University of Basel

UNI NOVA

University of Basel Research Magazine — N°135 / May 2020

How we make decisions.


Work.
Learn.
Relax.
In der neuen UB Rosental
Mattenstrasse 42 4058 Basel

Team

Contributors to this issue

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2 

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1 **Jörg Rieskamp** is a professor at the Faculty of Psychology of the University of Basel, where he leads the Center for Economic Psychology. He has been involved in teaching and research at the Faculty since 2008. For many years, the 49-year-old has focused his research on the ways in which humans make decisions – a topic that also provides the focus of this issue. Pages 16–17

2 **Christina Baeriswyl** studies visual communication at Bern University of the Arts. A self-described "Illustrateuse", she runs her own studio for illustration, graphic storytelling and data visualization in Zürich. In the images she has created for UNI NOVA, she shows the assumptions and effects that are influenced by our decisions. Pages 14–35

3 **Fiona Vicent** takes an in-depth view of the family trees of bourgeois families in Basel during the 18th and 19th centuries. In her doctoral research, Vicent shows how these diagrams reveal not just familial relations but also the networks of those family clans that wield rich economic and symbolic influence. Pages 40–49

Decisions, decisions.

The novel coronavirus pandemic has brought society and the economy to a virtual standstill. Suddenly, many of us have been confronted with unfamiliar circumstances and faced with new questions. Governments have had to take drastic measures as they seek to determine how the public can be protected from the virus. Each and every one of us has had to weigh up the risks of even a short walk outdoors. And physicians have faced hard decisions at the bedside – given the scarcity of resources in hospitals, many have had to make a judgement as to whether intensive care is still worthwhile.

A decision is defined as a choice between two or more alternatives and involves a number of complex cognitive processes. It's worth taking the time to realize what these processes are and to reflect on them: How are decisions made? Who makes which decisions, and why? Many decisions depend on the degree of risk and uncertainty under which they are made. Experts also distinguish, for example, between the known and unknown consequences of a specific choice – and consider the probabilities of these consequences occurring.

This issue presents selected projects in the focus area of decision research with participation by Basel academics from the worlds of psychology, neuroscience and economics. The majority of the content for this current issue was produced before the coronavirus crisis hit. Researchers from the Faculty of Psychology who have contributed to this issue point out that they also speak to public risk perception related to Covid-19 and respective behavioral change. A recent initiative in which they have started to provide evidence-based policy recommendations can be found online.

We wish you every success in your future decisions – and stay healthy!

Christoph Dieffenbacher,
UNI NOVA editor

Overcoming antibiotic resistance:
Christoph Dehio in conversation, page 8

Our everyday lives are shaped by all manner of decisions.

Dossier

How we make decisions.

Cover photo
Our daily lives are full of decisions. The effects that play a role here are visualized by Christina Baeriswyl in her series of illustrations.

Research into family trees: How bourgeois families in Basel collected and depicted genealogical data, page 40

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Entomology

Darwin's wasps.

Wasps from the Ichneumonidae family lay their eggs on or in the larvae of other insects. Once hatched, the wasp larvae feast on the host's organs – a parasitic lifestyle that Charles Darwin found deeply disturbing: "I cannot persuade myself that a beneficent and omnipotent God would have designedly created the Ichneumonidae with the express intention of their feeding within the living bodies of Caterpillars."

However famous the remark, we still know very little about the ecology and development of these insects. The 25,000 species described today probably make up just a quarter of the total number. When experts at a conference in Basel brainstormed a vernacular name for the Ichneumonidae, they agreed on "Darwin wasps." The researchers hope that this name will attract broader interest in the family. ■

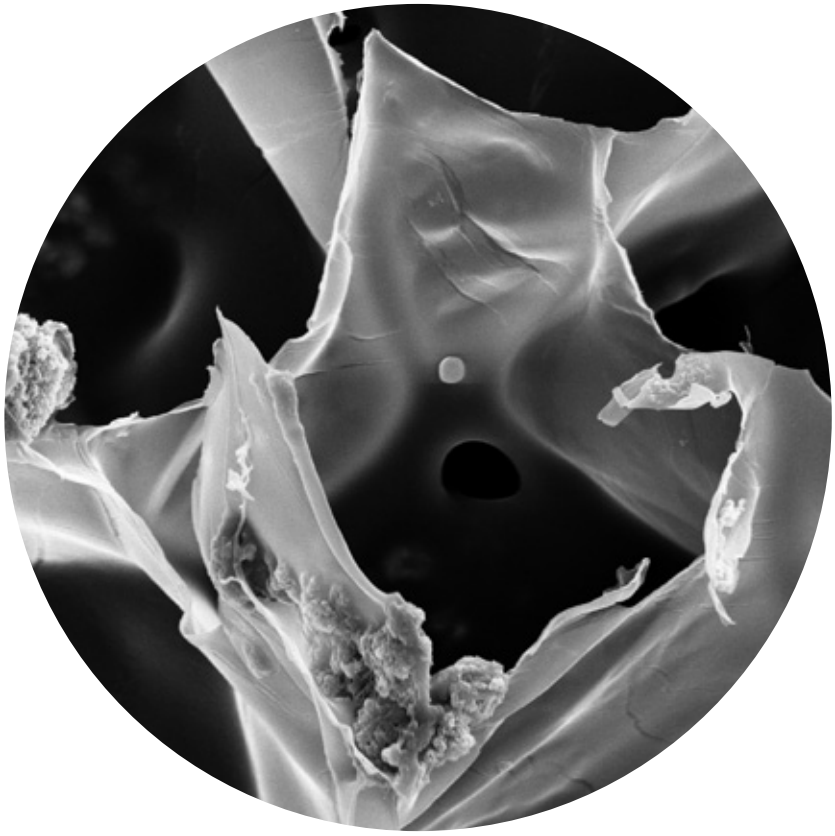
Urban research

Urban limbo.

Every day, a wave of commuters from the periphery flows into Cape Town's suburbs and city center in the morning and back again in the evening. In particular, they include female domestic workers who spend a large part of their salary on transport and strive to make their way in the world on a daily basis.

Diana Vazquez accompanied the women on their often long journeys from home to work and followed their movements and experiences in order to find out what happens along the way and how this presents them with new challenges and aspirations. Her research project is part of the Master's Program in Critical Urbanisms, where Basel students spend a semester at the University of Cape Town. ■

instagram.com/critical_urbanisms



Biomaterials

Tailored surface.

This porous structure is part of a sophisticated triple-layered membrane. As an implant, it is intended to support the regeneration of tissue at the interface of bone and soft tissue in the jaw and mouth area.

Although the two outer layers of the membrane are both porous, they have different properties. Where the layer borders on bone, its structure supports colonization with cells that contribute to the formation of bone tissue. On the side that comes into contact with the mucous membrane, on the other hand, connective tissue cells can settle particularly well. The middle layer separates the two cell types and keeps them in balance. Yet that's not all: The two outer layers contain precisely dosed active substances that specifically support the growth of the different cell types.

The membrane is being developed by researchers from FHNW, the University of Basel and University Hospital Basel as well as CIS Pharma in Bubendorf. The Canton of Aargau is financing the project as part of the Nano Argovia program. ■

“Antibiotic resistance does not stop at borders in our globalized world.”

Christoph Dehio

“Without effective antibiotics, we’ll lose the advances made by modern medicine.”

Christoph Dehio from the University of Basel’s Biozentrum heads the National Center of Competence in Research (NCCR) AntiResist. The microbiologist argues for a paradigm shift in antibiotic research, the aim being to make the development of new drugs that overcome antibiotic resistance easier through a better understanding of the physiology of bacteria in humans.

Interview: Urs Hafner Photo: Christian Flierl

UNI NOVA: Professor Dehio, when my head cold had still not cleared after three weeks, my family physician told me I would have to take an antibiotic. I thought now I’m going to put my body through shock therapy, but I’ll be fit again afterward. Is that right?

CHRISTOPH DEHIO: Colds are primarily caused by viruses. Antibiotics don’t help in these cases. You must have had a secondary infection with bacteria and the doctor prescribed the antibiotic to fight that. You probably got better quickly, but we don’t know if it was really necessary to use an antibiotic in this circumstance.

UNI NOVA: When is it really necessary?

DEHIO: For example, if you’re taken to hospital with sepsis. Your life is in danger and every minute counts. An antibiotic can save your life, provided that it’s actually effective. The steady increase in the appearance of resistant germs is making antibiotics more and more ineffective.

UNI NOVA: We live in one of the cleanest countries in the world with excellent high-tech medicine. Reading the description of the NCCR AntiResist that you head, creates the impression that we’re acutely threatened by all kinds of resistant germs that are spreading. Are you being a bit over dramatic?

DEHIO: Unfortunately not. However, compared with many other countries, Switzerland is still a small paradise. This doesn’t mean we don’t have any problems, but we have them still under control. However, antibiotic resistance does not stop at borders in our globalized world. Antibiotic-resistant germs are coming to us from Southern Europe and the Far East. Sooner or later, medical interventions that are largely safe today will become a risk. That includes routine operations of every kind, chemotherapies against cancer, organ transplants, even the treatment of bacterial pneumonia following an influenza infection. Older people will be especially impacted. Without effective antibiotics, the tiniest infected wound may become a deadly risk again.

UNI NOVA: How did we let it get to the stage where our healthcare system has such a gap in provision?

DEHIO: In 1928, Alexander Fleming discovered the antibiotic penicillin. After the end of the Second World War, this medication was considered a panacea for decades. Further antibiotics were discovered in quick succession, for example, streptomycin, with which tuberculosis could be combated effectively for the first time. That was the golden era of antibiotics research. Medicine cabinets were stuffed

full of effective antibiotics. We had the feeling we had the problem of bacterial infection under control, but then resistance kicked in.

UNI NOVA: A drug suddenly stopped working?

DEHIO: Exactly. So we took another one out of the cabinet, but in time multidrug resistance arose. All of a sudden, certain germs were resistant to all available antibiotics. No therapy will work at all in this case.

