality wine is a way of building up and maintaining a network of contacts.

To further underscore this social aspect of wine consumption, men, in particular, engaged in toasting rituals and drinking games in the guildhalls and taverns of early modern Basel. This provided a way of securing orders and demonstrating their masculinity.

In the 16th and 17th centuries, however, they didn't just drink from normal cups or glasses. Rather, they used an array of sophisticated and ostentatious vessels that came in all shapes and sizes. This sophistication served to highlight the prestigious nature of the rituals. After all, as well as fostering a sense of fellowship, one of the key functions of drinking games was to create prestige.

That is the sort of information you'll find on the blog *Materialized Histories*, which was launched as a commemorative digital publication to mark the 65th birthday of Professor Susanna Burghartz. This form of publication, as well as the content of the almost 70 articles by various historians linked to the Department of History of the University of Basel, is related to the research interests of the Basel-based professor. ■

bit.ly/uni-nova-histories



Kaleidoscope



4



1



2



3

1 Drinking vessel in the shape of a walking grape picker, probably from Zurich, ca. 1620.

2 Drinking game known as the *Werthemanscher Hirsch* ("Werthemann's stag"), Augsburg, 1610–1615.

3 Drinking game depicting Saint George slaying the dragon, Basel, ca. 1600.

4 Drinking game or, to be precise, drinking vessel from the Basel Guild of Shoemakers, 1661.

Measuring the mind.

The soul is less susceptible to medical examination than a conspicuous skin blemish or a broken leg. Annette Brühl believes blood tests and brain scans could unlock new possibilities for psychiatry.

Interview: Urs Hafner Photo: Oliver Hochstrasser

UNI NOVA: Professor Brühl, you are a professor of affective disorders – emotional disturbances, you might say. Aren't strong emotions always disturbing?

ANNETTE BRÜHL: No, I think that emotions are the spice of life. They're important because they tell us what we like, and what we don't. They help us to get to know ourselves better. That said, a dish can have too much chili or salt in it, and that just makes it unpalatable.

UNI NOVA: At what point do emotions become unpalatable?

BRÜHL: Let's take an example: losing a loved one. If the bereaved person can't get out of bed for a week, it's acceptable, but if they get into a state of such despair that they stay in bed for a month, that's a cause for concern and will have a negative effect on their life. Time is just one factor among many, however. There's also the intensity of their grief, or the impact it can have on their own life and their surroundings. When a person is utterly unable to let go of a particular event and

regain their balance, this might indicate depression or the need for help.

UNI NOVA: We also see this inability to let go in less tragic contexts, such as the end of the requirement to wear a mask outdoors earlier this summer. Many people were still walking around wearing masks. Are they on the brink of an emotional disorder?

BRÜHL: I wouldn't say so. For one thing, in countries like Japan or South Korea, wearing a face mask in the event of an infectious disease was common practice before the pandemic, and, for another, doing so is unproblematic as long as the wearer is not bothering anyone or suffering themselves as a result. Things get a bit more complicated if the person develops an extreme obsession with washing and hygiene.

UNI NOVA: And what if they take pleasure in suffering?

BRÜHL: You're referring to masochism? Well, if the person derives a positive overall balance from their life with the obses-

sion, that's all very well for them – but what about their surroundings? I had a client who demanded that her husband disinfect himself from head to toe and change his clothes every time he entered their home.

UNI NOVA: An amateur psychologist might say she was trying to get rid of her husband ...

BRÜHL: No, she was simply terrified of Covid-19 infections, particularly for her child. She would spend hours washing her hands every day. The dog had to do its business on the balcony, and her child wasn't allowed to leave the house. Her obsession was having a significant impact on those around her.

UNI NOVA: What did you do?

BRÜHL: Fortunately, her symptoms were still fresh, and had not yet become chronic. I gave the patient some clear information about the pandemic, a realistic assessment of the risk potential, and strict instructions to stop avoiding the source of her anxiety. This is the crucial point.



“And let’s not forget: While terrifying for many people, for others the coronavirus pandemic has actually had the effect of relieving tensions.”

Annette Brühl

UNI NOVA: So you cured her?

BRÜHL: She started leaving the house with her child and her dog again. She realized that facing up to her fears wouldn't end in disaster.

UNI NOVA: This patient behaved in an exemplary and rational manner. What do you do when patients won't listen to you?

BRÜHL: In this case the cure wasn't just a matter of rational behavior: I began by prescribing the woman a psychiatric drug, as the stress was stopping her from sleeping. This mood enhancer paved the way for successful psychotherapeutic treatment. But the same principle applies to more serious cases too: The patient has to ascertain which fears and behaviors are standing in their way, and find the motivation to lead a life that is compatible with their goals and values. If I had treated the woman at a later stage, perhaps her much-disinfected husband would already have left her, or her recluse child would have fallen behind at school, and she would be desperate. But the basic process would not have been any different.

UNI NOVA: We're often told that the pandemic has led to a spike in mental illness. What is your take on that?

BRÜHL: Neither in Basel nor in Zurich, where I worked previously, has there been any evidence of a clear increase in diagnosed cases of mental illness so far. Grieving for someone who has died of Covid-19 is not a sign of illness in itself. It's only if someone can't find their way past the grief and is paralyzed by it that it becomes a mental health issue. That's something that we can only ascertain after some time though, so we may well see a rise in patient numbers soon. And let's not forget: While terrifying for many people, for others the coronavirus pandemic has actually had the effect of relieving tensions such as conflicts in the workplace. These two aspects might balance each other out.

UNI NOVA: But the Corona Stress Study reported an increase in depressive symptoms among the population. How do you explain this mismatch with your experience?

BRÜHL: Depressive symptoms are a long way from mental illness. If I missed going

out with friends during lockdown, that might make me sad, but it doesn't mean I'm depressed. Sadness is an appropriate reaction to the situation. If I'm able to find joy in other things, occupy myself with hobbies, and then perk up again once the restrictions are lifted and the risk subsides, then you could say I was under a certain amount of strain for a time – but I'm not depressed. Patients with depression are sad, joyless and apathetic in spite of a positive environment.

UNI NOVA: For years now, every new update of the DSM classification of mental disorders has included new illnesses. Are people getting crazier, or are we just being examined more closely?

BRÜHL: The latter! Right now, psychiatry is where internal medicine was maybe in the 1970s. We are getting more precise all the time. Psychiatry is a relatively young science – it has only been around for a little over a century. Around the year 1900, it only had three diagnoses to choose from: depression, mania and neurosis. Moreover, it was primarily a descriptive science, noting symptoms and

progressions without any awareness of the causes. We've come a long way since then.

UNI NOVA: That sounds hopeful. Then again, history shows us that mental illnesses come and go. Hysteria is no longer a diagnosis, as recently as the 1980s homosexuality was considered a disorder, and today's children suffer from dysphoria and gender identity disorder. Does each society create its own illnesses?

BRÜHL: More so than other fields of medicine, psychiatry is closely intertwined with social and moral issues. For a dermatologist, a skin blemish is just a skin blemish, but a person's fears are much harder to quantify. This is precisely why biology is so important to us. It gives us access to a new dimension. I believe that we will soon be able to match up clearly defined groups of diseases with the appropriate medications, in the same way that oncologists administer treatments for breast cancer on the basis of genetic factors.

UNI NOVA: What do you mean by biology?

BRÜHL: Analysis of data pertaining to the patient's brain and blood and other measurements. Taking biology into account makes our discipline more objective, as we're adding another dimension to the patient's subjectivity. But we're still at the beginning. As we're not yet able to work with precise laboratory results or brain scans like internal medicine does, for the most part we still have to rely on the testimony of the person being examined.

UNI NOVA: Time and again, psychiatry has looked for the causes of mental illness in the body. Around the middle of the 20th century, the dominant theory was hereditary biology, according to which feeble-mindedness was passed from one generation to the next, but this idea was abandoned. Is psychiatry going round in circles?

BRÜHL: Genetic research has come a long way since then! We now know there is no single gene for depression or schizophrenia. Mental illnesses can be hereditary, but the process is much more complex than a single gene. There are no psychiatric illnesses caused by a single inherited gene. Rather, these illnesses are caused by the interplay of numerous minor genetic

In conversation

factors. Thanks to genetic analyses, we now know that bipolar disorders, which manifest in manic depression, are genetically closer to schizophrenia than they are to unipolar depression. This knowledge has allowed us to treat these illnesses more successfully. With even more data, we will be able to prescribe medications with even greater accuracy.

UNI NOVA: Do you also see any disadvantages in drug-based psychiatry, such as patients going through life subdued and bereft of emotions?

BRÜHL: If someone is going through life subdued, then they're not getting the right treatment. Treatment always includes psychotherapeutic elements, too. The focus might lean more toward drugs or psychotherapy depending on the illness, but treatment is never solely drug-based. In general, it should allow the patient to feel both positive and negative emotions with the right level of intensity for them, minimize their suffering and let them lead a full life.

UNI NOVA: You deal with people who exist at the boundary between what is considered normal and what is not on a daily basis. Has this affected your outlook on life?

BRÜHL: You'd have to ask my friends. I'm not the brooding type who loses touch with reality, and I'm blessed with the ability to simply close the door behind me at the end of the day and leave my work at the office. Over the years I have become more understanding of the variety of different forms people's lives can take. It never ceases to amaze me how people manage to live a good life in spite of their illness. But I hardly ever watch films that prominently feature psychiatric issues any more, such as "Black Swan" or "One Flew Over the Cuckoo's Nest". Their portrayal of mental illness tends to be so skewed that I would just get upset and annoy whoever I was with.

UNI NOVA: These films express a certain discomfort in relation to psychiatry. Where might this come from?

BRÜHL: There is no question that psychiatry has been co-opted in the service of morally questionable decisions or used to exclude certain people in the past. Things are different now; my experience of psychiatry as a field is that it is considered and ethically aware. On top of this, the general public associates a certain degree of discomfort and stigma to mental illness, as it affects people in a very direct manner while being difficult to understand – unlike a broken leg or a tumor, which are plainly visible on an X-ray scan. Finally, the population at large knows much less about what actually goes on in psychiatry than in a field like surgery, for instance. Psychiatry needs greater visibility, and the public needs more realistic information. ■

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gewinnen.



Dossier



Disinfectant used
in 2020

270x

2019



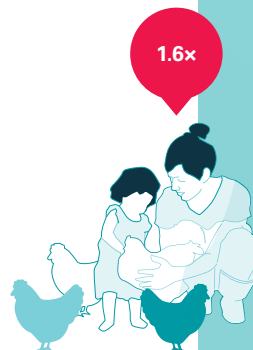
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Tins and ready-made meals

More!

Humankind is always seeking to move forward, to make everything bigger and better. In other words, we're always trying to achieve more. Here, we take a look at different aspects of growth.

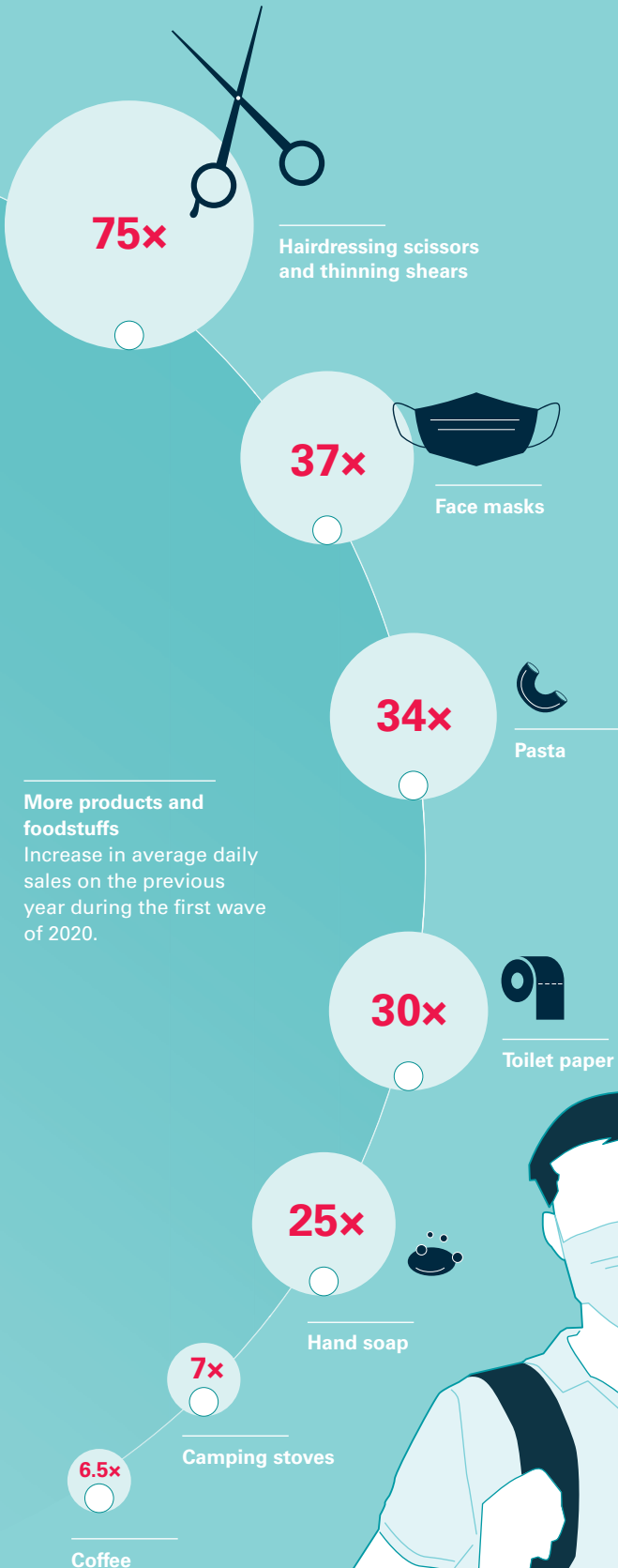


More self-sufficiency

160% increase in average daily YouTube searches for "raising chickens" on the previous year. Measured during the first wave in 2020.

More eggs

Increase in domestic production of 6.3% in 2020 on the previous year.

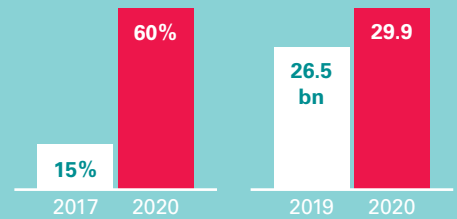


More products and foodstuffs
Increase in average daily sales on the previous year during the first wave of 2020.

Traces of the pandemic

During the pandemic, the focus was – and continues to be – on case numbers, hospital admissions, deaths and vaccination rates. In this series of infographics, we deliberately leave these statistics to one side and examine other things that have grown during – or as a result of – the pandemic.

Research: Angelika Jacobs, Noëmi Kern
Infographics: Marina Bräm



More contactless
Proportion of contactless payments.

Higher turnover
Stationary retail trade reaches record high (in billion CHF).

Panic buying and chicken raising

The coronavirus pandemic caught us completely off guard. From one day to the next, nothing was the same as before – and we had to adapt to changes in many areas of life. We stocked up on what we thought was most necessary, and we considered becoming self-sufficient. Many people avoided handling cash wherever possible.

A model to feed the world.

The world population is growing – and with it demand for food. With a view to satisfying this appetite in the future, Ruth Delzeit and her team model how to make the best use of the land available to us.

Text: Catherine Weyer

A farmer in the Swiss municipality of Hemmiken drives a tractor across his field. His mind is on his wheat: Will he be able to sell it for enough money to make his efforts worthwhile in the future? Will he even find buyers for his wheat five years from now? And what else will he be able to grow on his land if temperatures keep on climbing, heralding inordinately dry summers or fields flooded by torrential downpours?

These are the questions that Ruth Delzeit is trying to answer. The professor of global and regional land use change and her team at the Department of Environmental Sciences are modelling how we should best use natural resources going forward. The underlying issue is not so much how we want to farm the land, however – but rather how we must. “In the medium term, environmental concerns are something we cannot afford to keep putting off. Otherwise we’re going to run out of fertile soil for food production very soon,” Delzeit warns.

Dependence on international players

The agricultural sector is feeling the pressure from all sides: Growing population, growing prosperity, but also growing

criticism of how we farm our soil – and what consequences it has for the natural world.

There are a host of factors at play: The farmer in Hemmiken lives and works in a small village, pays taxes to the local authorities and can exercise voting rights in Switzerland’s democratic system – but his future is closely intertwined with that of global players. And this is precisely what makes Delzeit and her team’s work so complex. “Right now, we have three doctoral researchers getting to grips with the model – I don’t envy them,” she says with a hearty laugh.