UNI NOVA: How did resistance come about?

DEHIO: Through the widespread use of antibiotics, human beings have accelerated a natural evolutionary process to the point that it has become a major problem for medicine. Bacteria in the soil produce antibiotics to prevent other bacteria from growing. So that they themselves can grow, these antibiotic producers also express resistances. Those were always there, just not in the germs that are dangerous for us humans. However, bacteria exchange their genetic information. That is how resistant genes ended up in germs that cause disease in humans. So treatment with antibiotics actually breeds resistant pathogens. The more widely the active substance is used, the bigger the problem caused by the spread of these resistant pathogens.

UNI NOVA: If you now develop new antibiotics as part of your research, won't you aggravate the problem and accelerate this vicious circle?

DEHIO: No, on the contrary. We urgently need new antibiotics based on new principles that can kill the existing multidrug-resistant germs. But that's only ever a short-lived victory because resistance to any new active substance will arise sooner or later. We need new active substances from time to time to get one step ahead of the resistant germs in the race against bacterial evolution.

UNI NOVA: Why has the pharmaceutical industry not produced any new antibiotics recently?

DEHIO: First of all, the market has stopped working. There is no money in antibiotics any more. The main reason is that the known antibiotics are ridiculously cheap because the patent rights have expired. Compared with other medical therapies, treatment with antibiotics, which saves human lives rather than just prolonging them, is almost free. Secondly, the industry has made serious attempts to develop new antibiotics in recent decades but has not succeeded. This may in large part be due to the artificial laboratory conditions they work in. The cultivated bacteria do not resemble the physiological condition of the germs in our bodies. In the laboratory, bacteria grow at maximum speed, but in the body only slowly or not at all. Initially, work was successful under these conditions, but the method has reached its limits. Innovation has ground to a halt and we only ever find out what we already knew.

UNI NOVA: So research used to be very successful even though it worked under non-natural conditions?

DEHIO: Exactly. Most known antibiotics were discovered using these artificial conditions.

UNI NOVA: How do you intend to work?

DEHIO: In the lab, we try to simulate as realistically as possible the conditions that exist in infected tissues of our body. We still know astonishingly little about this. To close this gap in our knowledge, we first need material from patients, that is tissue samples from infected people.

UNI NOVA: Where do you get the samples from?

DEHIO: We use patient material resulting from routine examinations in the hospital, for example urine, bronchial secretions or infected tissue that is removed in orthopedic operations. With these samples, we determine the physiology of the bacteria in the human body. We then simulate the infection process on a miniature scale, for example, by using human mini-tissue on a biochip. In this way, we can search for new active substances.

UNI NOVA: Is this process also used elsewhere?

DEHIO: Only to some extent. Our unique characteristic is the ideal research environment in Basel. Here at the Biozen-

Christoph Dehio
has been Professor of Microbiology at the Biozentrum of the University of Basel since 2000. He studied biology at the University of Cologne and completed a doctorate at the Max Planck Institute for Plant Breeding Research there. He also worked at the Institut Pasteur in Paris and the Max Planck Institute for Biology in Tübingen. He is a member of the National Academy of Sciences Leopoldina and the European Molecular Biology Organization. Since 2019, Dehio has headed the National Center of Competence in Research (NCCR) AntiResist.

NCCR AntiResist
The National Center of Competence in Research (NCCR) AntiResist is searching for new strategies to combat antibiotic-resistant germs. It undertakes interdisciplinary research into how the biochemical and biophysical processes of bacterial pathogens progress in infected patients. These processes are then simulated in tissue models intended to enable the development of new active substances and working principles. The main location of the NCCR is the Biozentrum of the University of Basel, with the involvement of the Department of Biomedicine of the university, University Hospital Basel, the Department of Biosystems Science and Engineering (D-BSSE) of the ETH Zurich in Basel and other academic institutions in Zurich and Lausanne. The Swiss National Science Foundation is supporting the NCCR in its initial funding phase with 17 million Swiss francs.

trum, we have excellent fundamental researchers who interact closely with infectious disease specialists at the University Hospital. We also collaborate with bioengineers at the Department of Biosystems Science and Engineering (D-BSSE) of the ETH Zurich in Basel, who work with mini-tissues. And, importantly, we have pharmaceutical companies here, such as Roche, as well as SMEs already active in antibiotics development.

UNI NOVA: And the intention is that the pharmaceutical industry will bring the new drugs to market.

DEHIO: Yes, and with our research we'll create a new basis for the drug discovery and development process. The interface with industry is very important. We involved companies early in the development of our research concept.

UNI NOVA: The market is not working, you said. So what has to change?

DEHIO: One way is for health systems to spend more money on antibiotic treatments. This is already the case in the UK, and other countries, such as the US, are considering it. As soon as there is money to be made again, more companies and investors will get back into antibiotics development. Or you create new incentive systems: The company that develops a new antibiotic earns a market entry reward if it is successfully introduced to the market. This instrument takes account of the fact that a new antibiotic is first supplied only to a cabinet of reserved medications so that initial sales are low.

UNI NOVA: Why?

DEHIO: Because a new antibiotic that is deployed too widely will immediately give rise to resistance and would soon become ineffective. It has to be reserved for seriously sick patients who urgently need effective medication.

UNI NOVA: You're a biologist. Do you wish you were also an economist?

DEHIO: No, the market mechanisms and regulatory measures are the preserve of business and politics. Our NCCR is concerned with scientific innovations at the early stage of antibiotics discovery and development.

UNI NOVA: What if the NCCR and the new antibiotics it is helping to develop did not exist? What would happen?

DEHIO: With the NCCR, we want to bring about a paradigm shift in antibiotics research, but luckily there are more research activities in this field, in both the academic and the industrial sector, that could contribute to innovation. If collectively we do not succeed in developing new antibiotics, humanity will increasingly suffer from the impacts of resistance. A study commissioned by the British government forecast that by 2050 more people would die from antibiotic resistance than from cancer in this scenario. You can imagine what that would mean for society and what costs would be incurred. The risk of dying from a routine medical intervention or a simple infection would suddenly be as great as in the 19th century. We have to prevent that. ■

"Treatment with antibiotics actually breeds resistant pathogens."

Christoph Dehio

Culture, Corona and Chemistry.

Coronavirus pandemic

The minimum necessary and the maximum possible.

The coronavirus pandemic has also forced the University of Basel to take drastic measures: This spring semester's classroom teaching has been canceled, staff have been sent home to work and research has been reduced to a bare minimum. These measures are intended to protect the health of members of the university and to help stem the spread of the pandemic.

Lecturers have moved their teaching activities over to digital channels, students have had to reorganize their studies and individual doctoral students and postdocs revised their career plans. In addition, research projects have had to be postponed. It has been impressive to see how keen many University of Basel researchers are to contribute, through their work, to improving our understanding of the spread of the virus and developing measures to tackle it. ■

Continuing education programs

20 years of cultural management.

The cultural management degree program at the University of Basel celebrates its 20th anniversary this year. One of the first of its type in Switzerland, this two-year continuing education program provides students with advanced knowledge and skills at the interface between culture and management, cultural production and cultural policy. Since its inception, more than 500 people have earned their MAS in Cultural Management, a qualification recognized in the European Education Area.

The part-time program, which can also be studied in individual modules, covers cultural studies, topics relating to management, communication and media, legal issues, cultural policy and practical skills. It places particular importance on cultural reflection, and this is echoed in the online magazine created to mark its 20th anniversary. ■

202020.ch

The degree program in cultural management combines practical cultural work and academic teaching.

Science in conversation

Uni talks in Baselland.

In fall 2020, the University of Basel will hold four panel discussions in Liestal and Sissach in which experts from the university and the region will address current topics together with the audience. Two discussions on “decisions” and pensions will be held in Liestal in September. In November, two further events in Sissach will focus on families and other forms of partnership as well as on the fight against antibiotic resistance. ■

unibas.ch/uni-talk

Chemical landmark

Honoring Paracelsus.

Paracelsus, the Swiss physician, alchemist and natural philosopher, is one of the most famous people to have ever taught at the University of Basel. He came to Basel in 1527 as a municipal doctor and professor of medicine. In his lectures, some of which were held in German, he aimed to reform medicine and align it with practical experiences and experiments – to adapt it to patients’ needs. The Swiss Academy of Sciences is to honor Paracelsus by designating “Zum Vorderen Sessel”, one of his places of work, as a historic site of chemistry. The building currently houses the Pharmacy Museum of the University of Basel. ■

pharmaziemuseum.ch

How we make decisions.

Illustrations: Christina Baeriswyl

Which is the best option to choose? Should I take a risk in doing so or rather avoid it? We make decisions throughout our lives – yet only few of these are made consciously.

Attraction effect.

Imagine you want to buy a TV and can't make up your mind between a cheap, simple set and an expensive high-end set. If the choice was then expanded to include another cheap TV that was much worse than the first cheap TV, you'd choose the first cheap TV. If, instead of two cheap sets, your choice now included a second expensive set that was much worse than the first expensive set, you'd opt for the first expensive set. According to traditional economic theories of decision-making, however, this shouldn't happen. The attraction effect describes how the addition of a third option affects a choice between two other options.

“Different people make different decisions.”

Research into human decision-making brings together the fields of psychology and economics. One of the first researchers to study this topic intensively at the University of Basel is Professor Jörg Rieskamp.

Interview: Christoph Dieffenbacher

Jörg Rieskamp is a professor at the Faculty of Psychology of the University of Basel, where he leads the Center for Economic Psychology. Before joining the University of Basel in 2008, he worked at the Max Planck Institute for Human Development in Berlin. He now examines how decisions are made in circumstances of risk and uncertainty, and develops theories and models that can be used to explain human judgments and decision-making.

UNI NOVA: Professor Rieskamp, it is said that an adult human has to make tens of thousands of decisions every day. Why do we still know so little about this field?

JÖRG RIESKAMP: Although the psychology of decision-making is a relatively new area of science, we’ve now moved beyond the very early stages – and researchers have already presented a number of insights. For example, decision-making research received particular attention around 20 years ago when two researchers from the USA, Daniel Kahneman, a psychologist, and Vernon L. Smith, an economist, were awarded the Nobel Prize in Economics in recognition of their work. Our research involves a constant interplay with economics, whose theories often postulate a rational individual. Yet instead of normativity, we psychologists are more interested in the basic cognitive processes that underly judgments and decisions …

UNI NOVA: … and, in doing so, you draw a distinction from the concept of homo economicus, which is guided by the greatest economic benefit?

RIESKAMP: Yes, that’s the point. An individual’s decisions depend on many factors, including the situation and context, and these factors can have different effects on different people. For example, we’ve shown that certain personality traits have a profound impact on decisions, and these traits tend to remain relatively stable over an entire lifetime – for instance, people differ in terms of what is known as their risk preference: Most people are risk-averse, but there are also people who enjoy taking risks. At the same time, our duties and demands vary over the course of our lives, and the decisions we make will be more or less risky depending on the situation. Key factors in this include a person’s age and the corresponding resources at their disposal.

UNI NOVA: In this type of research, the fields of economics and psychology work hand in hand with one another. Is the latter supposed to help the former keep the economic system running as a whole?

RIESKAMP: I wouldn’t say it’s supposed to help. As psychologists, we focus our attention elsewhere – our aim is to explain how people make decisions. If our descriptions of human behavior yield different results from those of the economists, then these findings can aid the development of more realistic economic models. At the University of Basel, one example of this relationship is our Bernoulli Network, which focuses on the interplay between psychology and economics.

UNI NOVA: When people become customers and investors: How close is the relationship between economics and psychology in decision research?

RIESKAMP: There are a number of key differences: In many individual decisions, the potential consequences are not entirely certain – or, as we psychologists would say, decisions are made in circumstances of uncertainty and risk. In the context of consumer behavior, we often neglect this uncertainty: When choosing a detergent in the supermarket, we assume that the price is fixed and won't be changed at the checkout. Quite the opposite is true when it comes to decisions to invest in retirement plans, for example. Investing in shares doesn't necessarily produce a high yield, especially when viewed in the short term. Here, it's important to account for people's different risk preferences and gauge their risk tolerance. In the aftermath of the last financial crisis, banks were even obliged to provide customers with more-detailed information about the available products and the levels of risk they carry.

UNI NOVA: We make decisions with uncertain consequences on a daily basis. Is a decision therefore a choice between two different risks?

RIESKAMP: Yes, and this is clear when it comes to questions of health. For example, many people initially struggled to evaluate and assess the risk associated with the coronavirus, which is obviously partly due to the rapidly changing circumstances. And, when choosing a mode of transport, many people are unaware of the considerable differences in risk – that is, how dangerous riding a motorcycle is compared to driving a car and, by contrast, how safe you actually are on an airplane, statistically speaking. People assess specific risks and hazards differently and not always accurately. The risk of new and frightening hazards is often overestimated, while we underestimate the risk associated with hazards we've been dealing with for a long time and are familiar with. At the same time, the subjective perception of a risk often fails to reflect the objective danger.

UNI NOVA: Would it be wrong to conclude that humans are not particularly good at estimating risk and probability?

RIESKAMP: Well, probability theory is a branch of mathematics, which many people aren't particularly good at. In new situations, therefore, people often struggle to make specific and accurate estimates of probability. On the other hand, if someone has a lot of experience in an area and is considered an expert, their estimates can be very accurate. For example, meteorologists are very good at dealing with statements of probability in weather forecasts. Communicating and improving the understanding of probabilities, however, calls for a more accurate explanation of the reference class – the class of events or objects to which the probability refers.

UNI NOVA: Do you see yourself more as a basic or an application-oriented researcher?

RIESKAMP: Both. By examining the cognitive processes that underly a variety of different decisions in humans, we are clearly acting as basic researchers. But the beautiful thing about this branch of science is that by explaining decisions, we can also quickly establish their practical relevance and their link to real-world applications. For example, a person who is very risk-averse in their general behavior should be advised against investing their entire fortune in shares on a short-term basis. ■

"The risk of new and frightening hazards is often overestimated, while we underestimate the risk associated with hazards we've been dealing with for a long time and are familiar with."

Jörg Rieskamp, psychologist

Aversion to ambiguity.

Researchers draw a distinction between risk and ambiguity. Risk is uncertainty about known probabilities. This applies to roulette, because it is easy to calculate the probability of winning. Ambiguity is uncertainty about unknown probabilities. This applies to poker, because we don't know which cards the other players have in their hands. It is possible to demonstrate that people are more averse to ambiguity than to risk. Our aversion to ambiguity is very easy to observe in everyday life. When renting a car, for instance, most of us try to avoid a deductible, even though it's highly unlikely that we'll damage the car. Yet because we don't know the probability exactly, we sidestep the deductible.

How tossing coins can help.

When faced with a difficult decision, flipping a coin can make things easier. You're under no obligation to do as it says, but it could trigger feelings and thought processes.

Text: David Herrmann

Making decisions is tough. This young lawyer would agree: After graduating, he had two attractive job offers on the table. One was in a big law firm with a good salary and career prospects, but long hours and lots of overtime. The other was from a smaller law firm. The salary and career prospects weren't as rosy, but the working hours promised a great deal of flexibility. So what was he to do? He weighed up the arguments, wrote lists of pros and cons, but still couldn't make up his mind. Then he tossed a coin, which told him to go for the big law firm. Yet he didn't feel comfortable with the idea at all, so he decided to take the other job.

The lawyer was at the beginning of a research project at the University of Basel. A group of social psychologists at the university – Mariela Jaffé, Leonie Reutner, Maria Douneva and Rainer Greifeneder – had been observing for some time in their private lives that many people find it very hard to make decisions. "I faced a similar choice before starting my doctorate in Basel: Should I stay in business consulting or go into academia?," says Jaffé. She decided to join the team led by Professor Rainer Greifeneder at the Faculty of Psychology. As part of a project funded by the Swiss National Science Foundation, she and her colleagues hope to find out why tossing a coin can help us make decisions.

An appetizing five-course meal

The starting point for their work was a number of studies in which the participants were allowed to put together a five-course meal. The dishes on offer were all very tasty, which made the choice harder. Before each decision, the participants flipped a coin and were asked to view the result as just a decision-making aide rather than a strict instruction. This type of coin toss is therefore different to the ones used in sport – for instance, to choose a goal in soccer. There, the result is binding. The study found that a coin toss really does help people make decisions. A second study, this time using a dice instead of a coin, reached the same conclusion.

Jaffé says the coins and dice function as catalysts that make it easier to choose: "With the coin, you commit to one of the options, which then becomes concrete and therefore tangible. That in turn triggers feelings: Do I agree with the choice or not? How do I respond to the outcome?" The survey also showed that the participants, precisely as specified the study design, didn't always stick with the result of the coin toss. If they weren't happy with the outcome, the participants were free to choose a different option – just like the young lawyer, whose coin showed him what he didn't want to do.

Intuition suddenly becomes visible

An act as simple and unremarkable as tossing a coin can genuinely release us from the anguish of making decisions. By establishing this, the work of the Basel research group has filled a gap: Previous

studies focused on the coin toss in soccer, where it acts as the decision-maker. The findings that show how a coin toss can act as a catalyst, however, are new. Flipping a coin can help make our intuition visible and connect us with our gut instinct.

"Now we're interested in whether acceptance of the coin toss varies across different decision-making styles, which in humans can range from rational to intuitive," says Jaffé. Initial results show that people who tend to rely on their intuition can deal better with the idea of tossing a coin. They can then make their own decision based on how they feel about what the coin says. "However, it appears that flipping a coin is not the preferred decision-making strategy among more deliberate decision-makers," says Jaffé.

Things become tricky, however, if a person rejects the result of the coin toss and makes a different decision which then turns out to have been a mistake. "Some people feel that a person who reached a decision in this way is more responsible for the negative outcome," explains Jaffé. Conversely, the coin can also assume a doubling function – when it corresponds to the person's own decision. "The participants could feel validated in their opinion, while others see them as being more responsible for the outcome than if they had just let fate decide."

"Every day, we make countless choices between different options. Every decision also means giving something up."

Mariela Jaffé, psychologist

Decisions also mean sacrifices

Flipping a coin can help us make decisions more easily in our private lives. Yet the psychologists also say that the findings could conceivably be transferred to the world of work. Corporate decision-makers could ease their burden by using a coin to test out decisions in difficult situations. However, the researchers say that the feelings and considerations that ultimately lead to the decision should be underpinned by facts. "People are unlikely to appreciate managers who say that their decision was based on a coin toss," says Jaffé with a smile.

Every day, we make countless choices between different options. Every decision also means giving something up. The lawyer, for instance, gave up money and career prospects in favor of time and flexibility. Jaffé is planning a follow-up project that will investigate how the results differ when the participants know from the outset what they are forfeiting. Specifically, this involves her showing psychology students either a Snickers or a package of Smarties – both of which are very popular snacks. The coin toss makes a choice for the participants, but here again it serves as an aid and is not binding.

Jaffé expects this situation to trigger stronger forfeiting in response to the coin toss: "After all, the participants know exactly what they are giving up if they decide against the coin." As yet, the question of whether the participants were ultimately happy with their choice has not been investigated. Perhaps the lawyer will change his mind and begin climbing the career ladder further down the line. ■

Memory bias.

You're sitting in the office thinking about where to eat lunch. You don't have the restaurants in front of you, so you have to retrieve them from your memory. In this situation, people prefer options that they can recall more clearly. If you have clear memories of the fast-food place around the corner, you're also more likely to choose it – even if you don't actually like it so much. There are at least two explanations for this behavior. Firstly, if you can't remember something very clearly, then you suspect that it can't have been very good. Secondly, a poor memory of something means that you can't be completely sure about it, so it's an uncertain option – and people don't like uncertainty and ambiguity.