Minor changes, broad consequences

The team is working on a microeconomic model that computes states of general equilibrium, taking all sectors of industry into account. They simulate the effect of a particular change in the current situation. “We can use the model to calculate different scenarios, for instance by introducing a tax on meat consumption in industrialized nations,” Delzeit explains. “As meat products become more expensive for consumers, their income is diverted to other products. Rising demand drives up the price of these products, too,

altering entire trade patterns. For instance, the amount of animal feed imported by industrialized nations might fall, while vegetable imports rise. New market equilibriums emerge, and we can compare the situation with and without the tax.”

In order to make their predictions about the future of food production, there is a great deal that the researchers have to consider. How many people will live on the planet in the future? Will they want to eat more meat or legumes? How will global food trade evolve? Will we see a rethink of land use at local level? And what political decisions will have been made at national and international level by then?

Research aids decision-making

Requests for a prognosis on agricultural policy in the year 2050 are waved aside: “We can make forecasts for the next three or four months, but no longer.” And that is not what Delzeit is trying to achieve. “What we do is create tools that support decision-making,” she explains. She leaves the creation of a concrete roadmap to others – her team’s if-then analyses are intended solely as guidance. And that is

how Delzeit believes it should be: “I think researchers should refrain from interpreting too much. And when they do, it should be clearly acknowledged.”

Delzeit first began dealing with issues of land use and the associated conflicts almost twenty years ago. Back then, she was doing research on biogas as a student assistant. “At first there was a great deal of hype, and no one was worrying about the negative effects,” she recalls. Then came the financial crisis of 2008, accompanied by a changing climate and food speculation on the stock markets. All of a sudden it was impossible to buy corn in South America, so the impoverished population starved while industrialized nations were converting corn into fuel. “It was undoubtedly a concatenation of various unfortunate events at the time, but it highlighted the emotional and moral charge associated with biofuels,” Delzeit says.

Intensive cultivation if sensible

It is situations like these that Delzeit and her team hope to avert with their scenarios. Is it better to find new areas for agriculture, or cultivate existing farmland more intensively? What impact will this have on food prices? And how will biodiversity be affected?

One of Delzeit’s findings is that more intensive agriculture is less harmful in terms of biodiversity than cultivating additional land. But once again, it’s not quite that simple. “In industrialized nations, agriculture can’t get any more intensive,” she explains. “We’re already experiencing problems with nitrate in groundwater as it is.” In other regions, such as sub-Saharan Africa, however, the situation is quite different: “In these areas, production could be massively increased through targeted fertilization without using additional land.” This approach would leave other areas untouched by agriculture, favoring local biodiversity.

So should Switzerland stop producing certain foodstuffs if they can be grown more efficiently elsewhere? “That’s not realistic,” Delzeit says. “Countries like to be self-sufficient. They don’t want to be completely dependent on other countries. The coronavirus pandemic has made it abundantly clear what can happen when desperately needed goods are suddenly withheld at the border.” In other words: another problem with no obvious solution.

Efficiency or robustness

And this is precisely what Delzeit has been trying to figure out over the last twenty years: What is the best way to guarantee food security decades into the future? Should we grow efficient crops in vast monocultures, or is it better to rely on old varieties that are more robust, but offer a lower yield? “India, for example, is falling back on old rice varieties that are better able to cope with flooding,” Delzeit reports. “This is a sensible adaptation to climate change.” Here too, however, there is no single right way to both feed the world and protect biodiversity, Delzeit reiterates.

Food production is not the only way to bring about change, the professor points out: “We need to think about caloric efficiency: How much effort is involved in ingesting 1,000 kilocalories – in the form of meat or high-protein plants?” The current trend toward increasing consumption of meat and dairy products in emerging economies will bring new challenges for global agricultural policy. This is another cog in Delzeit’s hugely complex model.

Lofty expectations

“Meanwhile, the issue of food waste offers huge potential,” she adds. In Switzerland alone, 2.8 million tons of food that could have been eaten are discarded each year. “We have extremely high expectations of what we put on the table, making

us throw out food that is perfectly safe to eat,” she criticizes. It’s a luxury we can ill afford – and the brunt is borne above all by the natural world. This is another area in which Delzeit believes political incentives could make a difference. “If food were more expensive, it wouldn’t be wasted on such a massive scale.” But agricultural subsidies mean that supermarket price tags don’t reflect products’ actual cost – so consumers feel less compunction about discarding them.

Delzeit took up an invitation to work at the University of Basel in February, having previously headed the Environment and Natural Resources research center at the Kiel Institute for the World Economy. At Basel she plans to expand her research focus with projects on sustainable water use, regional case studies and an examination of subsidization policies. “Right now, both biofuels and fossil energy carriers benefit from state subsidies. It will be interesting to model how political decisions affect the use of these fuels in the future,” she remarks. Once more, there is little chance of a straightforward solution. But that is not what Ruth Delzeit is looking for. ■

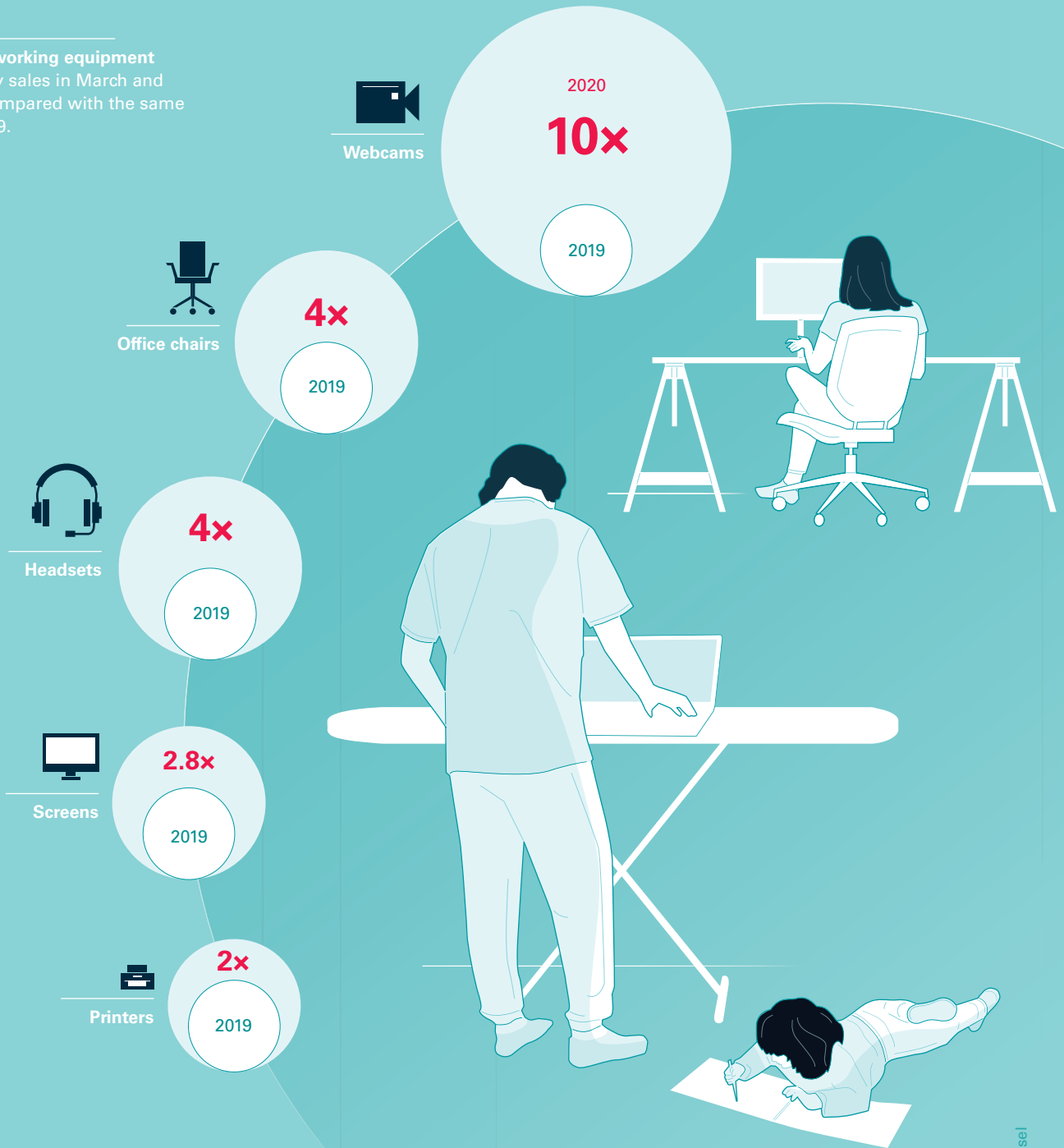


Ruth Delzeit

has been Professor of Global and Regional Land Use Change since February 2021.

Dossier

More home working equipment
Average daily sales in March and April 2020 compared with the same period in 2019.



Staying at home

Life took place within our own four walls. Our homes suddenly became our offices and classrooms, and this called for some flexibility – for example, the ironing board also served as a standing desk. At least online shopping was still possible. We also cooked more, which was reflected in the power consumption of private households – including those in the Basel region.

More time at home

-40.6%	Demand for public transport
-12.2%	GA Travelcards

Higher energy consumption

+2.3%	Private households and microenterprises*
-6.7%	Trade and industry

* In previous years: Reduction of 1.5 to 2% due to efficiency measures.

Stronger together.

Bonding together with like-minded people is part and parcel of human nature. What this can achieve can be seen in the example of the Gundeldinger Feld development in Basel. Far from being a threat, growing and heterogeneous societies actually represent an opportunity in this context.

Text: Noëmi Kern

Gooooaa! The crowd cheers, and the stadium is filled with a collective euphoria. The love of soccer and “their” club turns the spectators into allies – into a society. What’s more, this happens despite – or precisely because of – the fact that they barely know one another. When they part ways after the game, they might never see each other again.

Oto Potluka is well-versed in these social phenomena. Working at the Center for Philanthropy Studies (CEPS) of the University of Basel, the political scientist conducts research into how societies are formed and what makes them stronger or weaker. Sport is a particularly good example of the dynamics of community building: “It’s the lowest common denominator for the people in the stadium. Other things can emerge from this euphoria, but they don’t necessarily have to,” he says.

At the same time, it’s not only feelings of success that can create a sense of community. On the contrary, negative experiences can be an even stronger driver of this effect: “Crises such as the coronavirus pandemic encourage cohesion,” he says. “In these circumstances, people are prepared to give each other a helping hand.” It makes you realize that you would also be glad of assistance if you found yourself in a difficult situation.

After all, humans are social beings. We want to group together with like-minded people and pursue a common goal. This leads to the formation of communities – both formally organized ones, such as associations, and loose groupings, such as a group of people playing a round of cards. What matters is the level of commitment: “The key thing is that people are active. Only then can a community emerge,” says Potluka.

The fact that collective action can lead to great things is demonstrated by Gundeldinger Feld, a private urban development project in the “Gundeli” district of Basel. The project was the subject of a case study by Oto Potluka that aimed to examine how social innovation can play a successful role in urban development.

United by a common goal

It all began when an engineering company moved away 20 years ago. “The uncertainty surrounding the future of the site and how this would affect life in the district raised concerns among residents,” says Potluka. In order to find a solution that worked for the local area, five people got together. They began thinking about the site’s future. Their idea was for it to become a space where local residents could meet.

Instead of simply putting their own ideas into practice, the initiators asked other people about their wants and needs. In the process, some people also expressed worries and fears. “That’s only possible if people communicate with one another,” says Potluka, who is convinced that communication and mutual trust are vital to forming functioning communities.

Various interest groups had the chance to get involved in the Gundeldinger Feld development, although this participation also led to conflicts: The more people are involved, the more disparate are the aims they hope to fulfil. At the same time, however, community involvement also represented an opportunity: “Resources grow as more people get involved – and people are united by a common goal,” says Potluka. He suspects that the opportunity to help shape the project resulted in greater public acceptance than if an investor had implemented their vision for the site unilaterally.



Oto Potluka

is a researcher at the Center for Philanthropy Studies. His main areas of interest include impact evaluations, in particular regional development and the role of civil society.

Still, nothing would have been possible without money. The initiators drew on their own networks in order to identify companies that might be interested in becoming tenants or investors. Today, Gundeldinger Feld is home to – among other things – a day care center, bars and restaurants, a brewery, a climbing hall, a recording studio and office spaces. The development is the ultimate realization of heterogeneity and has long since attracted more than just local residents.

Oto Potluka’s case study reached the following conclusion: “For me, the key factors in the project’s success were dialog, power sharing, networking and funding.” Although the success of Gundeldinger Feld might encourage others to imitate the project, Potluka adds that “you can’t simply implement the same model at another location. Every location has its own particular circumstances, which must be taken into account.”

Heterogeneity represents an opportunity

Gundeldinger Feld is an example of a “bottom-up” solution. In other words, every aspect of the project was implemented “from below” at the private level with no need for “top-down” intervention by the state. For Potluka, “bottom-up” is a good approach in a growing, heterogeneous society. Initiatives of this kind arise locally and consider the needs of local residents. In scientific terms, this is referred to as place-based management.

Potluka believes that Switzerland’s federal system fosters this approach, and that direct democracy encourages dialog. “Take the Bernese municipality of Moutier as an example: The people were able to decide at the ballot box whether they wanted to become part of the Canton of Jura,” says Potluka, although he adds that, “in Switzerland, it takes time to reach a consensus.”

That isn’t always an easy task in the context of a growing population and migration – which brings

people from different backgrounds into contact with one another. “In these circumstances, it’s particularly important to communicate with each other in order to reconcile different views and arrive at solutions together,” says the Czech researcher. In any case, he is certain of one thing: “If we can achieve that, then heterogeneity represents an opportunity for the community.”

Communities exist at the global level

Utilization of this opportunity is only possible if those who live in a foreign country also get involved. Expats are often accused of living in their own bubble. “Those who want to build contacts and get involved will do so wherever in the world they live,” says Potluka, speaking from his own experience. For the last three years, the researcher has been an active member of the voluntary fire department in Binningen. “In my opinion, however, a community isn’t necessarily tied to a location – it can also exist in the virtual realm.” Digitalization has made it easier to exchange ideas with like-minded people around the globe. This phenomenon has been reaffirmed by the pandemic and is giving rise to new forms of communities.

At the same time, communities that only exist online differ from those in which people know each other in person. “If people live in one place and meet regularly, the ‘inner cohesion’ effect is stronger,” says Potluka. The more pronounced this effect, the greater the obstacles to leaving the community. “People in ‘Gundeli’ couldn’t move away from one day to the next when the circumstances at Gundeldinger Feld changed, but the opportunity to get involved meant that they could make the project their own. That strengthens their connection with the place.”

Functioning communities are beneficial for everyone. Indeed, research shows that a society in which people group together is more stable. When people share their interests with others, it gives them a sense of belonging. This is referred to as social capital: “Where there are lots of communities, the social networks are denser. People know each other better and can therefore discuss issues and arrive at solutions faster,” explains Potluka. That’s good for social peace.

Is it not also the case that a sense of belonging can cause communities to come into conflict with one another? The researcher doesn’t think so, and he once again draws a comparison with the world of soccer. “Although fans of different clubs are rivals when it comes to the national league, they actually can’t make do without each other – and they’re all rooting for the same team at the international level. What matters then is their shared love of soccer.” ■

“Those who want to build contacts and get involved will do so wherever in the world they live.”

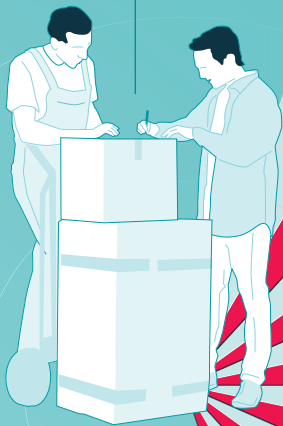
Oto Potluka

Dossier

+23.3%

More parcels

Growth in parcels sent in 2020 compared with the previous year.



More online sales

Proportion of total sales that were online (stationary and online).

Home electronics

36% (2019)

48% (2020)

Fashion/Shoes

20%

29%

Toys

15%

27%

Sport

16%

26%

Home

7%

12%

9%

15%

DIY/Garden

114 bn

+85%

211

Jan July

More wealth

Increase in the fortune of Jeff Bezos in 2020 (billion USD).

+27.2%

10.3 bn

13.1

2019 2020

Higher turnover

Spending in online trade in billions of Swiss francs.

Shopping with a click of the mouse

What do you do if all the stores are closed during lockdown? You buy the products online instead. Accordingly, huge numbers of parcels were shipped – and postal workers had plenty of work to do. Online retailers were delighted at the increased demand, and Amazon founder Jeff Bezos saw his fortune grow considerably.

An end to endless growth?!

Environmental economist Frank Krysiak and environmental ethicist Andreas Brenner agree on one thing: Our economy needs to become more sustainable. Should we have to reject the growth paradigm in order to achieve that goal? Three arguments for and against a post-growth economy.