How our memory can trick us.

When we have to make a choice, we often select the options that trigger the strongest memories. One reason for this is that weak memories tend to make us feel uncertain.

Text: Martin Hicklin

When faced with decisions in everyday situations, we constantly rely on the more or less reliable memories that are drawn from our "episodic memory" system. For example, we need these when choosing a restaurant to go to lunch with our colleagues. Or if we are planning a weekend hiking trip with friends.

When this happens, different options play out before our mind's eye, calling up memories that are either very vivid or rather faint. Interestingly, very little research has been conducted on the relationship between memory and the cognitive process of decision-making, although they are used every day. A team headed by Professor Sebastian Gluth at the Center for Decision Neuroscience at the Faculty of Psychology sets out to change this. The relationship between specific memories stored in our episodic memory and the decision-making process is Gluth's primary research focus.

Sebastian Gluth is a professor and Head of the Center for Decision Neuroscience at the University of Basel's Faculty of Psychology.

Memory bias

Some years ago, Gluth and his team investigated why certain options win over others and how objectively our memory influences our decisions. This research was not conducted in restaurants or on hiking trails, however. Instead, the tests took place on computer screens in a laboratory. Participants were first asked to evaluate different snacks and then learned to link these snacks with specific cards on the screen – similar to the well-known Matching Pairs memory game. At the end, they were asked to choose between cards without actually seeing the snack in question.

This experimental setup proved valid. A complex study with 30 participants demonstrated that the participants in this situation mostly chose the options that triggered the strongest memories. Interestingly, this was still the case even when the snack had been given a poor rating beforehand.

This effect is referred to as "memory bias". Although the study provided empirical evidence for the presence of this effect, it did not allow to understand the mechanisms at play. In an attempt to answer this question, Gluth and his doctoral students Regina Weilbächer and Peter Kraemer tested the hypothesis that choosing an option of which you have no or very little memory is similar to choosing an uncertain option. And a lot of research has shown that uncertainty is disliked very much and tends to be avoided.

Risks taken in the face of losses

The experiment conducted by Gluth and his colleagues drew on an older, well-established observation in uncertainty research: Where there are potential gains, people prefer the safest choice and avoid lotteries and games of chance, as shown in numerous studies by teams led by psychologists Amos Tversky and Daniel Kahneman over the past few decades. Conversely, people are more likely to take risks if

they are trying to avoid certain losses. Kahneman and Tversky call this phenomenon the "reflection effect". Building on these findings and the hypothesis that uncertainty is one reason for memory bias, Gluth and his team tested the prediction that the memory bias also works in reverse when making decisions that involve potential losses.

And indeed: The experiment did show that choices based on memory with the prospect of a reward resulted in the "safe" options with strong associated memories being chosen. The very opposite occurred when it came to avoiding losses. The predictions thus proved to be correct, leading to a better understanding of the role that memory plays in decision-making where risks are involved.

This could have all manner of consequences. Older people tend to be more wary of risks than younger people when making decisions, for example. General prejudice would regard this as the result of older people being more set in their ways. Yet maybe the reason for this is the quite different and surprising explanation by dwindling memories. Although this phenomenon has not (yet) been tested and confirmed experimentally (unlike the fact of declining memory performance with age), current research by the team at the Center for Decision Neuroscience supports the strong assumption that it exists.

"In our work, we look at how we can predict decisions as accurately and detailed as possible. We target decisions on various levels of analysis," explains Gluth. He is assistant professor and Head of the Center for Decision Neuroscience, which is one strand of the focal area in social, economic and decision psychology. "We work very closely with one another within the faculty. As the official description goes, what connects us is 'our passion for research into human decision-making in a social and economic context'."

Neuroscientific processes

What Gluth brings to the table is experience in neuroscientific methods such as functional magnetic resonance imaging (fMRI). This is a unique selling point. These methods are instrumental when it comes to identifying the processes inside the brain that connect with the psychological processes examined here. Gluth, however, sees this method primarily as an additional tool. These methods will, above all, help testing the validity of the decision-making models and improving them. "First and foremost, I'm a psychologist," comments Gluth, "I'm interested in finding out how our thoughts and decision-making processes work. I'm not simply interested in knowing what this or that part of the brain does."

"We look at how we can predict decisions as accurately and detailed as possible."

Sebastian Gluth, psychologist

To achieve maximum transparency, Gluth and his team have adhered to the golden rules of open science from the very outset. This brings about huge benefits in terms of the repeatability of the experiments and the reproducibility of the scientific results. This is why all the experiments and the planned approach is meticulously recorded in advance. Other researchers and interested parties, for example, can visit the Open Science Framework server (OSF, www.osf.io) and see immediately which hypotheses are being tested, what data form the basis of their predictions, what is known already and what the planned approach is.

Information on the recruitment and the number of participants, what measures were taken to produce statistically robust results – this, too, is made available online in advance, even the scripts for the models used to perform the calculations. This is an open invitation for constructive, creative criticism. Once a paper is ready for publication, it is first made available for peer review on a preprint server for psychological research before submission to an academic journal. Only then is the paper published, and preferably in a specialist journal that allows open access without a paywall. What more can you ask for publicly funded research. ■

Good mood leads to snap decisions.

If you're in a positive frame of mind, you won't make optimal decisions. This is according to findings by researchers from the University of Basel. They investigated so-called sequential decisions, which occur frequently in daily life, such as when buying a house or looking for a job. You receive a sequence of offers that you can either accept or reject. With these types of decision, the quality of your choice is linked to how many offers you consider. Spend too little time looking, and you risk missing the best offer. Yet waiting too long also puts you at risk, as someone else might beat you to it. The researchers found that the better the participants were feeling, the quicker they were to accept an option. The effect occurred more frequently in older participants.

"Risk can be positive, too."

What determines our willingness to take risks? Cognitive psychologist Jana Jarecki tackles this question in her research at the University of Basel. Her studies show that risk is generally not an end in itself, but rather a means to the end of satisfying certain needs.

Interview: Andreas W. Schmid

UNI NOVA: Dr. Jarecki, you are a decision researcher. How often do you choose to take risks yourself?

JANA JARECKI: Certainly more at work than in my private life. Being a researcher is a risky proposition, in the sense that research does not offer a great deal of job security. If it was job security I wanted, I'd have to work in a different field.

UNI NOVA: How do you define risk?

JARECKI: In risk research, decisions that we describe as risky can have both negative and positive consequences. This definition contrasts with the everyday usage of the concept of risk, where it is almost exclusively associated with negative outcomes – hazards and costs. Risk can be positive, too. For someone with no climbing experience, attempting to scale a rock face may well involve a substantial risk of falling. For an expert climber the risk is much lower: Their experience puts them in a better position to evaluate the situation, and their skills have been honed through years of practice.

UNI NOVA: So, more experience means less risk?

JARECKI: In this particular instance, yes. But we have to be careful with generalizations of this sort – risk can vary from one area of life to the next. For example, studies have shown that on the stock market, complex investment strategies are not necessarily any more successful than investment decisions made at random by someone with no experience whatsoever. This is because in the stock market, risk is exogenous – which is to say, the market is subject to external influences. This means that even an experienced trader is often unable to anticipate events.

UNI NOVA: Warren Buffett would probably beg to differ.

JARECKI: There are people that have achieved somewhat unlikely things. Warren Buffett is one of them. But I'd like to see what would happen if there were 100 Warren Buffetts operating in the financial markets, rather than just one – and whether they would all achieve the same results. I have my doubts.

UNI NOVA: What determines a person's propensity to take risks?

JARECKI: Risk-taking is not just a matter of personal preference – it also depends on the situation. A good example from the animal kingdom is given in a study by Alasdair Houston and John McNamara: Consider a little bird that needs 1,000 calories so as not to freeze to death at night in the winter. During the day, it searches for food. If the search is successful, there is no need to take risks. But on a bad day, on which the bird has still not found much food as sunset approaches, it is forced by the situation to take greater risks – such as venturing into areas with more predators. In this case, risk-taking is not an end in itself, but rather a means to the end of satisfying its needs.

UNI NOVA: To what extent do these findings from the animal kingdom apply to human behavior?

JARECKI: In a recent risk study, we confronted participants with situations analogous to that of the little bird. The participants were asked to play an online game in which they had to make decisions to reach a given score, with lower-risk and higher-risk options. When the target score was higher, their willingness

Jana Jarecki
is a postdoctoral researcher in economic psychology at the University of Basel's Faculty of Psychology, where she researches and teaches in the fields of experimental, evolutionary and cognitive psychology.

to choose riskier options increased substantially, while lower targets resulted in less inclination to take risks. Our results, along with those of other studies, show that people have a good feeling for when it makes sense to select riskier or safer options.

UNI NOVA: Are men bigger risk-takers than women?

JARECKI: In 1999, a meta-analysis by the American psychologist James P. Byrnes concluded that women are on average somewhat less inclined to take risks than men. However, many studies at that time focused on just a small number of areas of life, such as traffic or health. In a study with 120 subjects, Andreas Wilke and I found that there are areas in which women are more willing to take risks than men. One example is family: While this is an area in which most people are fundamentally willing to take some degree of risk, women are even more so than men. Thus, in our experience, it isn't accurate to say that men are bigger risk-takers in general – it depends on the context.

UNI NOVA: How do you explain women's willingness to take more risks than men when it comes to family?

JARECKI: One of my master's students is investigating the reasons for these differences in her thesis. There are various factors at play, but they've not yet been scientifically substantiated. What we have are hypothetical explanations, such as the suggestion that women have a different relationship with their offspring for purely evolutionary reasons: Women can be 100 percent sure that their children are in fact their own. Men can't be that certain, unless they take a paternity test. (laughs) Perhaps, risk-taking also relates to experience, just like in the climbing example: Traditional social structures have given women more experience in dealing with family, while men are more experienced in other areas – leading them to evaluate risks differently. But I should reiterate, these are just speculative hypotheses. Moreover, I think it's important to free ourselves from these rather rigid ideas about men and women and in my research, I consider the decision-making process itself much more interesting. Understanding the mental processes enables us to help people to make good decisions.