Text: Samuel Schläefli

1. No sustainability without sacrifice

“All this talk about green growth and the circular economy has largely been an exercise in political marketing. They’re trying to convince the electorate that it’s possible to just keep on consuming resources guilt-free. But even recycling requires resources in the form of energy. Nicholas Georgescu-Roegen, whose work helped establish the concept of ecological economics, has been studying the biophysical limits of our dominant economic model since the 1970s. He helped pioneer the concept of ‘degrowth’ and realized



Andreas Brenner

is an honorary professor of philosophy at the University of Basel and professor at the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) in Basel. His research focuses on questions of environmental and economic ethics.

that it’s not possible to achieve unlimited growth within a limited system. But in spite of that fact, the idea of unlimited growth continues to serve as a kind of collective delusion in the industrial economy. In truth, there is only one option open to us: We’ve got to put the brakes on our consumption! And by ‘we,’ I mean the wealthy populations of rich, industrialized countries. There’s an oft-cited argument that consumption by the rich helps the poor catch up financially, but I don’t find it at all compelling. If we consume more, how is that supposed to help the around one billion people living in abject poverty? On the contrary, rich countries pressure poorer countries to build up their entire economies around resource extraction. The poor countries are trapped in these dependent economic relationships and are forced to acquiesce to the destruction of their natural environment.”

2. Growth without gain

“In industrialized nations, economic growth no longer improves our quality of life, and it hasn’t for a long time. It’s quite the opposite, actually. We keep ratcheting up the tempo – and digitalization plays a significant role here – so nobody has any time to think, let alone enjoy their lives. Marketing creates an inherent drive for

us to want to own more and develop our personalities through consumption. The work of American philosopher Michael Sandel shows how almost all areas of our society – including education and health-care – have now been economized. Even the destruction of the natural world has been commercialized within the framework of contemporary CO₂ trading schemes.”

3. The common good instead of utilitarianism

“Utilitarianism, which is the philosophy underpinning capitalism, is focused solely on material accumulation. The growth paradigm has relegated what really matters in life to an afterthought – namely, meaning instead of quantity. Even Aristotle believed it was friendship that made life worth living and that humans are political beings with a desire to engage in communities. Many people strive to develop positive relationships with others and with the environment. But living in a profit-oriented economy certainly doesn’t make it easy to live that kind of life. However, there is an alternative: a global economy that values the common good over material wealth gained at the expense of other people and the natural world.”



Frank Krysiak

is a professor of environmental economics at the University of Basel. His research focuses on the effects of economic policy and the economic theory of sustainability.

1. Qualitative growth is the solution

“Post-growth is largely a ‘First World’ idea. You won’t find much support for the notion in places like Zambia and Ethiopia. On a purely objective level, there are many parts of the world where quantitative economic growth is imperative. If people are hungry, it means they need more food. That’s why it’s important to differentiate between quantitative and qualitative growth. The latter is limited only by human ingenuity, the creativity to transform the same natural resources into a better quality of life. Take organic meat, for example; I pay more for it than I do for factory farmed products. If I cut my meat consumption in half but spend three times as much on the meat I buy, that’s still growth and it ultimately raises the GDP. Or consider smartphones, for instance: You can buy a cheap phone once a year or purchase a more expensive, robust model that’s easy to repair once every five years. Most people would prefer the latter option, and it would be better for the environment as well. Add to that the fact that it is possible to achieve our climate goals today using renewable energies, even if energy consumption were to increase. We have to recognize the importance of decoupling economic growth from resource use.”

2. Innovation instead of compulsory sacrifice

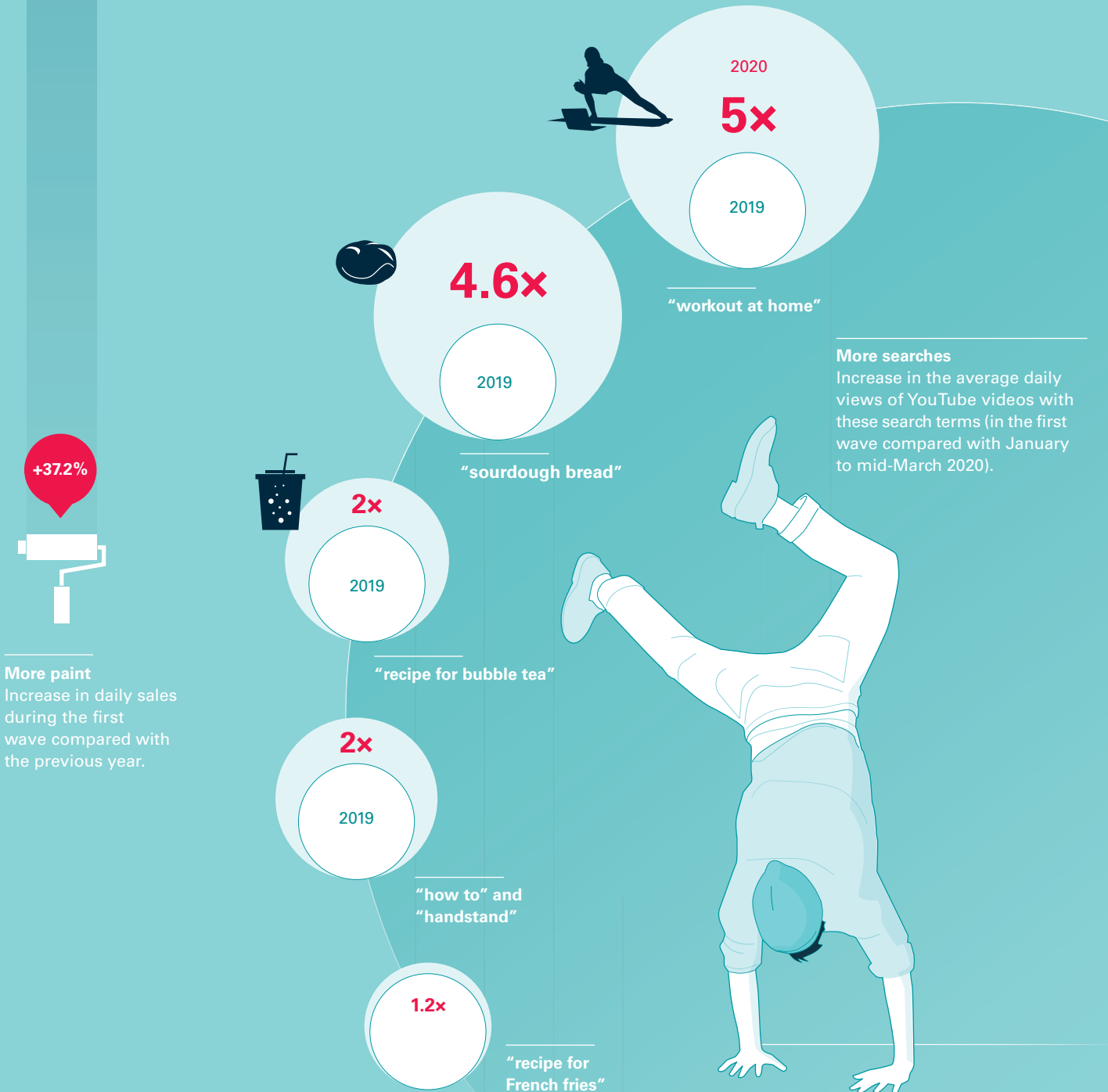
“Sufficiency can be a productive idea so long as we wield it responsibly and leave room for people to make their own decisions. But it won’t work if our goal is to mandate austerity and exhort people to lower their expectations when it comes to the quality of their lives. The way I see it, the aim is to offer different perspectives on how to lead a fulfilling life. We see that very clearly in mobility: around 50 percent of households in the Canton of Basel-Stadt no longer own a car. The important thing is to provide people with opportunities to experiment with these types of al-

ternative lifestyle concepts. Our research shows that when simply presented with the opportunity to try alternatives at very little cost – without any pressure or political propaganda – people can be surprisingly willing to experiment. But we should not rely on this exclusively, political measures and incentives are important as well.”

3. Self-interest must remain a central driver of green growth

“The idea of an ‘economy for the common good’ is nothing new. In fact, it was widespread in the former Eastern Bloc states. It didn’t work. Personal gain is an extremely strong incentive for many people, and we shouldn’t underestimate the power of the drive to act in one’s own interest. We can be far more successful if we channel that self-interest for the common good instead of trying to fundamentally uproot it. And when it comes to green growth, that approach can be very powerful indeed.” ■

Dossier



More searches

Increase in the average daily views of YouTube videos with these search terms (in the first wave compared with January to mid-March 2020).



+37.2%



More paint

Increase in daily sales during the first wave compared with the previous year.

New forms of leisure

Fitness center: closed! Restaurant: closed! Museum: closed! We tried to keep fit at home and to make our own French fries and bubble tea – with a little help from YouTube. We finally found the time to bake, and to give the walls a fresh coat of paint. If we had to be at home, we could at least make it look nice!

+38.1%



More exercise

Growth in sales of push-bikes and e-bikes (in 2020 compared with 2019).

6x



More yeast

Increase in sales in the 3rd week of March 2020.

Source: YouTube Culture & Trends; Digitec Galaxus AG; Velosuisse; foodaktuell

“Even mathematicians sometimes get it wrong.”

Text: Tim Schröder

Many countries were caught off guard by the rapid surge in Covid-19 cases. Mathematician Helmut Harbrecht discusses the mathematics behind exponential growth – and why we have such a hard time wrapping our heads around it.

UNI NOVA: Throughout the coronavirus pandemic, exponential growth has become something of a buzzword. Growth is a familiar enough concept. However, when we add the term “exponential” it gets a bit more complicated ...

HELMUT HARBRECHT: Exponential growth is simply a process whereby something increases by a given factor over a fixed period of time. In the context of Covid-19, it refers to the rise in infections over a few days. Because exponential growth is something we rarely encounter in our everyday lives, most people don't really grasp just how incredibly fast this kind of growth can be.

UNI NOVA: Can you think of an example that would make it clearer?

HARBRECHT: The classic example is the Indian legend about a wise man who invented the game of chess many hundreds of years ago. King Sher Khan was so pleased with the game that he summoned the wise man and asked him to choose his reward. He replied that for each square of the chessboard, he wanted twice as many grains of rice as on the previous one – starting with a single grain on the first square. The king laughed at the wise man's apparent lack of ambition, but his treasurer became uneasy, realizing exactly what the request meant: For the second square, two grains of rice would be needed, followed by four on the third, eight on the fourth, and so on. For the 25th square, the figure is more than 1.6

billion grains of rice. By the end, it is far greater than all the rice in the world. The total amount needed is more than 10^{19} grains of rice – a one followed by 19 zeros.

UNI NOVA: And what does exponential growth look like in the context of the coronavirus pandemic?

HARBRECHT: That's a little bit more complicated. Experts estimate that the generation interval is four days. Each infected person transmits the virus to around 3.5 others, assuming the population is not yet immune. So after four days, 3.5 people have been infected, each of which will infect 3.5 more within four days: that's 3.5 times 3.5, or 12.25. Each of these will infect another 3.5 people. 12.25 times 3.5 is almost 43 new infections after 12 days. And so on and so forth, as with the chessboard. The amazing thing is that even mathematicians like myself sometimes get it wrong when it comes to exponen-



Helmut Harbrecht has been Professor of Computational Mathematics at the University of Basel since 2011.

tial growth. At some point the increments become so huge that forgetting a single step means your result will be of the wrong order of magnitude altogether. The human brain is simply not built to understand it.

UNI NOVA: So non-mathematicians shouldn't feel too bad if it gives them a headache?

HARBRECHT: Many students do in fact have some trouble with the mathematical description of exponential growth, described by the exponential function. Then there is the inverse of the exponential function, the logarithm, which is even more abstract. I always find it very interesting to see what students know when they begin university. That's why I am a member of the examination board for the oral school-leaving examinations at Kantonsschule Olten. This gives me an opportunity to find out first-hand what the pupils have learnt. I am very happy to report that in spite of the coronavirus lockdown, pupils have a level of knowledge that is comparable to what it was before the pandemic. In any case, the main takeaway from the topic of exponential growth is that the mathematics behind it mean something can become very big very fast.

UNI NOVA: How useful is this insight in everyday life, aside from in a pandemic?

HARBRECHT: One example is compound interest, which means that your money grows at a given rate over a fixed period of time – let's be optimistic and say two percent per year. If you invest 100 francs, after a year you have 102, after the second year 104.04, and after the third year 106.13 francs. After 35 years, the investment has doubled. Of course it's a little more complicated than that in real life, as you have to take inflation, bank charges and other factors into account in your calculations. ■

Artificial intelligence tidies up.

The number of photos and videos that people accumulate over their lifetimes is becoming immeasurably large. In order to maintain an overview, we have no choice but to rely on technical solutions. But this has its disadvantages.

Text: Yvonne Vahlensieck

Humanity has now saved almost eight trillion (8,000,000,000,000) photos on smartphones, on computers and in the cloud – and the American market-research company Rise Above Research estimates that this figure is growing by at least another 1.5 trillion each year. That being said, most of these memories will probably never be looked at again. After all – hand on heart – who still has the time to neatly sort through all of this material nowadays?

Thankfully, this onerous task can now be delegated, for example, to apps that recognize motifs and faces, compile photo albums or store photos neatly in their various categories. “As we look to the future, we’ll increasingly be reliant on services such as

these,” says Heiko Schuldt, Professor of Computer Science at the Department of Mathematics and Computer Science at the University of Basel. Schuldt deals with the technical aspects of these tools: How can such huge volumes of data be stored in a way that allows rapid access? How can large collections be searched effectively and in a targeted manner?

In recent years, Schuldt’s research group has developed an innovative system that can do much more than just manage collections of photos. The multimedia search engine “vitivr” also sifts through other types of media such as videos and audio recordings, and allows users to search using more than just keywords. “You can also search based on sketches, sounds, motion sequences and much more – and in all kinds of media,” says Schuldt. This year, vitivr led the Basel-based team of researchers to victory in a competition where the aim was to find certain video sequences as quickly as possible within thousands of hours of video material.

In order for the system to perform search queries this quickly, ideally in fractions of a second, features such as colors, shapes and objects are extracted from the photos and videos offline and stored in a database in the form of gigantic combinations of numbers. In online searches, the computer also converts the search query into a numerical pattern and searches the database for similarities.

Many human abilities are lost

“The computer doesn’t see a sunset – it just sees a bunch of numbers,” says Ivan Dokmanić, professor

“It’s popular to call it artificial intelligence, but there’s nothing intelligent about it.”

Ivan Dokmanić

of data analytics at the Department of Mathematics and Computer Science. He is an expert in machine learning – a method that trains a computer to solve a problem with the help of large datasets. Since the computer thereby assembles the suitable algorithms itself, so to speak, machine learning is an important step toward artificial intelligence (AI). Dokmanić is researching the application of machine learning in imaging – for example, to reconstruct higher-quality CT images with reduced radiation exposure. Applications that help find and sort photos operate according to similar principles, having undergone training using millions of photos that humans have previously tagged with keywords.

Dokmanić actually takes something of a critical view of this application of machine learning: “Computers learn differently from people. It’s popular to call it artificial intelligence, but there’s nothing intelligent about it.” The automated systems do deliver results that seem to make sense at first glance. Still, many subtleties are lost – perhaps without our noticing: For example, the app might identify a blurred photo as bad and choose not to display it – even though it shows our daughter’s first steps. Or, conversely, the program might not know that the beach photo includes our ex-girlfriend and therefore doesn’t belong in an album of our best holiday memories. There is also another problem: Both Dokmanić and Schuldt point out that there are risks associated with unthinkingly entrusting our personal data to the various photo apps and cloud providers. “Although these programs provide some nice added value, that value can come at a very high price. A healthy dose of skepticism is called for,” says Schuldt.

More transparency is needed

The psychologist Florian Brühlmann also believes it is important to gain a better understanding of how these programs work. “The modern algorithms used in machine learning are actually an opaque box, where users can’t understand how decisions are made,” says Brühlmann, who is director of the Human-Computer Interaction Research Group of the University of Basel. Accordingly, there are already calls for these algorithms to satisfy certain ethical criteria, such as reliability, fairness and transparency. Brühlmann and his colleague Nicolas Scharowski are particularly interested in the last point: “We’re searching for methods to make the behavior and decisions of artificial intelligence more comprehensible to humans. The more complex the systems, the

“Although these programs provide some nice added value, that value can come at a very high price.”

Heiko Schuldt

more difficult this becomes. At some point, even the programmers don’t know what exactly is going on inside the opaque box.” More recent research shows, however, that it may not be necessary to understand everything down to the last detail – for example, it may be helpful simply to know the most relevant decision-making criteria or to give users an indication of what they could change about the query in order to obtain a different result. In everyday terms, Brühlmann wants to evaluate how and whether these explanations actually deliver greater transparency and trust in algorithms as part of a series of studies over the coming years.

How do the experts themselves handle their own private floods of data? “Perhaps one should dare enjoy reality tête-à-tête instead of endlessly snapping pictures,” says Ivan Dokmanić. But he adds that even for him it’s an uphill battle given how addictive smartphones are. Florian Brühlmann attempts to sort through photos in a timely manner, immediately marking the favorites that he may want to look at again in the future. In contrast, Heiko Schuldt generally archives his images without looking through them (albeit not in the cloud!). Of course, if he wants to find something again, he can always use the search program that he played a part in developing. ■

A better way to save.

Text: Martin Bornhauser

The point of investing is to multiply your assets – as a provision for older age, for example. Shares offer a higher yield than a retirement savings account. When choosing a private pension plan (known as pillar 3a in Switzerland), fees and transparency are important considerations.

When we are young, worrying about retirement is not usually a top priority. After all, it is still a long way off. It makes sense to get started with private pension arrangements early on, however – precisely because of the extended amount of time in which you can let your money work for you. What is more, “there is a very big difference between leaving your money in a savings account with a 0.5 percent interest rate, and earning an average of 6 percent per year with an equity fund,” says Jacqueline Henn, a research associate at the chair of financial market theory at the University of Basel. “In the first example, after 36 years 10,000 francs will have grown to around 12,000 francs; in the second, to more than 80,000 francs.” This is due to the phenomenon of compound interest, according to which your capital grows exponentially (cf. page 23).

The “Rule of 72” is used to calculate the time it will take for the initial sum to double. The number 72 is divided by the annual rate of return, so for an interest rate of 6 percent it takes twelve years to double one’s capital – assuming steady growth of share prices, which is not what happens in reality. Stock markets regularly suffer setbacks. This is probably why many people are reluctant to invest in shares: “People attach significantly more importance to losses than they do to gains,” Henn remarks. Accordingly, they miss out on the higher average returns offered by shares.

In Switzerland, pillar 3a gives employed persons with an income subject to AHV contributions (old-age and survivors’ insurance) the option of paying a given amount into a private pension scheme each year. As of 2021, the maximum tax-deductible amount is 6883 Swiss francs. This applies to people who belong to a pension fund. Self-employed persons who do not benefit from pillar 2 can invest up to 20 percent of their net income, or a maximum of 34,416 Swiss francs, in pillar 3a each year. For flexible pension schemes, which make up pillar 3b, no upper limits or tax deductions apply. These schemes are open to everyone, and the capital can be accessed at any time.

Henn recommends having multiple pillar 3a accounts. “This is beneficial as withdrawals are subject to taxes that are not income-based and rise progressively,” warns the financial expert, who teaches a continuous education course in personal finance at the University of Basel. The assets can only be withdrawn five years before retirement at the earliest. If a person has five retirement savings accounts, for instance they can liquidate one per year so as to save taxes, Henn explains.

Savings account or pension fund?

Essentially, pillar 3a offers a choice between a retirement savings account, at present offering an interest rate of around 0.1 percent, and a pension fund. Insurance companies also offer pension solutions that include insurance against death and invalidity.

When investing in a fund, it is important to consider the investment horizon. “The younger you are, the more you stand to gain from the compound interest effect and the more risk you can bear.” For example, a long-term horizon allows you to wait for the next upswing after a share

price crash,” says Henn. After the age of 50, on the other hand, it makes sense to gradually scale back shareholdings to reduce risk.

Beware high fees

With funds, it is essential to consider the associated fees and frequent lack of transparency. Many pillar 3a funds invest in shares and other securities, but only disclose the share ratio, and at most the largest holdings. Moreover, active pension funds of this sort, which buy and sell shares and other securities more often, are frequently expensive, charging annual running costs of up to 1.5 percent regardless of performance. There can also be additional charges, such as an issue and redemption commission, that further eat into the returns.

It can therefore make more sense to choose funds with a passive investment approach, which track share indices and tend to be cheaper. This allows investors to participate in the performance of the stock market without being dependent on the investment success of a portfolio manager. It also ensures that the investments remain transparent. ■

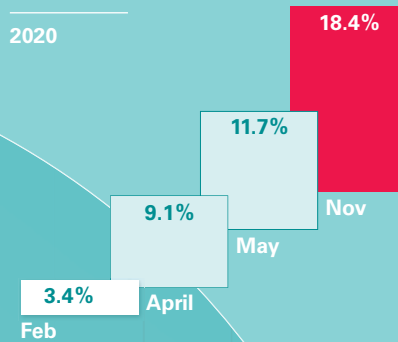


Jacqueline Henn Overbeck is a research associate and lecturer at the Department of Financial Market Theory in the Faculty of Business and Economics.



More sleep

Despite an average increase of 13 minutes in the length of sleep, over 400 study participants in a survey reported a perceived reduction in sleep quality.



More signs of depression

Survey of more than 10,000 participants from across Switzerland. Rise in reporting of symptoms of severe depression during 2020.

More support



YouTube

Increase in daily uploads of videos on "self care" during the first wave.



Caritas

Over 10,000 counseling sessions conducted by the end of 2020.



SafeZone

Rise in active online counseling for addiction.



2020 | 7106 volunteers

2019 | 5559 volunteers

More volunteers

Increase in volunteers working for the Swiss network "Benevol".



A strain on mental health

The situation also affected our well-being. Although we slept more, we didn't sleep as well as before the pandemic. Circumstances increasingly took a toll on our mental health, and there was greater demand for low-threshold counseling services. At the same time, we realized the importance of taking care of people who are in need of support.

The multitalented protein.

30 years ago, Michael N. Hall and his team made a profound discovery. With far-reaching implications. Only after numerous setbacks, came success and recognition.

Text: Angelika Jacobs



Michael N. Hall first joined the Biozentrum at the University of Basel in 1987 as an assistant professor. Since 1992, he has been involved in teaching and research there as Professor of Biochemistry.

This right here,” says Michael N. Hall, tapping a sketch on a sheet of paper before him, “is life.” He points to a circle that becomes two and then four new circles. “We are the product of an unbroken line of cell divisions ever since the first single-celled organism.” However, as Hall points out, the sketch actually shows two overlapping processes, one of which was long neglected: cell growth. Cell division without cell growth would result in progressively smaller cells, so it could not work.

The man sitting in an office in the brand new Biozentrum building has the considered demeanor of someone who has not let his fame go to his head. 30 years ago, Hall and his team discovered the link between nutritional intake and cell growth. Today, it seems hard to believe just how difficult it was to convince the scientific community of this discovery, which laid crucial foundations for the treatment of cancer, diabetes, depression and possibly Alzheimer’s disease.

Enigmatic substances

It all began with a group of new substances that ushered in a breakthrough in organ transplantation in the 80s. By inhibiting the proliferation of immune cells, they prevented the body from rejecting the donor organ. But precisely how these new immunosuppressants worked remained a mystery.

Hall came to the Biozentrum in 1987, but his research initially made relatively slow progress. His postdoctoral fellow Joe Heitman, whose interest had been piqued by the new immunosuppressants,

needed a new project. So, Hall obtained the drugs, among them rapamycin. In an attempt to get to the bottom of how they worked, the researchers decided to use yeast cells – a radical approach at the time. “A lot of people thought we were crazy, giving human drugs to yeast,” Hall recalls. Today, this is common practice, as yeast is easy to work with and most of its cellular mechanisms are similar enough to those of human cells to yield valuable insights. The gambit paid off: right off the bat, Hall and Heitman, with their collaborator Rao Movva, found that just like the immune cells, rapamycin prevented yeast cells from multiplying.

Heitman decided to look for the “switch” in the cell that enables rapamycin to suppress cell proliferation. In the run-up to Christmas of 1990, with his return to the US looming, Heitman was still frantically running tests when he hit the jackpot. Practically on the way to the airport, he was able to confidently identify two genes required for rapamycin to take effect. The researchers named them TOR1 and TOR2, for “Target of Rapamycin”. Their initial results appeared in *Science* in August 1991. Soon after, other research groups described the mammalian variant of TOR, mTOR.

After Heitman’s departure, Hall’s team remained on the scent. In the beginning, the going was tough. The TOR genes turned out to be exceptionally large for yeast, making them difficult to characterize. Finally, the researchers managed to piece together the results of their painstaking efforts. The task of TOR

appeared to be to regulate cell division, a function that was blocked by rapamycin. This turned out to be a mistake, however.

A eureka moment in Vienna

Due to this mistaken hypothesis, subsequent experiments failed. Michael Hall tells of a difficult period. The breakthrough finally came thanks to an invitation to Vienna in 1993. The cell cycle expert Kim Nasmyth asked Hall to present his results in a seminar. Hall knew that Nasmyth was skeptical of the hypothesis that TOR regulates the cell cycle. “I went in braced for a confrontation.” Yet the discussion brought a crucial aspect to light: Whereas cells in which the known regulators of cell division are disabled do not divide, they nevertheless continue to grow. Not so the cells with inhibited TOR signaling: these cells do not divide, but neither do they grow. This gave Hall an idea: What if TOR did not regulate cell division, but cell growth? “It was as if someone had suddenly switched on the lights.” Back in Basel, the team set up the appropriate experiments. Over time, Hall and his team figured out that the two TOR proteins essentially act as sensors for nutrients, controlling cell growth via two signaling pathways. If nutrients are available, TOR initiates processes that produce cell components. At the same time, TOR inhibits degradation processes. Cells have to reach a critical volume to divide. In the absence of the corresponding signal from TOR, however, the yeast cells remained the same size, and therefore stopped dividing. Hall realized they had made a fantastic discovery: growth was not a passively regulated process, as they had thus far assumed – it was actively controlled, and he and his team had discovered the central regulator.

At first, the scientific community remained unimpressed. The manuscript endured no less than seven

rejections before it was finally accepted by *Molecular Biology of the Cell*, a relatively young publication at the time, in 1996. Today, the paper is considered a milestone in the field of cellular biology. Hall has since been awarded prestigious research prizes, and is seen as a contender for a Nobel Prize. As he recounts, however, it was not plain sailing. Hall produced books and toured from one conference to the next to explain time and again that cell growth meant something different to cell division. There were times when results in the lab were not forthcoming, causing his postdoctoral fellows to worry about their career and prompting some to quit the project. “For a while, we were sailors adrift on a sea of frustration, and the islands of discovery were few and far between,” the stoic 68-year-old recalls.

An antidote to aging?

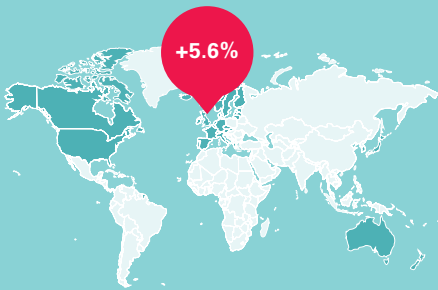
TOR has since emerged as a highly versatile tool. By blocking this nutrient sensor, cells can be tricked into thinking they are starving, causing them to suspend growth. In cancer cells, TOR is often overactive, giving TOR inhibitors such as rapamycin an important role in cancer treatments. TOR could also play a part in determining lifespan: As early as 1935, researchers discovered that modest calorie intake prolonged the life expectancy of laboratory animals. In the 2000s it became clear that TOR inhibitors can simulate such a calorie deficit, allowing animals to live longer. “If you look at rapamycin sales, there is no question that people today are self-medicating in the hope of slowing down the aging process,” Hall concludes. He sees little hope in conducting a clinical study with human subjects, however. “Aging is not a disease to be healed.”

For Hall, the next major medical application is the brain – for instance in treating Alzheimer’s, a disease in which protein clumps are deposited in the brain, damaging the nerves. Inhibiting TOR in this region could potentially help these damaging clumps break down faster, slowing down the progression of the disease. Meanwhile, in patients suffering from depression TOR appears to contribute to the success of the fast-acting antidepressant ketamine. The drug activates TOR, supporting the formation of synapses in the brain – which are in short supply in patients with severe depression.

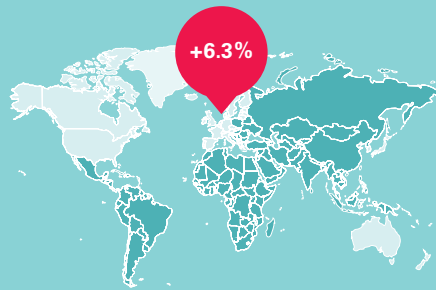
“TOR just keeps on yielding breakthroughs in new fields,” Hall concludes. What is more, he owes the ceaseless excitement of his research career to the protein. The Nobel Prize is a subject he prefers to avoid, however. He says it won’t bother him if he never receives it – just so long as his gravestone doesn’t bear the inscription “Here lies the man who did not win the Nobel Prize.” ■

“It was as if someone had suddenly switched on the lights.”

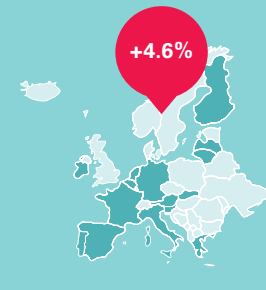
Michael N. Hall



Industrialized countries



Developing and emerging countries

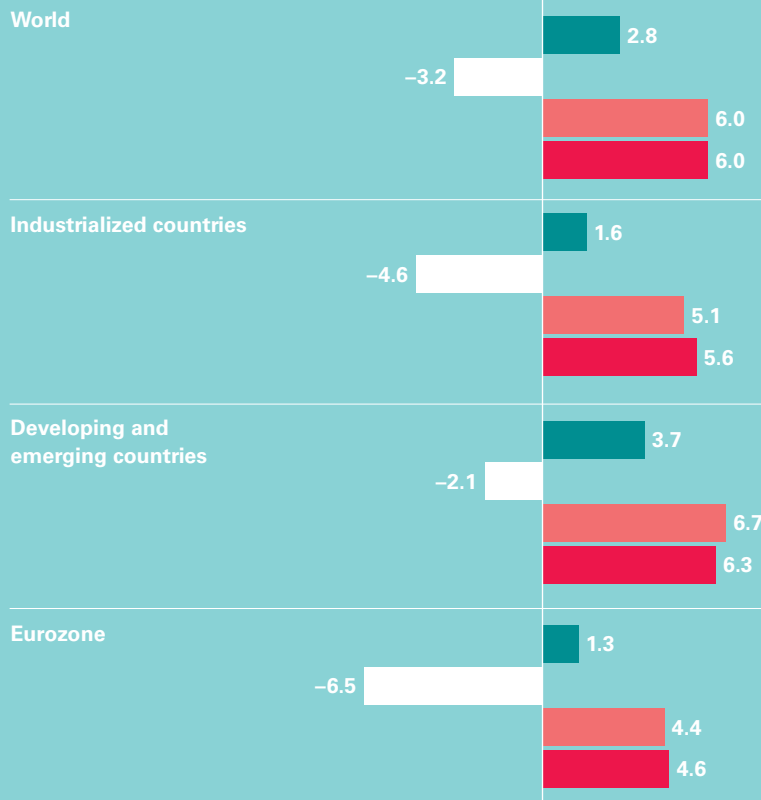


Eurozone

Overview by country group

Percentage change in gross domestic product relative to previous year

2019 2020 2021 (outlook April) 2021 (update July)



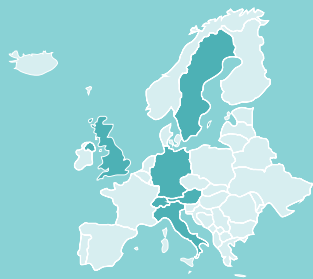
Economic recovery

As a result of the coronavirus crisis, many countries experienced a recession of historic proportions. Although the year 2021 brought a renewed upturn, the International Monetary Fund (IMF) warned in July that factors including delayed access to vaccines in developing and emerging countries would impede the recovery of the local economies. Inequality would increase.