UNI NOVA: What makes people change their attitude to risk?

JARECKI: Here, we can again apply theory from the field of biology, which states that risk-taking is a means to an end. This means that risk-taking is not just a matter of having a particular attitude to risk, which might be situation- or gender-specific, but that there are situation-specific reasons behind our decision whether or not to take a given risk. One such reason is our need for resources.

UNI NOVA: What does that mean in practical terms?

JARECKI: Research on attitudes toward risk exists around the world. The results show that people in northern Europe or North America take far fewer risks than people in Africa or South America, for instance. To put it bluntly, if risky behavior is the only way of making enough money to send your children to school, then you are forced to take greater risks. This shows that people's risk behavior is heavily influenced by their circumstances.

UNI NOVA: Would it be desirable for people to take more risks?

JARECKI: There are some areas where it makes sense, such as the stock market. Statistics show that in the long run, shares yield higher returns than fixed-interest bonds. However, you have to be willing to accept the risk of high price fluctuations with losses. Career choices are another example: To boost progress and innovation in society, it would quite certainly make sense for more people to launch start-ups. However, many people equate being self-employed with a high degree of risk, and therefore they shy away from it. ■

Gambler's fallacy.

In many decisions, people clearly struggle to correctly assess the probabilities. If, for instance, the roulette ball lands on red several times in a row, many people assume that the probability of the different outcome (landing on black) increases. This is, of course, not the case, as each event is independent of the previous event. It is still hard to avoid the fallacy, though. One study showed that goalkeepers make this mistake during penalty shootouts in soccer. Once two or three players have sent the ball left, the goalkeepers usually jump to the right because they think that the next player is sure to go right. In reality, the players don't shoot right any more frequently.

If children held the purse strings.

Investments are not always made in an entirely rational manner. However, an experiment by an economist at the University of Basel shows that children already have the capacity to evaluate simple probabilities.

Text: Christoph Dieffenbacher

A well-known proverb tells us it is a bad idea to put all our eggs in one basket. This paradigm can be traced as far back as the Talmud, written around 200 AD, according to which "it is advisable for one that he should divide his money in three parts, one of which he shall invest in real estate, one of which in business, and the third part to remain always in his hands." In today's financial and investment markets, this strategy is known as diversification. Experts invariably advise investors to put their money in a broad range of assets in order to maximize their potential gains and minimize their risk of loss.

"Children are already equipped to intuitively engage with the phenomenon of risk and probability."

Ola Mahmoud, economist

There is a general consensus that when applied to economic activity, this strategy boosts competition, innovation and growth. The best defense against the vagaries of the market is considered to be a diversified portfolio. However, the problem is that many people do not act on this advice, says Professor Ola Mahmoud, Assistant Professor of Corporate Finance at the University of Basel: "The notion of rational diversification is often disregarded by biased investors in the financial markets." Instead, she says, many investors stick to an excessively narrow range of simple products – thereby exposing themselves to a considerable degree of risk.

The professor, who was born in Cairo and spent part of her childhood in Germany, holds a doctorate in mathematics and has professional experience as an investment strategist. She observes that many people rely on "naive" models which do not take probabilities and correlations into account. Even the renowned originator of the theory of diversification, Harry Markowitz, is said to have simply divided his retirement investments equally between bonds and equities. The famous economist justified this deci-

sion on psychological grounds: "My intention was to minimize my future regret."

According to Mahmoud, people's tendency not to invest optimally can often be explained in terms of psychology and behavioral economics. To find out how children make decisions, she conducted an experiment which she describes as "the first of its kind", involving dice with faces painted in two colors in different proportions: while one die had three red and three blue faces, for example, another had five red faces. The young test subjects were told how the colors were distributed on a given die, after which they were instructed to bet on a color of their choice and roll the die. Correct bets were rewarded with coupons in the form of gummy bears. In this way, the 76 schoolchildren aged 6 to 12, with no particular background knowledge in financial mathematics, had to decide which betting strategy would yield the most sweets.

Mahmoud was surprised by the results: "The children only applied the simple strategy when it was the theoretically optimal thing to do," she says: "In other words, when the dice had an equal number of faces of each color, for example, making the chance of winning 50%." She had assumed that children would bet on a color even when it only matched one or two faces, but it turned out that the pupils were quite capable of figuring out which bets offered the highest chance of success.

According to Mahmoud, the dice-rolling experiments show that children are already equipped to intuitively engage with the phenomenon of risk and probability in a financial setting. She believes that the urge to diversify in the face of choice may be hard-wired into human behavior at a basic level, but subsides in adulthood for various psychological reasons. Incidentally, two of the older boys came up with a creative way of hedging their risk: They agreed to pool their winnings from the various tasks and divide them equally, the researcher recalls with a smile: "It's another possible approach, and one that shows just how ingenious kids can be." ■

Ola Mahmoud is Assistant Professor of Corporate Finance at the University of Basel's Faculty of Business and Economics. In her research, she is interested in financial decisions under uncertainty and risk, behavioral finance, decision theory and the principles of sustainable investment decisions.

10-10-10 rule.

When faced with a decision, it can be helpful to ask yourself how you might feel about your choice in ten minutes, ten months and ten years. Working from the known facts, collect all the important aspects that are relevant to making the decision, and consider their impact. Will you be happy to have made this decision in ten years' time? Or will it fail to bring you to where you want to be in ten years? These kinds of questions are particularly important when choosing a job or a partner. Some decisions can prove wrong at first but ultimately end up being right. This method helps you to visualize and remain focused on the short-, medium- and long-term effects.

Once a risk-taker, always a risk-taker.

It is well known that some people are more inclined to engage in hazardous or risky behavior than others. Individual attitudes in this regard, however, seem to follow a clear pattern over the course of a lifetime – in a similar manner to intelligence. Psychologists in Basel are investigating how people's attitudes to risk are formed.

Text: Christoph Dieffenbacher

Renato Frey lowers his standing desk. The modern, dark sofa in the office looks tempting, but his guest decides to take a seat at the psychologist's desk, where the conversation can be illustrated with graphs and curves.

Risk and uncertainty

The observation that experience plays a key role in all of our everyday decisions seems trivial enough. What other factors, however, might be at play when it comes to making "decisions under risk and uncertainty"? This is how specialists refer to choices for which we cannot be entirely sure what consequences our actions will have – the overwhelming majority, in other words. Another pertinent question is whether risk behavior additionally depends on the particular situation, or one's momentary mental state. And for that matter, are particular groups of people more inclined to take risks than others?

Older people and women are more likely to avoid risks when making decisions, says Frey, citing the latest studies – but points out that the situation is more nuanced than that. As Frey discovered together with other researchers, older people can make certain decisions just as well as younger ones, despite their declining mental agility. However, this is only true for decisions involving a small number of options – when faced with a wider range of choices, age differences become more apparent, he explains.

While the statistics show that men are more likely to take risks than women, "it remains unclear whether such gender discrepancies are caused by biological or cultural factors," Frey points out, adding that to answer this question, complex models involving a variety of measurement techniques are needed. It also means developing new "game-like risk tests" with which researchers hope to recreate complex real-world situations as faithfully as possible.

Searching for the R factor

"How we normally make decisions in the face of risk can be expressed quite well as a factor, which we call risk preference or risk attitude," explains the decision researcher. This R factor, which a number of research groups around the world are investigating, can be regarded as a stable psychological trait. Frey and his colleagues recently identified the R factor for the first time, in a study involving over 1,500 test

Renato Frey is a postdoc at the Center for Cognitive and Decision Sciences at the University of Basel's Department of Psychology as an SNSF Ambizione research fellow. He is also an associate researcher at the Center for Adaptive Rationality at the Max Planck Institute for Human Development in Berlin.

subjects. They showed that the R factor remains remarkably stable over time: "While risk propensity tends to tail off in older people, someone who was a daredevil when they were young is likely to take more chances in old age, too."

The participants in the study spent a day at a computer performing 39 different risk-related tasks, as well as various lotteries and game-like tests such as the "balloon test", in which the participant has to fill a virtual balloon with air. A given amount of money is earned with each stroke of the pump – but if the balloon bursts, the money is lost. For this task, learning from experience appears to be an effective strategy.

A notable aspect of this study was that the test subjects were asked to assess their own attitudes to risk. The psychologists observed a strong correlation between these self-assessments and real-life activities involving risk, such as smoking. By contrast, behavior-based risk tests have so far provided a very inconsistent picture in this regard, Frey notes: "People exhibit very different risk behaviors depending on the task at hand, which presents a major challenge when measuring the physiological and biological aspects of risk behavior – for instance using functional magnetic resonance imaging (fMRI)."

"Can every individual be assigned to a particular risk type? This may well be the case."

Renato Frey, psychologist

Predictive models on the horizon?

It has therefore been a longstanding goal of behavioral sciences like psychology, he explains, to describe people's risk preferences using models – for example in order to make certain predictions. Asked whether every individual can be assigned to a particular risk type, Frey replies that this may well be the case, citing another study in which his research group examined data from a sample of over 3,100 people in the USA. Model-based cluster analysis, a technique also used in machine learning research, revealed that around two thirds of the test subjects matched one of four basic risk profiles.

Risk behavior is a hot topic among research teams around the world in the field of decision psychology: "It's an exciting area, not least because it touches on a range of different disciplines such as psychology, economics, biology, medicine and gerontology," says Frey. Their efforts combine behavioral experiments with modern measurement techniques and imaging technologies, as well as methods such as eye tracking.

Climate change as a systemic risk

Applied research in the field is also on the rise, yielding results that can be applied not just to psychology and economics, but also to areas like technological innovation, drug and transport policy or healthcare. Risk perception – for instance in relation to the 5G standard in mobile communications – is another topical issue, not least when it comes to systemic risks. According to Frey, a problem with these risks is that the consequences of our decisions do not always make themselves felt immediately, often arising only much later – as is the case with climate change, for example.

There is therefore an urgent need to verify the extent to which the stated preferences and behavior of test subjects in the lab coincide with their actual risk behavior in real life. According to Frey's cognitive models, self-assessments are indeed substantially based on experiences from people's own everyday lives – an optimistic conclusion – and with that, Frey releases his guest back into a world full of risks. ■

On gut feelings and financial decisions.

As much as we'd like to think that we make economic decisions rationally, that's not always the case. It's becoming increasingly clear that our emotions also play a major role.

Text: Yvonne Vahlensieck

Should I buy a house or continue renting? Should I put my savings into stocks and shares? Can I afford to work less? The way in which people make these decisions is a key area of research for economists. "You can't make economic forecasts until you understand this behavior," says Armando Meier, a microeconomist who earned his doctorate at the University of Basel and is currently a postdoc at the University of Chicago. "Taken together, these small decisions also affect larger economic developments."

A survey of 30,000 people

It has long been known that people don't always act rationally in economic matters. Feelings are often the driving force behind a decision, and the connection can be demonstrated in laboratory tests of risk tolerance. These experiments involve researchers artificially putting their subjects in the desired emotional state – perhaps by showing them a horror film to make them feel scared, or playing music to make them feel happy – and then measuring risk tolerance using a simulated game of chance. Depending on the chosen method, however, these tests can sometimes produce contradictory results.

This is why microeconomists like Meier supplement the laboratory tests with data from daily life. The information is drawn from large-scale surveys such as Germany's Socio-Economic Panel, which began in 1984 and asks the same people every year about multiple topics including their economic situation and how satisfied they are with their lives. In some years, the participants also provided information about their current emotional state as well as about their risk tolerance and patience. "The large dataset allowed me to see the effect of people's emotions in an everyday context, and I was able to use that to check the various hypotheses," says Meier, who had access to around 170,000 statements for his analysis from more than 30,000 people.

Happier people risk more

Specifically, Meier investigated how happiness, fear and anger influence risk toler-

Armando Meier earned his doctorate at the University of Basel and has been working as a postdoc at the University of Chicago for two years. His research covers topics in microeconomics, labor, health and behavioral economics.

ance and patience. He found that both happiness and anger increase people's willingness to take risks. Fear, on the other hand, has the opposite effect and makes people more cautious. A happy (or angry) person is therefore more likely to try something new than someone who has just come through a traumatic experience. This could explain why a terrorist attack has a temporary negative impact on economic growth – people are scared and shy away from making new investments.

Patience is also emotion-dependent. Whereas happiness increases patience, angry and frightened people generally consider themselves impatient. This, too, can affect economic decisions. For instance, a patient person will probably make long-term investments, while an impatient person will quickly offload less-profitable securities.

Subjective assessment of feelings

In another analysis, Meier showed that feelings influence behavior, not vice versa. "Theoretically, it could be that risk tolerance changes first and then causes the person's emotions to shift," he explains. With that in mind, he looked more closely at the data from people who had lost a parent or child in the survey period. Events of this nature resulted in the people feeling less happy and also reduced their risk tolerance. This pattern indicates that the emotional changes were indeed responsible for the behavioral changes.

Although his analyses are based on subjective evaluations by the respondents themselves, Meier believes the findings are robust: As other research groups have found in their investigations, self-assessments of feelings generally match the reality very well. Meier also corrected for numerous other factors, such as financial circumstances and health problems, to make sure they did not affect the results. His overall conclusion is that feelings play a larger role in risk tolerance and patience than previously thought – in fact, when compared to age group and social class, they appear to be extremely important.

Meier says that very little is currently known about the underlying psychological context: "Psychologists have conducted a few experiments in this direction and have formulated various hypotheses, but many of the results still contradict each other." One of the hypotheses suggests that both happiness and anger create a feeling of control, which leads to higher risk tolerance.

Rain leads to more "no" votes

So although the mechanisms are not yet fully understood, economists should avoid underestimating the effect of our emotions. This is supported by the study that Meier conducted for his doctorate in the working group led by Professor Alois Stutzer at the University of Basel in collaboration with Professor Lukas Schmid at the University of Lucerne. For the study, Meier investigated the relationship between the weather and the outcome of referendums held in Switzerland from 1958 to 2014. He found that the population was more likely to vote "no" – in other words, for the less risky status quo – when it was raining than when it was dry.

Evidence showed that the effect was not caused by certain voter groups staying at home when it rained. A number of other potential factors were also ruled out. Meier and Stutzer therefore believe that the most plausible explanation is that rain puts voters in a bad mood and removes their willingness to trigger large-scale, risky changes with a "yes" vote. Without the influence of these weather-dependent feelings, some narrowly decided referendums could have gone the other way – meaning that, if the weather had been different on the weekends people went to the polls, Switzerland's political and economic development would probably have taken a different course. ■

"Feelings play a larger role in risk tolerance and patience than previously thought."

Armando Meier, economist

Abilene Paradox.

We often interpret silence as agreement. In extreme cases, this results in everyone staying silent and believing that the others are in favor – when in reality, everyone wants the opposite. Some decisions look as if they are based on a consensus but are in fact the result of false perceptions and therefore lead to behavior that goes against the original intention. Jerry Harvey, a professor in the United States, discovered the paradox after visiting his home town of Abilene with his wife and her parents. Someone had suggested the trip because they'd assumed that the others needed a change of scenery. They had all agreed because they thought that the others also wanted to go. Once they got back, it turned out that they'd all rather have stayed at home.

Physics at low temperatures.

At absolute zero, new laws of nature and types of matter can be discovered. In the cryo laboratory, physicists cool nanostructures down to –273.14 °C and measure whether they are suitable for use as components in future quantum computers. The unique infrastructure at the Department of Physics is part of the European Microkelvin Platform network and a site for international research cooperation.

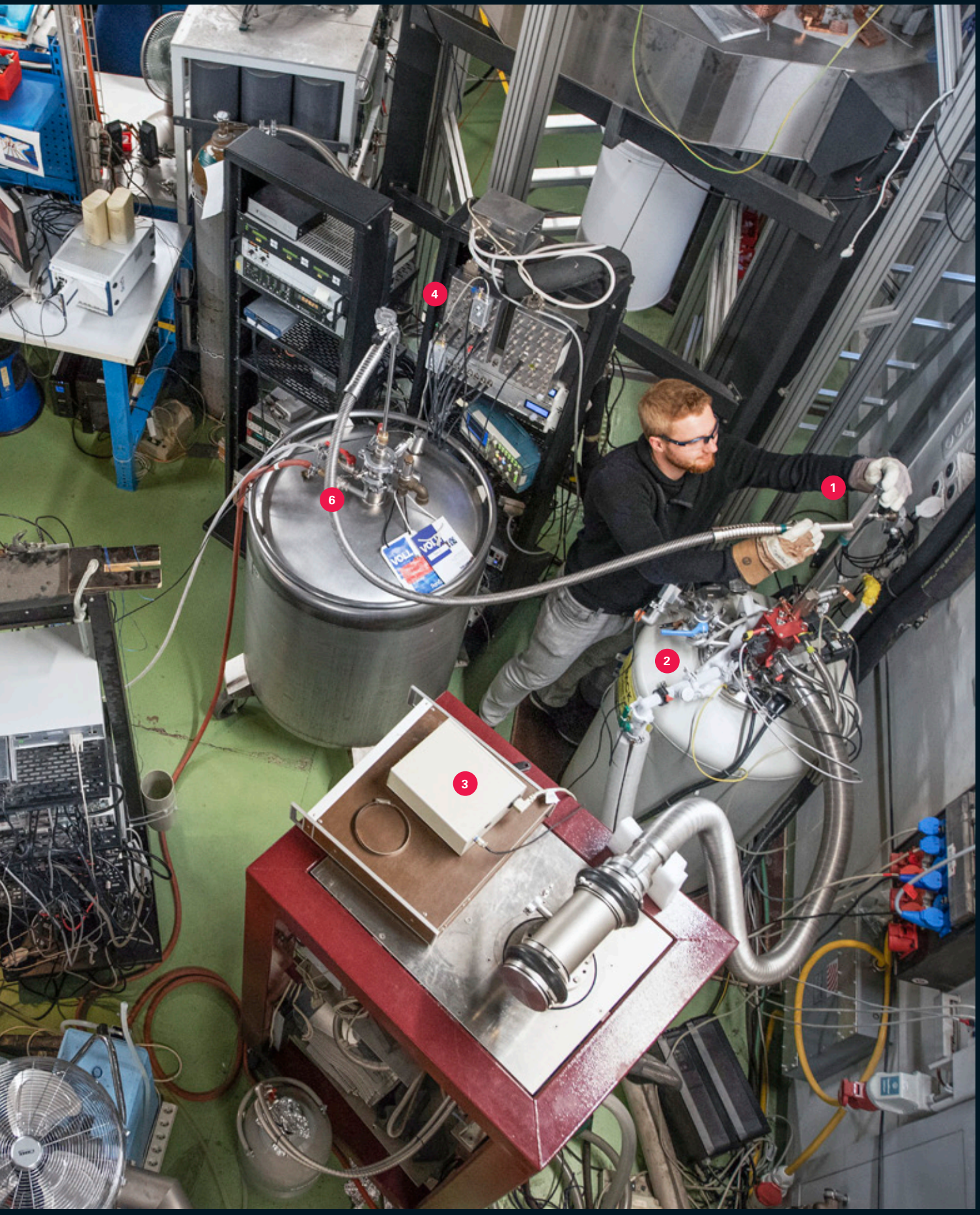
Photo: Christian Flierl

Dr. Andreas Kuhlmann is a Georg H. Endress Fellow and his research topics include silicon spin qubits and semiconductor quantum dots.

Simon Geyer is working on a doctorate on silicon spin qubits at the Department of Physics.

Dr. Leon Camenzind is a postdoctoral researcher and would like to use the spin as a unit of information for quantum computers.