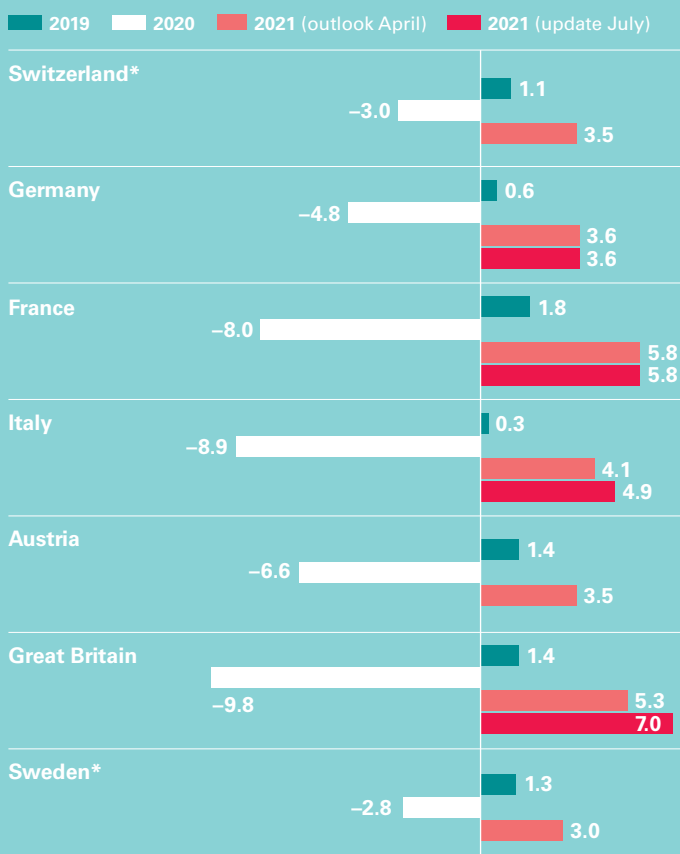
Two camps

In July 2021, the IMF updated the economic forecasts it had issued in April. It now expects global economic growth of 6 percent in 2021, although the recovery of the global economy will be split into two camps: For the industrialized nations, the IMF has raised its forecast by 0.5 percentage points to 5.6 percent. For the developing and emerging countries, it has

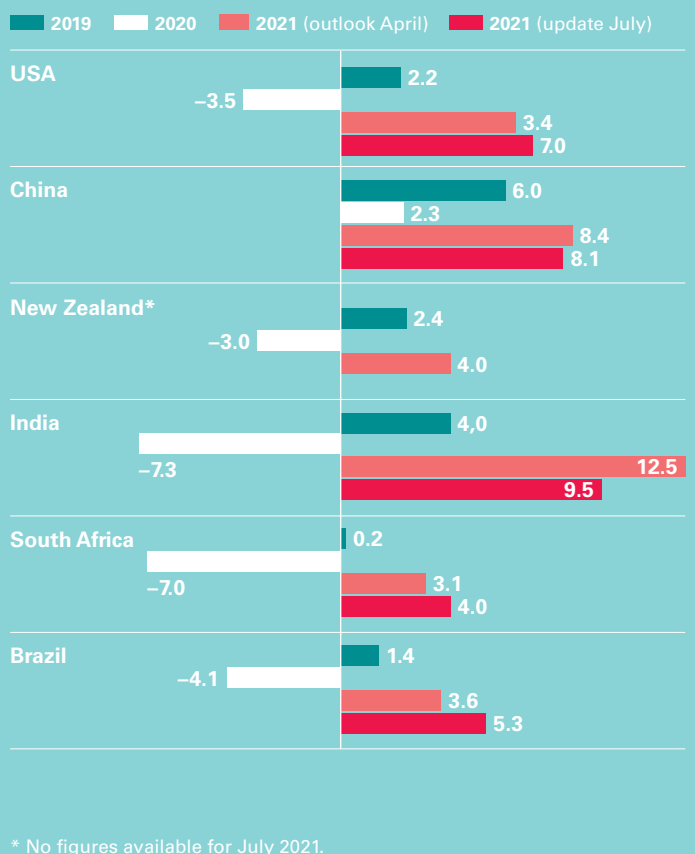
lowered its forecast by 0.4 percentage points to 6.3 percent. The reasons cited by the IMF for these adjustments include disparities in access to vaccines and the resulting faster or slower return to normalcy. Against all the odds, the developing and emerging countries are slowly catching up, with growth rates exceeding those of industrialized nations.



Overview for Switzerland and selected countries in Europe



Overview for selected countries worldwide



Return to normalcy

A well-equipped healthcare system, targeted measures and rapid government assistance cushioned the collapse of the Swiss economy in 2020. Sweden’s economy also remained relatively unscathed. At the start of the pandemic, the country took a somewhat unorthodox approach by opting to preserve freedoms instead of

imposing restrictions. It was above all the older population that paid the price. Thanks to fast-tracked vaccination campaigns, further lockdowns are also becoming less likely in other countries – and the European economy is bouncing back stronger in 2021 and 2022 than the IMF predicted even as recently as April.

Developments around the world

A persistent risk due to viral variants. Strong stimulus programs and the rapidly advancing rate of vaccination have created a promising outlook for industrialized countries, and especially the USA. In contrast, the situation in India shows how a rampaging new variant can put the brakes on recovery, with the IMF having slashed its 2021 forecast for the country

from 12.5 to 9.5 percent. Moreover, the IMF is warning that the economic recovery in industrialized nations is not a foregone conclusion while the virus is able to spread easily in countries with low vaccination rates – and while new, more dangerous variants can emerge in the process.

Weighty questions.

An increasing number of people are severely overweight. Researcher and physician Professor Katharina Timper is on the case, offering consultation and treatment for patients at the obesity outpatient clinic at University Hospital Basel. She often finds herself correcting misconceptions.

Text: Santina Russo

Fifty years ago, just over three percent of the world's population was obese, defined as having a body mass index (BMI) of over 30 kg/m². Today, that number has already reached 13 percent. In Switzerland, the percentage of people living with obesity has more than doubled over the past 25 years. Now, nearly one in ten is affected by the condition. Severe obesity is a risk factor for cardiovascular diseases, type 2 diabetes, dysregulation of blood lipid levels, known as dyslipidemia, cancer and even dementia. But what causes obesity and how can we treat it?

Is obesity a lifestyle choice or a disease?

Obesity is a disease controlled by both inherited and acquired factors. It is caused in part by faulty signal-

ing in the brain, more specifically in the hypothalamus, which is one of the most important centers for regulating energy balance and food intake. In the hypothalamus, specialized neurons receive signals from the periphery of the body and pass on these signals to downstream neurons located in other regions of the brain. There, they feed into finely tuned processes that regulate glucose metabolism and satiety as well as energy expenditure. Innumerable cells, receptors and chemical messengers are involved in these processes, so there are also endless opportunities for error. If certain synapses do not fire correctly or if certain receptors are not functioning properly, this can result in obesity. Errors such as these can be genetic, that is inherited, or they may be acquired, for example as a consequence of environmental factors or living conditions. It is also important to note that environmental influences can even change the way genes are expressed.

How much do the processes in our brains affect how we eat?

There is a very strong connection here. Experiments on mice demonstrate that very clearly. We can genetically modify certain neurons in a mouse's brain so that they can be activated via laser. When the laser is switched on, the mouse eats, and when it is switched off, it stops. Switch it on again, and the mouse starts eating again. The organism is powerless to resist this command from the brain. The effect is similar for us humans: Our desire to eat is controlled by processes within the brain apart from voluntary control. That is just another reason why our assumptions about obese people, particularly those promulgated by healthcare practitioners, are unjustified and extraordinarily destructive and dangerous. In truth,

“The aim of the treatment is not to change the way our patients look. Our sole objective is to minimize risk factors and prevent patients from developing obesity-associated diseases.”

Katharina Timper



Katharina Timper is a professor and research group leader at the Department of Biomedicine as well as chief of service physician and head of the obesity outpatient clinic at the Department of Endocrinology, Diabetology and Metabolism at University Hospital Basel.

the stigma faced by patients affected by obesity is not only caused by the condition – it is a significant contributing factor to weight gain in the first place. Experiencing constant denigration from others negatively impacts self-image, promoting emotional eating, further weight gain and social isolation. That is why it is so important for us to reconsider the issue and address the biological underpinnings of this disease.

To what extent is obesity genetically predetermined?

Inherited factors certainly play a decisive role here. We are aware of a few genes that can cause obesity given specific mutations. Add to that the myriad of other genetic factors that we know nothing about or that we are only just beginning to understand. “Epigenetic factors” are also key. Epigenetics is the mechanism by which the activity of a gene is modified by external factors. For example, the mother’s eating patterns during pregnancy and breast feeding affect the child’s food choice and eating habits as revealed from rodent studies.

How can we treat obesity?

This is teamwork: with the patient and our interdisciplinary team at University Hospital Basel, we help patients change their lifestyle so that they can lose weight through a multidisciplinary therapeutic approach. Our therapy always includes dietary consultation and individualized exercise programs. Patients with depression or those who struggle with emotional eating benefit from coaching by our colleagues specialized in psychosomatic medicine. For patients who report that they eat very little, it often helps to measure daily energy expenditure, or basal metabolic rate. Many patients with obesity have an extremely low basal metabolic rate of little more than 1,000 calories per day. This metric makes it clear why it is so difficult for them to lose weight. We cannot change their basal metabolic rate, but we can help patients burn more calories by engaging in physical activity. That is why we offer a range of different athletic activities, from walking and swimming to trampoline. It helps group participants to train with other obese patients instead of the slim, athletic people they may otherwise see at the gym. It all comes down to this: The aim of the treatment is not to change the way our patients look. Our sole objective is to minimize risk factors and prevent patients from developing obesity-associated diseases.

When is it time to turn to drugs or surgical procedures such as gastric bypass?

These kinds of interventions are effective in supporting and consolidating lifestyle changes. We frequently prescribe a drug called Saxenda®, mimicking an endogenous hormone that increases the feeling of satiety. This can help patients who report feeling hungry constantly or those who struggle with emotional eating or binge eating. Many patients are finally able to lose weight and to maintain the lower weight for the first time in a stress-free manner, as they find that their thoughts no longer always revolve around their next meal. Surgical procedures are primarily of interest for patients with severe obesity and for patients who have already developed numerous comorbidities, including high blood pressure, sleep apnea or type 2 diabetes. The key is making sure these patients are well prepared for the surgery and for their life afterwards and providing close supervision following the procedure within a multidisciplinary, highly specialized team. ■

Sweets for the brain

Katharina Timper recently demonstrated that both neurons and another category of brain cells, known as astrocytes, play a role in controlling metabolic rates. Both types of cells have a receptor for the endogenous hormone GLP1, which served as the model for the obesity medication Saxenda. In trials on mice, Timper provided proof that deactivating this GLP1 receptor in the astrocytes led to changes in cellular metabolism. This initiated positive effects throughout the organism: The mice were not only better equipped to metabolize sugar, but they also demonstrated improved learning ability compared to the control group. “We discovered a connection between glucose metabolism and cognitive performance,” reports Timper. She and her research team at the Department of Biomedicine of the University of Basel are now investigating this link in greater detail.



Clouds, rain, airborne particles.

Certain airborne particles affect clouds and precipitation, making them a key factor in weather and climate. Yet, it is unclear whether the particles that promote the formation of ice crystals in clouds and, consequently, precipitation in turn enter the air through rain. This question is being explored by environmental researchers at the University of Basel. Their findings will hopefully contribute to a better understanding of the Earth's water cycle. In addition, the results could help to refine the way in which clouds are represented in models and thereby improve the prediction of weather and climate.

5

Claudia Mignani is a doctoral researcher at the Department of Environmental Sciences

Annika Einbock is a student on the Bachelor's Program in Geosciences.

Photo:
Basile Bornand

1 Claudia Mignani and Annika Einbock carry out their measurements on the station in Binningen, which, amongst other things, is part of the National Air Pollution Monitoring Network and the MeteoSwiss automatic monitoring network.

2 They perform their measurements when a cold front is passing over the monitoring station in Binningen.

3 Using two mobile instruments, they collect air particle samples in order to determine the concentration of various types of suspended particles in the air before and during a rainfall event.

4 One of the mobile instruments draws in air and collects the particles, which are then immersed in water. Afterwards, the samples are decanted into sterile containers and analyzed in the lab for particles that induce ice formation in clouds.

5 The extended measurement sequences at the station, such as those to determine the total number of particles in the air, help the researchers to better classify their event-oriented measurements.



Should we always obey laws?

Anyone who breaks an existing law must face the consequences. What reasons are there for not obeying the law in spite of this?

In September 2020, activists held a demonstration on the Bundesplatz in Berne. Their aim was to urge parliament to act quickly and adopt far-reaching measures to tackle climate change. Given that rallies are prohibited on the Bundesplatz while parliament is in session, the demonstration was a form of deliberate, politically motivated civil disobedience. As I stopped to watch the events unfold, a man said to me that by behaving in this way, the activists were squandering significant public sympathy for their cause. When I replied that I agreed with them, the outraged gentleman remarked that “We have the best government in the world!” His argument seemed to be that there is no place for civil disobedience in a robust democracy founded on the rule of law, such as Switzerland. Is that true?

Let’s consider some of the good reasons for obeying the law. I fear that most people are motivated solely by upbringing, conformism and the threat of sanctions. There are, however, sound moral reasons for obeying the law. Laws should be obeyed because they respect all of us as free and equal individuals. They should also be obeyed for reasons of fairness, because they ensure that burdens and gains are evenly distributed within a society. Moreover, they enable a society to provide support for its weaker members. It’s only right that laws are obeyed as long as they elevate the natural duties of respect, fairness and help (Samaritanism) from the individual to the societal level.

Obeying laws is even more appropriate when society is involved in the making of those laws (through elections or referendums) – and, I might add, when this process is informed by the best of our knowledge.

A democracy is entitled to expect people to obey laws if its decision-making processes are based on information that doesn’t

result in correct decisions purely by chance and that satisfies the natural demands for respect, fairness and help.

Of course, it’s possible for a democracy to enact laws that seriously violate these very principles. Examples include the laws on racial segregation in the USA, or the withholding of the vote from Swiss women until 1971. Likewise, the overexploitation of natural resources shows a lack of respect, fairness or help with regard to future generations. Other examples include the exclusion of a significant proportion of the Swiss resident population from democratic participation, or the failure to represent the interests of animals in the legislative process.

If respect, fairness and help are good reasons to obey laws, then the serious violation of the same principles is a good reason not to obey them, particularly in a democracy. One option is to resort to civil disobedience, which not only serves as a means of political communication but also draws attention to serious grievances and calls for rapid, effective change in the name of fundamental values. Such disobedience seeks to convey that the matter is serious, that time is of the essence, and that people are prepared to set aside their own interests for the greater good. That was – and continues to be – the purpose

of climate disobedience such as that seen in the demonstration described above.

Forms of coronavirus disobedience can also be justified if they are based on questions of respect, fairness and help and informed by the best of our knowledge. In that respect, however, most of the coronavirus protests probably compare very poorly with the protests calling for urgent climate action. ■



Markus Wild

is a professor of philosophy. His research deals with the philosophy of mind – including the concepts of intentionality and awareness – as well as animal philosophy and animal ethics.

It would be rather impractical to live in a society in which each member obeyed only those laws he or she deemed just or convenient in any given situation. So, on the grounds of practicality alone, there are good reasons why those subject to legally established laws – or those implemented in accordance with due process – should endeavor to abide by them.

It would also run counter to the central tenets of our constitution – such as the separation of powers or equal rights under the law – if public authorities were to arbitrarily enforce only those legal standards that they held to be just or expedient on a case-by-case basis. This kind of legal system would be unable to ensure that the law is transparent and predictable.

Yet this is not intended to imply that those subject to a particular set of laws are obliged to accept them absolutely and unquestioningly. To the contrary, laws, regulations and even the constitution can and should change. A democracy relies on the assumption that each and every citizen accepts the rule of law as their own.

There are a range of mechanisms in place to realize this ideal of so-called self-legislation. In Switzerland, this includes instruments of democratic participation such as popular initiatives as well as representative democracy and federalist structures. The legal system also provides opportunities to mount legal challenges against certain laws and regulations or, in conjunction with concrete cases, to have these regulations reviewed by a court of law to determine whether they are constitutional.

In critical examinations of existing laws, a special status is granted to the fundamental rights enshrined in the constitution, such as freedom of speech and freedom of assembly. These provide each individual with the right to express their opinion, re-

gardless of whether that opinion is demonstrably erroneous or flatly devoid of merit in civil society. Furthermore, each individual is free to assemble with others for the purpose of publicly expressing their discontent in line with said personal opinions. Public protests against provisions considered to be unjust are

not simply tolerated under the legal system; indeed, they are an integral part of the system itself. Accordingly, it is a matter of great concern when restrictions on free speech or assembly are suggested or imposed because the opinions being expressed have been judged irrational or incorrect.

These fundamental constitutional rights place substantive restrictions on the powers of lawmakers and executive actors. They ensure that public authorities are unable to unduly impinge upon the rights of the individual. In cases in which the aforementioned democratic and legal structures prove insufficient, the fundamental constitutional rights rein in the power of the state.

The current constitutional framework is, to the greatest possible extent, therefore designed to prevent the passage of any unjust laws that might rightly warrant widespread resistance. And, finally, the regulations deemed to be unjust in the context of the Covid-19 pandemic dif-

fer fundamentally in the degree of injustice from scenarios in which a requirement of non-implementation of extremely unjust laws is generally assumed to apply. ■



Raphaëla Cueni

is a postdoctoral researcher and lecturer in public law. Her research focuses on questions of transparency in state policy. She also studies current issues in the law of freedom of expression.



Return to nature.


Texts: Cornelia Niggli
Photos: Christian Flierl



The Rhine island within the “Petite Camargue” conservation area lies about 10 kilometers down the Rhine from Basel in the Alsace region. This former arable land is the subject of a re-wilding project that aims to turn it into a self-sustaining area of meadows and woodland with the support of researchers from the University of Basel.

Alluvial landscapes such as those on the Rhine island are rare in Central Europe. In the absence of flooding, fire or large herbivores, the area would require regular mowing to prevent it from gradually turning into forest — with the accompanying disappearance of plant and animal communities that are adapted to open alluvial landscapes. With this in mind, Konik horses and Scottish Highland cattle were introduced to the island in 2018 as part of a research program under the supervision of Professor Valentin Amrhein.

Amrhein’s doctoral student Lilla Lovász is studying how the grazing of horses and Highland cattle affects the flora and fauna of the alluvial landscape and especially its bird population. Over a period of several years, she aims to observe the resulting changes in the 32-hectare study area.



The horses and Highland cattle wear tracking devices so that Lovász can track which areas the animals use at what time of the year and how intensely they use them. She also conducts regular surveys of the bird population.

The zoologist uses the data she has collected to study the relationship between the abundance of birds and the presence of horses and cattle at specific locations on the island. On an ongoing basis, she analyzes the results in consultation with Valentin Amrhein. (right)





Album

Between June and August, Lovász and her colleagues also document the flora on the island in order to examine the changes in vegetation due to the rewilding process and the influence of the large herbivores.




Album



Lovász placed marker stones in the ground so that the survey locations could be found again. It is vital that the researchers always analyze exactly the same location so that the data can be compared. GPS data are too imprecise because they vary slightly from one measurement to another. The orange color makes it easier to find the stones, which have often become overgrown over the course of the year. In total, there are 80 such stones spread across the island. (left)

One-square-meter quadrats are used to survey the vegetation at predefined locations. Among other things, the researcher documents the most abundant plant species, the average height and the cover of the plants. By doing so, she hopes to determine the impact of the herbivores on the vegetation.





In the four years that Lilla Lovász has been conducting research on the Rhine island, she has already observed a change in the biological community. Birds such as starlings or skylarks — whose populations are declining in Europe as a result of intensive farming practices — have returned to the island and have so far managed to hold on. She believes that this is connected with the introduction of the Konik horses and Highland cattle.



Lilla Lovász

from the Department of Environmental Sciences investigates at the Research Station Petite Camargue Alsacienne the impact of grazing on birds and plants in an alluvial landscape.



Valentin Amrhein

is head of the Research Station Petite Camargue Alsacienne and Adjunct Professor of Zoology at the University of Basel.

Training for the heart.

Sports and physical activity are known to help reduce blood pressure. The specific exercises that are most effective in achieving this goal have been explored by researchers in Basel as part of a European initiative.

Text:
Andreas Grote

Excess blood pressure persists as one of the major lifestyle diseases of the modern age, although its causes are well known: An unhealthy lifestyle resulting in excess weight, poor nutrition, lack of exercise, stress or smoking all contribute to rising blood pressure over the years. This often unnoticed phenomenon can be further exacerbated by a genetic predisposition. In the long term, it can be particularly damaging to the vessels that make up the cardiovascular system. Statistically, around one in four heart attacks can now be attributed to excessive blood pressure, while experts estimate that as much as 60 percent of the world's population could suffer from hypertension (the medical term for high blood pressure) within the next five years.

Hypertension can be alleviated with the help of drugs, but this often leads to unwanted side effects. Studies have long shown that regular physical activity favorably affects blood pressure. This research has focused on the diagnosis of hypertension in general terms, however, without taking into account patients' actual blood pressure level going into treatment.

More is better

Sports medicine physician Henner Hanssen and his colleagues at the Department of Sport, Exercise and Health are therefore looking for new ways to reduce blood pressure as effectively as possible with the help of physical exercise. To this end, they began by reviewing existing metastudies in collaboration with experts from the European Association of Preventive Cardiology to determine which kind of training has the greatest impact on different blood pressure levels.

In this way, training plans can be tailored to the particular blood pressure level of each patient. "This systematic survey of the literature is the first study of its kind anywhere in the world," says lead researcher Henner Hanssen.

The basic recommendation for all forms of training is to train at moderate intensity for at least 15 minutes a day, ideally 30 minutes five times a week. Moderate intensity means breaking a mild sweat while remaining able to maintain a conversation, or reaching around 70 percent of one's maximum heart rate. But, as Hanssen says, "it's not one-size-fits-all. From our results, we can conclude that exercise should be prescribed on the basis of the initial blood pressure level of each individual patient."

The studies showed that for high blood pressure (≥ 140 mmHg systolic and ≥ 90 mmHg diastolic), classical endurance training like power walking, brisk walking, cycling or swimming reduced blood pressure by 7.4 mmHg (systolic) or 4.5 mmHg (diastolic) on average. "That's just an average, however – some patients manage a reduction well in excess of 10 mmHg," Hanssen reports. Moreover, the studies revealed a link between dose and effect, he adds: The higher the volume of moderate intensity training performed, the greater the reduction.

For high-normal blood pressure (130–140 mmHg systolic, 85–90 mmHg diastolic) meanwhile, the greatest reduction is achieved with dynamic strength training. Dynamic refers to movements in which the muscles contract to overcome some form of resistance. One example is weightlifting, but the resistance can also be the person's own bodyweight, as

with climbing stairs or performing squats or push-ups. This kind of activity was found to reduce systolic blood pressure by 4 mmHg, and diastolic blood pressure by 3.4 mmHg.

Making training a part of everyday life

For people whose blood pressure is still in the normal range but are at increased risk of high blood pressure due to obesity or genetic predisposition, isometric strength training seems to be the best choice. This kind of training consists of holding exercises such as planks, side planks or – for those with reduced general mobility – a grip trainer. In these exercises, the muscle is placed under strain, but is only tensing rather than contracting. According to the studies, exercising in this way lowered systolic pressure by 7.2 mmHg and diastolic pressure by 2.6 mmHg.

“In principle, these exercises are beneficial to virtually all patients,” says Hanssen. Nevertheless, a lasting reduction in blood pressure can only be observed after around four to eight weeks at the earliest. Moreover, success is heavily dependent on how committed the patient remains. If they don’t stick to the program, their blood pressure goes back up, just as with patients that fail to take their blood pressure medications. “In other words, regular training has to be a lifestyle choice for the long haul,” Hanssen explains.

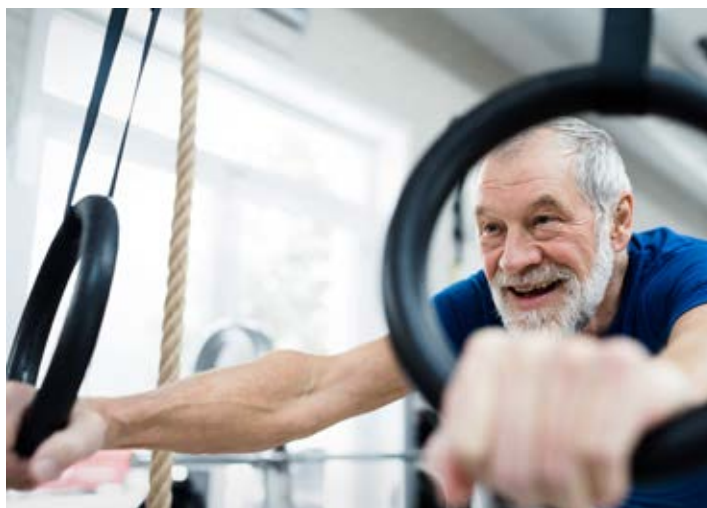
Henner Hanssen and his colleague Lukas Streese are already working on the next step, the HyperVASC study. This project aims to find out how high intensity interval training (HIIT) affects blood pressure and vessels compared to moderate intensity training. “This approach could have the potential to reduce blood pressure even more effectively.”

Medical supervision advised

In contrast to drug treatments, there are no side effects to be expected from physical training, Hanssen says. Nevertheless: “Being overly enthusiastic and ramping up the intensity too soon can take its toll on bones, joints and tendons,” he warns. To help patients get off to a good start and stay on course, the ideal approach would be for doctors to prescribe individual exercise plans. “But there aren’t enough exercise therapists in Switzerland for that.” Institutes offering this kind of support, such as the University of Basel’s Department of Sport, Exercise and Health, can currently be counted on the fingers of one hand, he adds. In the meantime, anyone planning to undertake exercise therapy autonomously should get a medical check-up and have their blood pressure measured first. It is also a good idea to see a specialist

doctor or exercise therapist every three months to discuss any difficulties encountered while training.

Precisely why certain kinds of training are more effective than others at reducing blood pressure remains unclear. Hypotheses have been put forward, however. “In general, the body reacts to high exercise load and exertion by increasing blood pressure,” Hanssen explains. As a result, training gives the body an incentive to keep blood pressure lower throughout the day when it is at rest. Hanssen therefore recommends taking the stairs rather than the elevator, or catching the bus instead of driving and getting off a stop earlier to walk the rest of the way to work. “Besides lowering blood pressure, this also boosts blood vessel health.” And lower blood pressure is not the only benefit to be gained from regular exercise, of course. “Training has also been proven to have a positive impact on overall fitness and fat and blood sugar levels, aside from the social aspects,” Hanssen notes. ■



Different forms of physical exercise are better able to reduce blood pressure depending on a person’s blood pressure level.

Robert, what does that say there?

When we read a book, we seldom ask ourselves how the text originated or how closely what we are reading corresponds to the original version. That, however, is precisely what the producers of text critical editions must consider. A research team in Basel is currently working on such an edition of the complete works of Robert Walser.

Text:
Noëmi Kern

Is that a comma or a period? Or just fly droppings? Deciding such things is an everyday occurrence in the field of textual criticism. It can mean spending hours poring over a single passage in a text written in barely legible handwriting, just trying to discover what is actually written there. This is painstaking work that requires remarkable staying power. “But it’s worth it. It’s fascinating and thrilling to immerse oneself so deeply in a text,” says Matthias Sprünglin.

As a Germanist, Sprünglin has gathered years of experience as a member of the team working on the Kritische Robert-Walser-Ausgabe (KWA) a critical edition of the complete works of Robert Walser. The edition is a work in progress – since 2007! The pro-

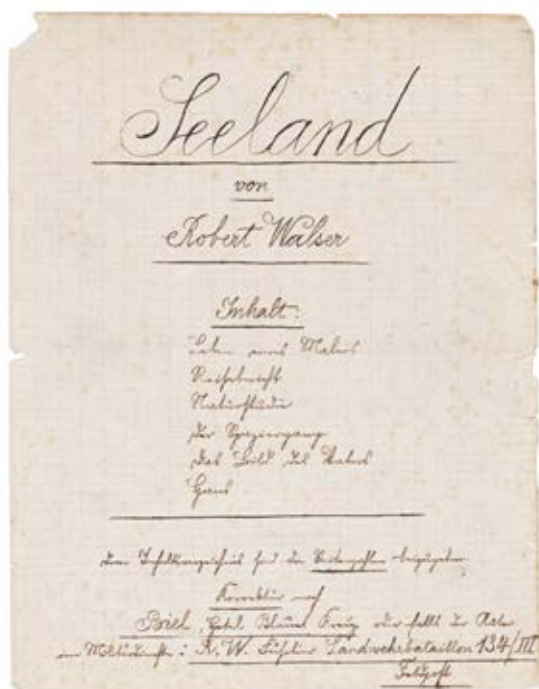
ject, funded by the Swiss National Science Foundation (SNSF), is dedicated to the works of the Swiss author Robert Walser (1878–1956) and is a collaboration between the universities of Basel and Zurich.

Walser is probably best known for his novels *Geschwister Tanner*, *Der Gehülfe* und *Jakob von Gunten*. These books, however, are just a very small part of his oeuvre. His works include prose, poetry and short dramatic works, so-called “Dramoletten”. “In his lifetime he was best known for his contributions to newspapers – from Berlin to Zurich and from Vienna to Prague. Short prose works were his particular forte,” Sprünglin tells us. His work could be found in feuillets throughout the German-speaking world.

The KWA brings together all existing writings by Walser, among those some works that have never before been published in a collection. New approaches have been used in collating those Walser texts that appeared in newspapers and magazines: the individual pieces are sorted according to newspaper or magazine and then sorted, there, according to publication date. “This makes it possible to understand, on the one hand, how and when Walser came to write for a particular publication and, on the other, how his relationship with that publication developed,” Matthias Sprünglin explains. The World Wars in particular, significantly affected the publishing network throughout Europe and, ultimately, destroyed it.

Philological groundwork

Half of the edition (which will ultimately comprise 50 volumes) will be published by the end of September 2021. The project should be completed by 2032. The most significant edition of Robert Walser’s work until now has been that of Jochen Greven. This edition modernized the spelling so it complied with the standard in 1970, but this edition does not indicate where the text has been emended or where the edi-



Title page of a Robert Walser manuscript in the *Seeland* collection.

tion has reverted to other textual witnesses such as manuscripts or other editions. Since Greven does not declare these emendations, his interventions are not transparent to the reader, and it remains unclear how the text finally offered actually took its shape. Nevertheless: “Greven did good and valuable work. Without his edition, ours would not exist.” Significant groundwork with regard to the microscripts was done by Werner Morlang and Bernd Echte. In their work *Aus dem Bleistiftgebiet* (“From the Pencil Zone”) they first deciphered a large proportion of these small jottings.

The aim of the KWA publishers is to reconstruct an authentic text and to give account of what it is based on and how it was produced – given the materials available. The editors are interested in biographical details only in so far as they are significant to the creation of the work and its written heritage.

In addition to safeguarding the written texts, the aim is to throw light upon Walser’s writing process. Matthias Sprünglin’s enthusiasm and fascination is clearly evident when he says: “The so-called microscripts are a veritable universe of drafting and designing.” Walser wrote them in pencil on various kinds of paper. “The writing is sometimes so abstract that you really cannot speak about the elements as letters as we know them. It is rather a matter of syllables, typographies and word pictures, which even a practised reader cannot easily decipher.” With the help of transcriptions, however, it is also possible for non-experts to comprehend what is on these various bits of paper.

Walser wrote these microscripts on finished texts, a two-stage method of text generation. The KWA offers an insight into Walser’s writing workshop. The different kinds of text media add another dimension to the microscripts. Walser wrote them onto, for example, a cut-up calendar and a German newspaper’s receipt-of-payment document (the newspaper was the *Berliner Tagblatt*). The connections between these different pieces of paper have been reconstructed for the first time in the KWA. “Interesting relationships between the texts become apparent,” says Sprünglin.

The advantages of digitization

Digitization offers great advantages in the presentation of findings in the field of text criticism. It is, for example, possible to enlarge digitized microscripts and to place them in relationship to the transcriptions. Moreover, digital presentation forms are continuously developing.” The second major advantage is the full-text search. This offers entirely new ways of approaching the complete works,” enthuses Matthias Sprünglin, who is not only a Germanist but also a computer scientist.

The rapid development of digital formats also has its drawbacks, however. The possible means of storing data are also constantly changing. “When we started work on the KWA, we burned our data DVDs. You just wouldn’t do that these days,” says the researcher. It is also difficult to choose the format for creating archives that will survive in the long term. “We don’t know what the future will bring. But we’re doing what we can,” Sprünglin assures us.

Printing makes a long life more easily achievable: The books published by the KWA will be printed on acid-free archival paper. It will still be possible to read them in 300 to 400 years. “We are aware that it will be some time before anyone else produces a complete works of Robert Walser with this degree of thoroughness and we know that we have to lay the foundations for many years to come,” says Sprünglin. That’s a huge responsibility.

A fundamental edition

Taking responsibility is always important in editing in any case. If we consider, for example, Robert Walser’s work *Die Gedichte*: In choosing the version of the text, editors have a choice between the first edition from 1909 or the slightly emended version from 1919. In choosing, they decide which version they believe to be more authentic, and that then has a long-lasting influence on the future reception of the poems, even though it is not actually possible to prove that the correct version was chosen. “Ultimately, the reader has to be able to rely on the publisher.” Matthias Sprünglin wants to pass on this awareness. In the current fall semester, he is giving a seminar on editing Robert Walser for the first time. “On the one hand, I don’t want us just to sit in our quiet little rooms poring over the texts. I want us to show our work to the outside world. I want us to speak about it with other people and I want us always to approach our own work critically.”

On the other hand, Sprünglin believes that anyone and everyone who wishes to engage in literary studies should also engage in textual criticism. A text, after all, does not simply appear. “It has a provenance, a history of transmission in which one cannot but be interested if one is interested in the text itself,” he believes. Textual criticism reflects this process and makes it more transparent.

Matthias Sprünglin wants to motivate us to look closely at texts, and to engage with them critically. He also has some hope that he might be able to communicate his enjoyment of and enthusiasm for textual criticism to encourage a new generation of editors. His hope, too, is that in the future people will also sit poring over a text for hours, determined to understand exactly how that text came to be. ■

Immigrant, female, poor.



The maid in the white apron has had her day in service. More and more people, however, are being employed to work in households – mostly women paid a small wage. A Basel historian is investigating how paid domestic work developed during the 20th century.