1 Simon Geyer transfers liquid helium at approx. –269 °C into a cryostat. That is the name given to refrigerators that can reach such cryogenic temperatures. Gloves and goggles are required for protection.
2 This cryostat was developed specially for nanostructures and has a piezo-rotator with which the sample can be oriented inside the device. In this way, the magnetic properties of individual electrons or spins can be measured precisely. In this cryostat, an electron spin was kept constant for one minute in 2018, a world record.
3 The pumping cabinet cools the cryostat.
4 Some of the instruments for measuring the electrical signals are developed in-house by the researchers themselves and are now commercially available through the spin-off company Basel Precision Instruments.
5 Leon Camenzind loads a sample into liquid helium with a “dip stick.” The samples are first made in an in-house clean room before being subjected to tests in which they are cooled down to –273.14 °C.
6 Liquid helium vessel in which the cold helium is delivered before being transferred into the experiment.
7 Andreas Kuhlmann is monitoring and analyzing the experiments at the control station.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Complementary medicine, a subject for research and teaching?

Should complementary medicine be the subject of research just like other disciplines?

In a clear referendum result ten years ago, the Swiss people chose to embed complementary medicine in the Federal Constitution as a part of basic healthcare provision that should be promoted. This decision made it law that complementary medicine is part of the basic university training in pharmacy and medicine and is partly paid for by basic health insurance. Throughout Switzerland, thousands of people inquire about complementary therapies in pharmacies and doctors' offices, and many apply such methods. This really already answers the question as to whether we should reject complementary medicine or research it seriously and teach it at universities in an evidence-based way.

Few people know what the term "complementary medicine" really means. Many people think it is the same as homeopathy, a red rag to scientists. It is in fact much more since the spectrum of complementary medicine includes not only homeopathy, but also phytopharmacy, anthroposophically oriented medicine and Chinese medicine (incl. acupuncture). If we look beyond disputed homeopathy, few would claim that, for example, phytopharmacy should not be researched. After all, many highly effective and important drug treatments come from nature. Just think of the pioneering antibiotic penicillin, the immunosuppressive drug ciclosporin or the commonly used acetylsalicylic acid, better known as aspirin. If the scientific community had tried to ban research into natural plant substances in the early days of phytopharmacy, the plethora of drugs available today would be several times smaller and life expectancy would be considerably shorter.

Where does the aversion to complementary medicine in certain circles come from? As I said, the key to this is homeopathy. Its protagonists claim that, even a very strongly dilute solution in which contents are effectively no longer detectable can have a therapeutic effect because the carrier solution still contains energy from the active substance. This is at odds with the current acknowledged fundamentals of physics and chemistry. I, too, struggle with this claim and remain extremely skeptical toward homeopathy until solid proof to the contrary is provided. However, an implausible or irrational hypothesis does not mean that research should be prohibited. We use many conventional drug treatments about which we know neither the cellular mechanism of action nor have good clinical trials, but we are convinced that they are effective for phenomenological reasons. Everybody surely agrees that you should research such active substances further to understand them better.

Christoph R. Meier
is Professor of Clinical Pharmacy and Pharmacoepidemiology at the University of Basel's Department of Pharmaceutical Sciences and has headed the department since 2012.

Seen from this angle, a disputed method such as homeopathy should also be the focus of research, quite apart from other complementary medicine methods that are better grounded in science and not in dispute. Many patients and specialists are convinced of their effectiveness from their own experience, which really should arouse the curiosity of researchers to explore a phenomenon rather than reject it from the outset. Evidence-based research enables factual, scientific discussion outside emotional questions of belief. The only essential aspect is that the most elementary ethical rules of research must be followed: transparent, reproducible and verifiable methods, unbiased objectivity and honesty of researchers and nonselective publication of all research results whether negative or positive. In that case, there is no objection to research into any form of therapy provided someone is prepared to finance it and the accepted ethical rules are followed. ■

Complementary medicine covers a wide range, from traditional herbalism to treatments rooted in spiritual beliefs or philosophies of life. It claims to "complement" academic medicine, which is defined as scientific medicine and demands standards for the effectiveness of a therapy. According to conventional medicine, diseases and their treatments are based on physical, chemical, biological and psychological processes. There are obviously diseases that we do not (yet) understand at a molecular level. For that reason, conventional medicine does also use drugs whose mechanism of action is not yet known. The success of the therapy justifies their use. However, the essential precondition is that this success can be empirically demonstrated. This is done in clinical trials that comply with the accepted standards of the scientific community. Any type of therapy must meet this requirement for empirical evidence of its effectiveness, whether it is regarded as "complementary" or not. It is the task of medical research to conduct and evaluate these studies and this must be done independently of politics, business or interest groups.

For scientific research, there is also the question of the mechanism of action of a therapy. (Bio)medical and pharmaceutical science attempts to discover the molecular causes of diseases and understand the mechanisms of action of drugs, with the aim of improving existing drug treatments and developing new ones. This also applies to fields of complementary medicine such as phytopharmacy, in which plant extracts are examined for their pharmaceutical effectiveness. It is irrelevant whether they originate from traditional folk medicine or were discovered via a different route. Provided molecules produce a reproducible effect, which may be enzyme activities in the test tube, cell cultures and animal models, or human probands, the scientific approach makes sense and can provide new insights.

This approach is, however, obviously not applicable if a preparation no longer contains any molecules of the active substance, as in the strong dilutions in homeopathy. Apart from the fact that no convincing proof of effectiveness, beyond the placebo effect, has been produced to date, attempts to explain the claimed effects on another level of physics have also all failed so far. The suggestion, too, that the solvent water could keep a "memory" of the molecules diluted out, is without any known physical foundation. In the past, phenomena have been disputed by scientists only to be proved later. Yet, such paradigm shifts demand specific and reproducible experimental results and plausible and detailed theoretical considerations. Both are currently lacking for homeopathy and not in sight despite decades of discussion.

A university not only has to maintain scientific and ethical standards but must also consider whether a field of research is interesting, promising and relevant. Are there new experimental or theoretical approaches that promise interesting research and significant progress over the next few years? The university must answer this for itself, independent of its financial backers. At a university, you are allowed to investigate almost everything. In strategic decisions, such as setting up new research groups, however, universities and faculties should concentrate on scientifically interesting, promising and relevant topics. ■

Philipp Treutlein
is Professor of Physics and is currently Dean of Research at the Faculty of Science. He is exploring the fundamentals of quantum physics in experiments with atoms and light and developing new applications in quantum technology.

Trees of relationships.

Photos: Christian Flierl
Text: Reto Caluori

At its base stands the ancestral couple. From there, the tree rises upward, gradually branching out over successive generations and presenting the picture of a thriving lineage. The family tree is a genealogical diagram that was popular in bourgeois families during the 18th and 19th centuries – and retains its appeal up to the present day.

Family trees, whether they be naturalistic, tree-like or abstract in form, suggest that a family can be depicted as a clearly structured web of relationships. Yet since every family tree shows only one of many possible family constellations, it does more than just portray relatedness – it actively produces it.

For the viewer, the time-consuming genealogical spadework involved and the large amounts of data that have to be collated before a detailed diagram can be drawn up remain invisible. So, too, do the decisions about which possible family members ultimately to include in the family tree.

Sources held at the Basel public records office can shed light on these aspects of genealogical practice, however. The historian Fiona Vicent is investigating how local bourgeois families collected and organized genealogical data during the 18th and 19th centuries, what theories and techniques informed this activity, and how the family trees were used.

The Merian family tree traces the family's ancestry back as far as the 15th century. It grows on a hill overlooking the city of Basel, illustrating the family's strong roots in the region.

This diagram showing around 1,000 members of the Burckhardt family almost resembles a database. Dark-blue tips on the leaves denote "pastors and professors", while red ones denote "councilors and magistrates". (right)


Joh. Jacob
Hs Rudolf
M. Salome
Ester
Gertrud.
Samuel
Friedrich
Christoff
Anna
Lucas
Hs Rudolf
Maria
Jac: Christoff.
Theodor
Valeria
Christoff

For this family tree, the silk ribbon manufacturer Lukas Sarasin carried out exhaustive genealogical research, which also extended to his family's connections in France. However, by no means all of his potential relatives were ultimately included in this large-scale chart.


Preiswerk-ischer Stammbaum
entworfen von
Johannes Preiswerk, N.r 10. von Anno 1787 bis 1799

When dealing with large amounts of data, genealogists devised new ways of structuring relationships between many different people. Johann Rudolf Burckhardt used numbers and symbols to organize the more than 600 people, over 18 generations, recorded in his "Stammtafeln", diagrams that show ancestral lines.

In the Preiswerk family tree, too, the focus of attention shifts from the individual to the whole. The family dominates, and those far apart in time suddenly appear very close together. (left)

Were family trees displayed within the home or brought out only on certain occasions? Little is known about how these representative diagrams were used.

Fiona Vicent is a doctoral student at the Department of History and a research assistant for the Sinergia project "In the Shadow of the Tree: The Diagrammatics of Relatedness as Scientific, Scholarly, and Popular Practice". This project, funded by the Swiss National Science Foundation, is investigating the wide range of diagrams that have been used since the Middle Ages to conceptualize kinship and descent.

Tracking metastasis.

Text: Yvonne Vahlensieck

When cancer cells break away from tumors and enter the bloodstream, they can develop into metastases. Researchers at the Department of Biomedicine are investigating precisely how this process works – and developing new concepts for cancer treatment.

Nicola Aceto is an SNSF-funded professor and Head of the Cancer Metastasis Laboratory research group at the University of Basel's Department of Biomedicine and at University Hospital Basel.

Oncological medicine has come a long way in recent decades. Many cancer types can now be effectively treated, provided the tumor is diagnosed early. Once the tumor spreads, however, chances of survival plummet: Around 90% of cancer-related deaths are caused by metastases, which do not respond to conventional treatment methods.