Text: Christoph Dieffenbacher

Cleaning, washing, cooking, making fires, lugging boxes, looking after children, caring for the sick: Hard, exhausting work, and long days with little time off was once the lot of domestic servants. Ready to serve from morning until night under strict observation and at the mercy of the whims of their employers, their masters. Support staff were employed not only in the homes of the middle classes but also in commercial settings or on farms.

From 1900 at the latest, paid domestic service became, for the most part, women's work. In Basel alone there were, at times, thousands of women employed to wash, iron, cook, clean, or employed as nannies, nurses or carers. After World War II, however, they were hardly to be seen openly: Thanks to new devices such as washing machines and vacuum cleaners, it seemed that housemaids were now superfluous. At the same time, more and more women were starting to work outside the home.

From housemaid to care giver

It was only from the 1980s on that society started to really see the presence of service personnel again, this time in the form of immigrants. Increasingly, media and social science studies also reported on what were now referred to as "care givers" from Eastern Europe: immigrants who took care of the old and the ill, and who often lived with those they were caring for. Yet, the idea that paid domestic work had somehow entirely ceased to exist in the meantime, from the end of the war until the 1980s, is mistaken, says Basel historian Jennifer Burri: "Jobs in domestic service continued to exist as before after 1945, but their nature changed slightly."

Job descriptions changed, and there was an element of professionalization. For many years an attempt was made to create enthusiasm for home economics among Swiss women, but a large proportion of domestic workers still came from abroad, either as foreign residents with annual permits or as cross-border commuters. A new departure in the 1960s and 1970s was the employment of young women as au pairs.

For her doctoral dissertation, Jennifer Burri is currently reviewing 160 dossiers in the state archives of Basel-Stadt, dossiers created between 1930 and 1980 by the immigration authorities of the time (the *Fremdenpolizei*). In those days, almost one third of domestic workers came from abroad, initially from neighboring South Baden and Alsace. After 1945, the number of women coming from France, Italy and Spain then increased, followed by influxes from former Yugoslavia and from Turkey. Their work permits were administered by the *Fremdenpolizei* in the various cantons and these authorities also recorded any problems regarding wages or working conditions.

Friday was washday

These files also offer valuable material to the historian, giving her direct insights into the everyday working life of service staff. She has identified a rich variety in the forms of domestic service – from permanent employment to casual cleaning women who helped only occasionally. Employers were not only from wealthy, middle-class families but also increasingly from families with small businesses. One interesting little note: "Almost without exception, Friday was the day when paid women came in to do the washing." Among the domestic helpers, there were also au pairs from home and abroad and trainees in their apprentice year of home economics courses. There was plenty to do for everyone, but there were also alternatives: service staff often moved from private households to work in hospitals, care facilities, hotels or canteen kitchens where wages were better and regular work was guaranteed. As before, their work remained mostly unnoticed and unremarked.

The *Fremdenpolizei* dossiers are stored by date only and not according to names or content, and this presents a considerable hurdle to Burri's work. As she explains, "I have to go through the dossiers one box at a time until I happen to come across information about domestic staff." Then she collates the personal data and work histories. This gives rise to research questions: Where did the domestic workers come from, where did they work, how

much did they earn and how long did they remain in a particular job.

18 months – then change job

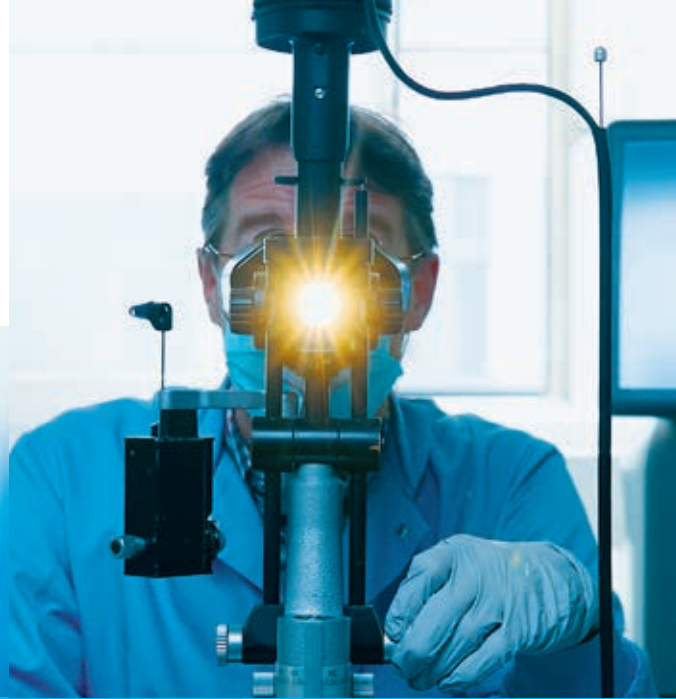
Ever since World War I, there has been a consistently high demand for domestic staff throughout Europe. From early on, there was talk of "foreign infiltration through domestic service". One of Burri's research findings has revealed a very high level of fluctuation in domestic service: on average, domestic servants in Basel remained in a particular job for only 18 months. "Over the years, domestic service stopped being seen as appropriate to the times," explains Burri.

Contemporary sources also attribute the frequent job changes to the, often unpleasant, close living quarters and to the lack of private space. Changing jobs was often the only way for employees to defend their rights or improve their situation.

Hidden employment biographies

Through her research, Burri wants to shed more light on the still widely hidden world of these female domestic workers, to rescue their biographies from obscurity. "It's true that many of us can still tell stories and share anecdotes from our own families," says Burri, "perhaps about our grandmothers or great aunts who came to Basel as cooks or nannies when they were young." Yet, there is a lack of research regarding this occupational group: until now, migration research has concentrated principally on male guest workers.

What is the situation today for domestic workers? Their employment situation can still be described as "precarious, peripatetic and predominantly female," says Burri, who has also conducted research into the history of prostitution in Basel while studying History and Gender Studies. Female care workers in domestic employment are still among the most poorly paid. Their legal protection has improved but it is still not as good as that of other employees. This is because a household is not legally recognized as a place of work in Switzerland. ■



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Modern History

Debt collection and 19th-century capitalism.

Drawing on anthropology and social theory, this fascinating book delves into the everyday routines of debt collection in nineteenth-century capitalism. The main focus is on Switzerland, a perfect example of a state based on the liberal rule of law. Debt collection and declarations of bankruptcy were then based on a wide range of differing received practices, until these were standardized in a Swiss federal law in 1889. The nature of this truly vast array of different practices was encapsulated in the idiomatic

Swiss legal term “Rechtstrieb” (“legal drive”). The author’s close analysis of these types of justice that could be described as not fully formalized throws new light on the makeshift economies and the conflicting political imaginaries in day-to-day life in the nineteenth century. The book offers an empirically well-founded and theoretically well-argued history of common practices in the everyday economy of the time and is a fine demonstration of the value of studying capitalism from the ground up. ■

African History

An interplay of race and class.

During the apartheid era in South Africa, white workers enjoyed a unique position in society. In exchange for their support of the white minority regime, they were protected from competition from black workers. This special status, based as it was on race, effectively concealed their social vulnerability rooted in class. This work looks closely at this entangled interplay of race and class, and studies how the dismantling of the racial state and the establishment of black majority rule was experienced by South Africa’s white workers. It shows how, from the

1970s on, reforms to apartheid effectively meant the withdrawal of the state’s support for the white working-class. This meant white workers were forced to look for other ways of protecting their interests in a rapidly changing world.

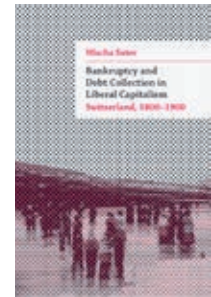
Privileged Precariat offers unique historical and ethnographic evidence and ties this into existing global debates, thus presenting a chronology and an interpretive rethinking of South Africa’s recent past. This insightful book gives fresh insights from the Global South into debates on race and class in the era of neoliberalism. ■

European Global Studies

Basel’s early trade in global goods.

In the middle of the 18th century, Achilles Leissler (1723–1784) a Basel silk ribbon manufacturer, had an impressive summer house built on Riehenstrasse. This house became known as the “Sandgrube” (the sandpit). This listed building is typical of the numerous handsome residences that lined the road from Kleinbasel to Riehen. With their remarkable gardens full of exotic plants, they symbolized the economic elites of a wealthy city. These buildings were also located in the immediate vicinity of the factories that

produced cotton and silk using special dyeing and printing processes, processes that created demand for those superior materials on the global market. This elegant and engaging publication reveals the secrets of the “Sandgrube” and follows the exploits of its inhabitants on the international stage, throwing welcome light on Basel’s early participation in a global market and elucidating the effects that the production of and trade in global goods had on the city’s community and on its image of itself. ■



Mischa Suter: *Bankruptcy and Debt Collection in Liberal Capitalism, Switzerland, 1800–1900*. University of Michigan Press, Michigan 2021
336 pages, USD 85



Danelle van Zyl-Hermann: *Privileged Precariat. White Workers and South Africa's Long Transition to Majority Rule*. Cambridge University Press, Cambridge 2021
90 GBP



Susanna Burghartz, Madeleine Herren: *Building Paradise. A Basel Manor House and its Residents in a Global Perspective*. Christoph Merian Verlag, Basel 2021
240 pages, 28 EUR

What does Islam stand for?

Many non-Muslims have been asking themselves this question in light of the series of alarming developments in the Islamic world. Here is my attempt at an answer.

Text:
Maurus Reinkowski

Non-Muslims always tend to be most aware of Islam when extremists are making headlines. One need only think of the short-lived expansion of the so-called “Islamic State” (IS) in Iraq and Syria during the mid-2010s. Or the swift collapse of the Afghan military, built up over two decades with funding running into the billions, in summer 2021 under assault from the Taliban, the “(religious) students”. Also, 9/11, the 20th anniversary of which was marked this September, is linked to Islam.

There are a few points to be noted here. Most of the victims of IS, which at the end of the day was primarily a nihilistic organisation, were Muslims in Iraq and Syria themselves. The Taliban’s swift victories were the result of a flawed policy of nation building pursued by the West in Afghanistan since 2001. Although the USA vowed revenge following the attacks of September 11th 2001, its politicians, including the then President, George W. Bush, also made clear that the Islamist-minded terrorists responsible for 9/11 were in no way to be equated with Islam and Muslims.

Yet, these points are themselves in need of qualification. There is good reason to doubt that the “Islamic State” has been finished off completely. It is entirely possible that the Taliban will again turn Afghanistan into a haven for jihadists from around the world. The fact that several of the 9/11 hijackers

were able to live together in Hamburg for years undisturbed was taken as an invitation to expand massively the security agencies tasked with monitoring militant Islamists across Europe – and, at the same time, to keep a close eye on a large number of Muslim activities and institutions. After all, didn’t the 9/11 hijackers appeal to their religion, and were they not convinced that they would be rewarded for their deed with admission to Paradise?

So what does Islam stand for? None of the many books about Islam and its political interpretations that have been written over recent decades provides a single, clear answer to this question. Neither does the Koran. The Koran, like the Old Testament, is a huge treasure chest in which it is easy to find passages that evoke both a peaceful *and* a warlike ethos.

Islam therefore stands for many things. Along with Judaism and Christianity, it stands for one of the three “Abrahamic” religions, all of which – from their own particular perspectives – look to Abraham as their progenitor. Islam stands for a religious culture with an extremely rich and diverse set of traditions that has grown up over the past 1,500 years and has shaped, and continues to shape, large parts of Asia, Africa and Europe. It also stands for the only political resource that the Islamic world has developed entirely on its own during the age of modern ideologies: *Islamism*, the belief that political activity

should be governed by the laws of the religion of Islam. Over the past fifty years, this belief has become dominant within the Islamic public. In light of the failure of so many imported western ideologies (liberalism, Marxism, capitalism), many Muslims have come to view Islamism as an incomparably powerful source of identity – and indeed it is.

For western society, on the other hand, Islam also stands for demographic fears. One of the reasons why Samuel Huntington’s thesis of a “clash of civilizations” had such a powerful impact was that he linked it to demographic trends. Whereas the share of the world’s population living in the West will fall from almost 45 percent in 1900 to one-tenth in 2025, the population of the Islamic world will rise from less than 5 percent to one-fifth of the global total over the same period. It is easy to relate these figures to trends within our own country. In 1970, Muslims accounted for only 0.25 percent of the population of Switzerland, but by about the year 2000 this figure had risen to 4.26 percent – a more than fifteen-fold increase.

It is therefore necessary to take issue to some extent with both the scaremongers and the Pollyannas. The vast majority of the problems that European societies have with Islam are problems experienced by all societies receiving an influx of migrants. At the same time, however, it is undeniable that the Islamic world is going through a phase of particularly violent self-discovery, the end of which is not yet in sight.

This anxiety has yet another aspect of which we are generally unaware. When we ask, “What does Islam stand for?” we should really add “for us”, as in western societies our response to this question reveals a curious combination of superiority and inferiority complexes. I often hear the argument that Muslims have yet to experience their own age of “enlightenment” – as if there were time in today’s world to replay the film of the 17th and 18th centuries at our leisure. This assertion of intellectual superiority masks a feeling of insecurity. For if we as non-Muslims show an inability to understand Islam, ultimately we are also expressing a sense of alienation from ourselves. We are familiar with the sense of detachment from religion that has become prevalent in Europe, but when compared with the vibrant piety (at least, that is how it is perceived by most people) of Muslims, the garment of everyday secular-



Maurus Reinkowski

is Professor of Islamic Studies and Middle Eastern Studies at the University of Basel. From 2012 until 2015, he was head of the Department of Social Sciences.

ism that we normally take for granted and are happy to wear suddenly seems rather drab.

The question of what Islam stands for will continue to be a subject of debate. However, before we embark on a futile quest to identify the “true” essence of “Islam”, it may not be a bad idea for us to spend some time thinking about ourselves and our own relationship with religion. What I am advocating here is not a new religiosity that could serve as a counterweight to Islam, but rather that we take a short pause, perhaps over the quiet period between Christmas and the new year, to reflect on ourselves, God, the world and, yes, Islam. ■

“In western societies, the question of what Islam stands for produces a curious combination of superiority and inferiority complexes.”

Maurus Reinkowski

Straightforward tenacity.

Text: Irène Dietschi Photo: Andreas Zimmermann

Toward the end of our meeting, Scott McNeil pulls his phone out of his pocket and shows me a photo. “This was me three years ago,” he says. “I was a bit of an adrenaline junkie.” The image on the screen shows a motorcyclist kitted out from head to toe, his powerful motorcycle leaning so deep into the curve that his heel is within a hair’s breadth of grazing the asphalt. McNeil laughs. “I’ve given all of that up now,” he says. After all, some of his friends have seriously injured themselves in motorcycle races, and he’ll be 60 in a couple of years. “I have a grandchild and responsibilities. I need to live a quieter life.”

Sitting in his office, McNeil is the picture of tranquility. In measured Midwestern tones, the tall and athletic 57-year-old explains why he wanted the job in Basel so badly: because the professorship would give him considerable freedom in his research; because it would allow him to compile basic data and hence to create something new in a “pioneering area of medicine”; and because he and his wife were incredibly excited at the prospect of living in Switzerland.

A year ago, the University of Basel appointed McNeil to the first of two endowed professorships in nanopharmacy that are funded by the Vifor Pharma Group. Is that setup a problem? McNeil shakes his head. “I’m glad you asked that,” he says. Apparently, the university established a “firewall” to ensure that Vifor can’t interfere with his research.

McNeil has been working in the field of nanomedicine for almost 20 years and led a team of over 30 researchers in his most recent position in the USA. “A lot of nanomedicine is about drug delivery,” he explains. “In other words, tiny biological

particles known as nanoparticles are used to smuggle specific active substances into the body in a targeted manner.” Nanomedicine can do a lot more, however, than “just” transport things. By packing a molecule of an active substance into a nanoparticle, it’s possible to improve the pharmacokinetics. In other words, “a drug delivers its effects for longer and in a more targeted manner,” says McNeil. “At the same time, it’s possible to reduce unwanted side effects.”

McNeil explains this by referring to a group of diseases that he is particularly interested in, namely the lysosomal storage diseases (LSDs). These include some 45 inherited metabolic disorders in which a specific enzyme is missing, so that the cells fail to break down metabolic substances such as macromolecules, lipids or nucleic acids that are no longer needed. As a result, these substances accumulate and cause damage to organs, tissues and even the brain over time. The standard treatment is to supply affected individuals with the missing enzyme by intravenous infusion, which may or may not be successful. “Our body is very good at recognizing foreign substances,” says McNeil, “and in many cases it identifies the supplied enzyme as ‘foreign.’ In other words, antibodies develop.” If that happens, the immune cells “remember” the enzyme and neutralize it. “Fifty to 90 percent of patients develop antibodies against this drug, which is actually meant to save their lives.” The treatment is therefore ineffective in most patients, and those people will ultimately die.

McNeil’s approach is now to equip the enzyme with a type of invisibility cloak made of a lipid called polyethylene glycol. “Although the immune cells circulating in

the blood vessels are very good at identifying proteins and enzymes, they’re nowhere near as good at identifying lipids. You can imagine these as being like wet noodles thrashing around – the immune system can’t get a hold of them,” says the researcher. By tweaking the properties of the nanolipid shell, the researchers can target the particles to different tissues of the body, causing them to accumulate in that environment and fuse with the membranes of cells they encounter there. In the process, they release the enzymes into the cell interior – that is, into the location where they are intended to act.

McNeil has big plans for his work in Basel – both for LSDs and for the cancer treatments that he’s spent the last 15 years researching. After moving to Switzerland, however, the American researcher had to start “from scratch.” The laboratory at the Pharmazentrum has only officially existed since the start of August 2021, and his research group currently consists of just two people: a postdoc and himself. “It was a bit of an adventure for us in the early days,” says McNeil. He smiles as he recalls how he and his wife arrived in Switzerland in July 2020 with nowhere to stay, with their furniture stranded in Bremerhaven, with no knowledge of German, and in the middle of a pandemic. After three months, they found a house to rent in Aarau. They’re very happy there, he says, and the commuting time of just under 40 minutes to Basel is no problem at all.

Having grown up in a working-class family in Oregon, USA, McNeil is no stranger to the idea of working your way up from scratch. “I got into a lot of fights as a kid,” he says, adding that he made a lot of mistakes in those days – and learned from them. At the age of 20, he enlisted in



In summer 2020, Scott McNeil assumed the first of two endowed professorships in nanopharmacy.

Moving to Switzerland in the middle of the pandemic was an adventure, but the American scientist has lots of experience with new beginnings.

Scott McNeil

has been Professor of Nanopharmaceutical and Regulatory Sciences at the University of Basel since 1 June, 2020. Prior to that, he led the Nanotechnology Characterization Laboratory in Frederick, Maryland (USA), a joint institution of the National Cancer Institute and the US Food and Drug Administration (FDA). McNeil is married and is not only a father of six children between the ages of 20 and 28 but also a grandfather of one.

the armed forces as a private, the lowest rank in the US Army. That's also how he obtained a scholarship to go to college. After studying chemistry in Oregon and earning a doctorate in cellular biology and anatomy, McNeil went on to work as a postdoc in Hawaii for three years. Alongside his studies, he pursued a career in the armed forces. Private McNeil soon rose to the rank of officer. He clocked up a total of 20 years' service in the US Army, including a deployment to the Gulf War in 1991. As an officer, he not only fought his way through rough, unfamiliar terrain and jumped out of countless planes with a parachute on his back for training purposes – “and for fun!” – but also gained experience of close combat. “The military, being in a leadership role – it's character-building,” he says. “My soldiers knew they could rely on me 100 percent.”

Although he left military life behind almost 20 years ago, he has retained the straightforwardness and tenacity he learned during his time in the army. Indeed, he's brought these qualities with him to the world of academia and to his new role in Basel. “My main objective is to make my expertise in nanomedicine available to the next generation,” he says. “I want to ensure that basic research gains momentum and enjoys greater application in clinical practice.” For Scott McNeil, nanomedicine is the next big thing – and he believes that the time has come for it to be used in patients. ■

Exhibition

On the trail of Fritz Platten.

Botany

What grows where?

The Basel region has plenty to offer in terms of botany. With the “Flora beider Basel” project, the University of Basel aims to obtain an up-to-date overview of the local plant world in collaboration with nature conservation organizations. The project relies on the commitment of volunteers: “Science and conservation often have insufficient resources to find and identify the wide variety of species,” explains Ramon Müller, project coordinator of Flora beider Basel and research associate at the University of Basel.

Basel has a long tradition of exploring the plant world, with the Basel botanist Caspar Bauhin having compiled one of the first local floras back in 1622. The distribution of Basel’s flora was still well documented until a few decades ago, but the last comprehensive mapping was carried out in the 1990s. Since then, plant species have disappeared and new ones have moved into the area. “With this project, we want to find out which plants are currently present at which locations and in what numbers,” says Müller. Knowing which species occur where is vital in order to ensure targeted protection. ■



Although some basic knowledge is needed in order to take part in this citizen science project, it’s not necessary to be a botanist.

bit.ly/uni-nova-flora



Timeline depicting the life of Fritz Platten.

A legendary Swiss communist to some, a blind follower of Lenin and Stalin to others. Fritz Platten (1883–1942) is one of the most controversial figures in 20th-century Swiss history. He is remembered as the organizer of the “sealed” train on which Lenin returned to revolutionary Russia from exile in Zurich in spring 1917. His son, Fritz Nicolaus Platten, collected material for his father’s biography and bequeathed it to University Library Basel in his will.

As part of two seminars, history students have now studied various aspects of Fritz Platten’s life and designed an exhibition that is currently on display at University Library Basel. In addition to drafting texts, which they read into the listening stations themselves, the students made a film that can also be seen as part of the exhibition. They received professional help when it came to setting up the exhibits. The project is supported by the Agora funding line of the Swiss National Science Foundation.

The exhibition will be on display in the exhibition space of University Library Basel until 14 January 2022. Entrance is free. ■

Infrastructure

Moving to modern premises

In recent years, the University of Basel has undertaken construction work at various different locations. Now, the new buildings provide optimum conditions for teaching and research.

September saw the official opening of the new Biozentrum building – eight years after construction began. The opening comes just in time for the start of the fall semester and coincides with the 50th anniversary of the Biozentrum. With its individually designed laboratories, the building paves the way for research into fundamental questions of biology.

This was followed on 1 November by the inauguration of the new building for the Department of Sport, Exercise and Health next to the St. Jakobshalle arena. The building brings all sections of the department together under one roof. Although staff can already begin using the new premises, they won't be used for teaching purposes until spring semester 2022.

Lastly, the Swiss Tropical and Public Health Institute is moving into its new premises at the BaseLink site in Allschwil. The move to the new “Belo Horizonte” building, which houses modern workspaces and laboratories, is expected to be completed by March 2022. The Swiss TPH Travel Clinic will continue to operate from the “Zur Föhre” villa in Socinstrasse. ■



The Department of Sport, Exercise and Health moved to their new premises next to the St. Jakobshalle arena in fall this year.

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Alumni at work: Rahel Schneider

An eye for risks and potential.

Interview: Bettina Volz

Is a newly marketed drug really safe? Epidemiologist Rahel Schneider identifies and quantifies the risks of drugs at Novartis in Basel. In addition, as a former scholarship holder, she is involved with the Swiss Study Foundation in screening young applicants.

Ms. Schneider, what does your day-to-day work look like?

At the moment, I am supporting two drugs in development. One of my main tasks is to ensure that potential risks that cannot be detected during clinical development are adequately monitored after approval by the health authorities. These can be, for example, very rare long-term adverse effects that may occur years after

the drug has been taken. To ensure drug safety, I work with people from all over the world and all disciplines. This international environment combined with the vast existing know-how fascinates and inspires me again and again.

What can you use from your pharmacy studies and your PhD in epidemiology at the University of Basel?

I can bring a lot of it to my work, such as working with large databases, planning and conducting pharmaco-epidemiological studies, writing and publishing scientific texts, and communicating research results to experts and lay people. In addition, during my time as a doctoral student, I learned that social skills are just as

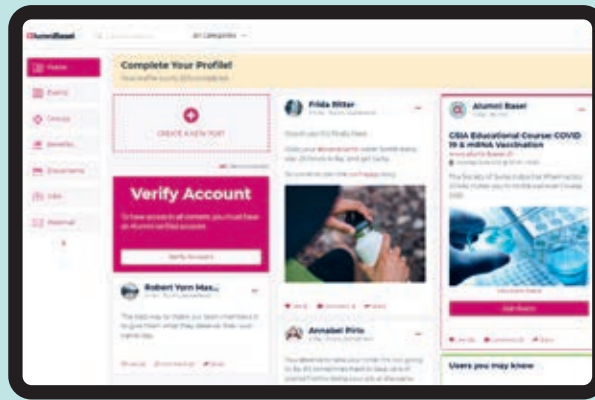
important as technical knowledge. All of this has made it easier for me to enter the industry. But even after graduation, I see and learn something new every day, which is what makes my job so exciting.

What role did the Swiss Study Foundation play in your career?

The highlight of my time at the Swiss Study Foundation – apart from the many great people I met – was a study trip to New York, where we were able to participate in the National Model United Nations, the largest simulation conference of the United Nations. Today, I am still curious and open to ideas, new projects and meeting other people. Through the Alumni Association of the Swiss Study Foundation, this network continues. Since the Foundation has contributed a great deal to my personal development, I now work voluntarily as an assessor. In this role, I assess applicants for their suitability for admission to the Study Foundation. I find it immensely enriching to exchange views and ideas with such committed young people. ■



As the Swiss Study Foundation celebrates its 30th anniversary in 2021, AlumniBasel is taking the opportunity to introduce a Basel alumna and former member of the Swiss Study Foundation. The Study Foundation offers interdisciplinary educational opportunities, financial support and a wide range of networking opportunities to give young people the best chance to develop new ideas and find their place in society.



On a personal note

New alumni portal to go online at the end of 2021.

Text: Bettina Volz,
Head of Alumni
relations Uni Basel

Today, the alumni database is used to manage active members, and currently holds the details of over 6,000 members in all. A substantial expansion of alumni activities is planned as part of the Alumni Strategy 2021–2025, to be aided by an overhaul of the database in the form of an alumni portal.

Since August 2021, the new alumni portal has been available for testing by the AlumniBasel admin team and representatives of individual faculty and subject-specific alumni groups. A primary concern in the design of the new portal was making the system more user-friendly. New features include a tiered roles and permissions system enabling faculty and subject-specific alumni groups (AlumniBasel’s sub-organizations) to send emails and manage events without having to go through the main admin team of the umbrella organization. For individual members, the alumni portal will offer new network functions, besides being significantly more intuitive to use. Meanwhile, the admin team’s work will be streamlined by new functionalities in areas such as membership dues and fundraising campaigns or statistical analyses.

The alumni database and alumni portal are financed by the membership dues paid to AlumniBasel and its associated faculty and subject-specific alumni groups. The university will also contribute in the form of a deficit guarantee of 100,000 Swiss francs over the next five years.

The AlumniBasel board is in the process of building a network of sponsors to secure the additional funds required to support the project over the next five years. The flyer for sponsors is available for download on the AlumniBasel website. For more information, please contact the AlumniBasel admin team by email at alumni@unibas.ch. ■

Annual Giving

Donations doubled.

The 2020 Annual Giving campaign raised around 61,000 Swiss francs – twice the figure from the previous year. Over the last fifteen months, the Scholarship Committee has overhauled the awards process to make it less bureaucratic, allowing support to be granted to fifty additional students in need. In August 2021, a recognition scholarship from the fund was once again awarded to two students on behalf of all awardees exhibiting remarkable performance under especially challenging conditions. ■



Members

Results of the 2020 survey.

A total of 320 of the 5,000 alumni contacted took part in the member survey. The responses indicate that the new faculty-specific alumni groups are the most effective channel for recruitment of new members, suggesting that alumni regard their subject of study as their strongest link to the university. Accordingly, the alumni sets for graduation ceremonies distributed to all departments will remain in use as an effective tool to promote AlumniBasel. Another finding from the survey was that the participants see the events and in particular the communication of insights into life and research at the university as the association's most important benefit, whereas discounts for members are felt to be relatively insignificant. ■

Alumni startup FINTECH

Digital pension provisions.



Alumnus and entrepreneur Daniel Peter.

Alumnus Daniel Peter studied economics at the University of Basel. In 2017, his start-up VIAC launched the first ever digital solution for pillar 3a pension schemes. “The idea arose from my own need for a simple, straightforward and, above all, efficient tool for pension provisions,” Peter reports. He believes that private pensions will be indispensable in future, and should be easily accessible to the general public. Barely four years later, VIAC is already being used to manage around 1.4 billion Swiss francs’ worth of pension assets on behalf of 50,000 customers. VIAC is able to keep its fees low thanks to automation and by operating without active fund managers. ■

viac.ch

Networks support new start.

Fabienne Gribi studied law at the University of Basel and graduated with a master's degree in 2010. After internships at Roche and at the Swiss law firm Vischer, she passed the bar exam in 2012. Fabienne then joined the renowned law firm Bär und Karrer in Zurich. In 2015, she moved to New York where she currently works as management consultant with a focus on sustainability and innovation.

Shortly after my graduation and passing the bar exam, I joined the law firm Bär und Karrer in Zurich. Although I really enjoyed working there, I moved to the United States in 2015 for personal reasons (my husband is originally from New York). This was a new start with its own challenges: I wasn't able to start work in the US straightaway and first had to wait for my Green Card, and thus my work permit, for over a year. When I finally received my Green Card, I initially took a job at the Swiss General Consulate in New York. During this time, I started to build my professional network here in New York, as applying for jobs in the US works completely differently than in Switzerland. Whereas in Switzerland, a good application usually leads to an interview, recommendations from a personal network are practically a must-have in the US. People often leverage their alumni network from their university, their alma mater. As a Swiss person with a mentality focused on modesty, I found it hard to sing my own praises at first. But you don't get far in New York without excessive self-promotion! When job hunting, you are looking to be introduced to and recommended by decision-makers or members of the management of the target company by demonstrating your professional experience and skills. A recommendation by a member of senior management will increase your chances significantly. After a few attempts, this worked out quite well and quickly, fortunately, and I joined PA Consulting. PA Consulting

is a global consultancy headquartered in London that focuses on strategy, technology and innovation.

The company supports clients in a wide range of areas, including mergers and acquisitions, analytics, IT development and also sustainability. This is the field I focus on as a consultant. Companies in the US still have a long way to go. In Europe, companies are much further ahead in this respect, while a mindset change in the US still needs to happen. However, this provides us with plenty of relevant work. I enjoy my work tremendously, as it allows me to combine my interest in corporate strategy and operations with my personal passion for sustainability. Being able to contribute my own knowledge and expertise in order to find solutions is hugely satisfying and inspiring. ■





Anna Karško is a literary scholar and works as a research assistant in the German Department at the University of Basel. Her doctoral research focuses on intercultural and transcultural encounters between Germany and Africa in contemporary literature. When she is not busy writing, she likes to travel, especially to African countries.

Photo: Andreas Zimmermann

Anna Karško

Dystopia as a mirror to society.

“For me, the true art of the thought experiment lies in imagining a future that we would not wish for ourselves.”

I love dystopias. There is nothing better than snuggling up on the sofa and reading texts about an alternative present or future. The eerier the story, the more deeply I immerse myself in it, spurred on by the question, “What if ...?” For me, the true art of the thought experiment lies in imagining a future that we would *not* wish for ourselves.

This is the kind of frighteningly plausible scenario created by Zoë Beck in her futuristic thriller *Paradise City* (2020). The book is set 100 years into the future, in a Germany whose population has been slashed by climate disasters and pandemics. Everyone lives in the megacity of Frankfurt, where there are no longer any private cars and everyone is in perfect health. The city is also home to Liina – and Liina is curious. Curious about the world that lies behind the controlling algorithm, which, despite state control, can be glimpsed through cracks here and there – for instance, in the form of the so-called ‘parallels’. These people with impairments or chronic diseases have been pushed by the Government to the edge of town, where they live without any infrastructure. Liina is also curious about the strange deaths that seem to be happening all around her. In the end, she gets caught up in a struggle with

the technological system. Zoë Beck demonstrates the ability to take something we can already see signs of in the present and follow it through to its logical conclusion. For me, that is what defines a good futuristic thriller.

In his novel *Ich werde hier sein im Sonnenschein und im Schatten* (I will be here in sunshine and in shadow) (2008), Christian Kracht shows the same ability, combined with wit and irony. He imagines an alternative historiography in which Lenin, instead of traveling to Russia in 1917, brings about a revolution in Switzerland, turning it into a Soviet republic. The country has been at war for 100 years and has colonized almost the entire African continent, while the military has largely withdrawn to the National Redoubt. A state forged in war and for war. This novel, too, contains the proverbial grain of truth, raising questions such as, ‘Would Switzerland have taken part in the colonization of Africa, given the chance?’ and, ‘How would the history of the world have been different if Lenin had not boarded the sealed train carriage?’ Beck’s and Kracht’s thought experiments show us an alternative past and future. In doing so, they hold up a critical mirror to our own society and our own moral standards. ■

Gleichheit

Verschwörung

Astrid Lindgren

Tanztheater

Conversation

Rhetorica

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Camille Pissarro, Femme au fichu vert, 1898 Musée d'Orsay, Paris © Foto: RMN-Grand Palais, Franck Raub

Camille Pissarro

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— 23.1.2022

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