Accordingly, researchers are increasingly focusing their attention on ways to combat metastasis. The fundamental mechanism behind metastasis is clear enough: Cancerous cells break away from the primary tumor and are carried by the bloodstream or lymphatic system to other tissues such as bone, lungs or liver, where they grow into metastases. However, the exact processes at work are still largely unknown. This is why a research group at the Department of Biomedicine has set itself the goal of finding out more about the cells circulating in the bloodstream that give rise to metastases: "If we can find a way to prevent these cells from forming or to destroy them, then we can stop the cancer from spreading and increase life expectancy," says Professor Nicola Aceto, the oncologist in charge of the Cancer Metastasis Laboratory.

Cancer cells on the move

The first step in studying these cells, known as circulating tumor cells, is to isolate them from the blood of cancer patients. This is easier said than done: "A test tube of blood contains some 50 billion blood cells, and just one to ten circulating tumor cells," Aceto explains. However, the tumor cells are a few thousandths of a millimeter larger than blood cells. This size difference gives the researchers a handy way to capture tumor cells: They direct the sample through a maze of increasingly narrow channels onto a microchip. Blood cells pass through the channels unhindered, while the slightly larger tumor cells are caught as if in a trap.

The circulating tumor cells isolated in this way can then be examined more closely using molecular biology techniques. Aceto has also succeeded in

keeping the cells alive and cultivating them in petri dishes, although to achieve this the team had to delve deep into their bag of tricks: The process requires specially coated containers, a particular nutrient solution and a low-oxygen environment. These cell cultures are not just used for experiments – Aceto has hopes for clinical applications, too: "We can isolate the circulating tumor cells in a patient, replicate them and then use the cultures to test a variety of different drugs." In future, this procedure could help oncologists select the most effective treatment, particularly for patients with advanced metastases.

Studying the cells captured by the microchips has yielded numerous new insights over the last few years. For example, mouse models revealed that tumor cells only circulate in the blood for around ten minutes before disappearing again. "We believe that cells are constantly breaking away from the tumor, but most of them never metastasize, as they quickly die or are eliminated by the immune system," Aceto explains. Only a tiny fraction of them appear to succeed in migrating to other sites and forming metastases.

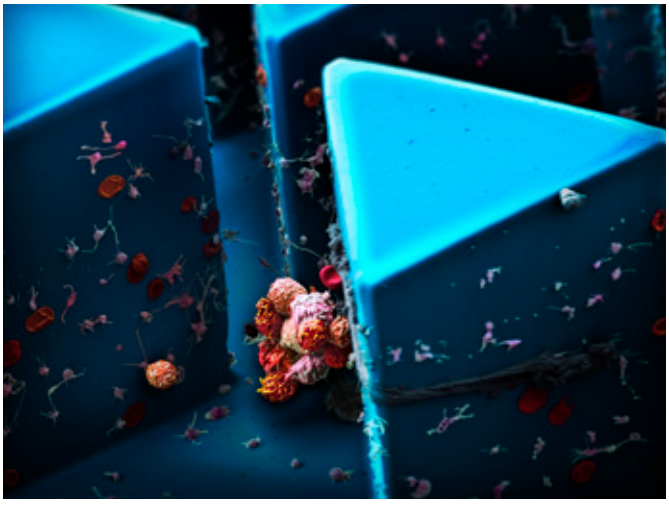
Dangerous clusters

Another key finding was that circulating tumor cells do not always travel alone: They can form clusters of between 2 and 50 cells. These clusters play a key role in the emergence of metastases: In mouse models, circulating tumor cell clusters were found to be 20 to 50 times more likely to metastasize than individual cells. Moreover, in breast cancer patients the presence of these clusters in the bloodstream correlates with low life expectancy. A possible explanation ventured by Aceto is that the clusters are more likely than individual cells to be caught in the blood vessels of organs, allowing them to migrate into the surrounding tissue.

Close examination revealed that the clusters differ from lone circulating tumor cells in other ways, too: For instance, they produce a protein that helps hold the cluster together. Cluster cells also exhibited genetic alterations that activate certain subgroups of genes. This gives the cells properties similar to embryonic stem cells, which are able to multiply indefinitely. This could also be a significant factor in the process of metastasis.

With this in mind, Aceto is searching for substances able to break down the bonds that hold the clusters together, thereby inhibiting their metastatic potential. He has already found at least one promising candidate: By screening drugs that have already been approved, he came across a compound used to treat cardiac arrhythmia that can break up the cell clusters – at least in mouse models. What is more, treating mice with this substance did in fact lead to a reduction in metastases. Aceto is now testing the drug on breast cancer patients in collaboration with clinical oncologists at University Hospital Basel. "For now, however, the goal of the pilot study is simply to show that the concept works in principle," says Aceto, adding that clinical trials and a potential treatment remain a long way off.

In the meantime, Aceto's research group is also working on another unresolved aspect of metastasis – the question of why cells break away from the primary tumor in the first place: "A tumor is made up of billions of cells, and most of them remain where they are. Only a very small number leave the tumor." This is another area in which Aceto sees great potential for future treatments: If cells can be prevented from leaving the tumor, then metastasis cannot occur. ■



Clusters of circulating tumor cells, isolated from the blood of a patient with breast cancer, examined under a scanning electron microscope.

Marathon runner in training:
Photo taken during the Bosnian war, published in 1994.
Photo: Thomas Kern

Images of war.

Text: Michelle Isler

Bridges in ruins, empty streets, people running: A Basel historian asked herself whether photographs from the Bosnian war (1992–1995) share a common visual language. Her findings are revealing.

The way in which a war is portrayed in the media is not a matter of chance. Motifs are chosen, details are singled out, particular settings are emphasized – and others are ignored. Since its emergence in the 19th century, photographic war reporting has followed recurring patterns, many of them inspired by history painting. Nadine Freiermuth Samardžić of the Department of History devoted her dissertation to patterns and peculiarities of this sort in photographic depictions of the Bosnian war. To this end, she examined a collection of around 5,000 photos from German-language illustrated magazines.

Shots fired from windows

And there was plenty to find. One recurring perspective she identified was the camera angle aimed over a gunman's shoulder. Another observation relates to the photographic depiction of war scenes in civil settings, with many photos showing snipers aiming their guns out of office or bedroom windows. The combination of these settings with the "over-the-shoulder perspective" vividly illustrates how the fighting did not unfold on some uninhabited battleground, but in the midst of everyday life. Photographers were never far from the action.

"These photos dominate and are characteristic of the reporting on the war in Bosnia at the time," the researcher summarizes. "These war images, similar to the ones we see today from Syria, are nothing like those from the war in Iraq a short time before." In fact, much of the media reporting on the Gulf conflict, dubbed a "cyberwar", consisted of computer images depicting high-tech warfare. People were rarely shown. "This has the effect of making the Bosnian war seem to belong to a different era. The pictures feature themes reminiscent of the Spanish civil war, or the Second World War: simple weapons, motley-clad militias, ground warfare," says Freiermuth Samardžić.

Shock value

Drawing a connection between these observations and Balkanist and Orientalist discourse, the researcher realized the extent to which existing narratives shape war reporting. These narratives include the myth of the Balkans' backwardness and propensity to violence. Much of the region's cultural heritage was consumed by violence; fighters posed for the cameras as brutal gang leaders wearing balaclavas and displaying skull and crossbones. The media eagerly seized upon these images of primitive societies. "Certain magazines even printed pictures of executions," the historian recounts.

This lack of scruples is revealing of the situation in which press photography found itself in the 1990s. At the time, many German-language magazines were fighting for survival in the face of declining readership. The ethically dubious pictures undermined the enlightened self-image that photojournalism had cultivated over the course of the 20th century, which bore little relation to "shock photos" of this sort.

Focus on Sniper Alley

Finally, in pictures from Sarajevo, Freiermuth Samardžić identified a specific aesthetic in the portrayal of the Bosnian war. The capital city, under siege for 1,425 days, featured prominently in news reports. In particular, the area known as Sniper Alley received worldwide attention, giving rise to a typical motif: people running from sniper fire.

Although the press were not immune to the dangers of the bullet-sprayed street, they could be sure of finding enticing subjects for their photographs there. In Sniper Alley, the "decisive moment" required for a good photo according to Henri Cartier-Bresson was repeatable. For most people in Sarajevo, visiting relatives, fetching water or going to work were all impossible without crossing this main street.

As a result, people venturing onto Sniper Alley were exposing themselves both to the sniper's crosshairs and the photographer's viewfinder. Freiermuth Samardžić found a number of such paradoxes in the photographs of the Bosnian war – such as the anachronism between the brutal war and Europe's modern perception of itself. Aside from the violence, the photos also depicted a city setting with urban architecture and infrastructure. "In this way, they created an experiential world that was easily recognizable to the western media," the researcher explains.

However, this setting is broken by the visible signs of war, such as streets reduced to rubble and burnt-out cars. These dramatic images circulated in the global media – but were never seen by the besieged population of Sarajevo itself. Another paradox: Things that were impossible for locals could be obtained with relative ease by the press, who could arrange to drive or fly in and out of the war zone as they pleased.

Running away from the war

Among the thousands of images she examined, there is one photograph in particular that distils many aspects of her research, says Freiermuth Samardžić. The picture by the Swiss photographer Thomas Kern, published in "Magazin" in 1994, shows a man running in the streets of Sarajevo. The twist: As the caption reveals, the subject is Islam Dzugum, a marathon runner pictured while training. Dzugum would run up to 35 kilometers every day, and had to constantly change his route to avoid the snipers.

"The photographer gave the image a double meaning," the researcher says, explaining that while the picture makes use of the familiar theme of the daily struggle for survival in a city under siege, it also exploits the motif's ambiguity: The story behind the image is not what the viewer expects after seeing countless similar pictures. "In a sense, this man is also running away from the war – though not merely as a victim, but as an active subject: an athlete in a war zone." ■

When fever shuts down the appetite.

Text: Michelle Isler

The negative impact of malnutrition on the course of an illness has been well known in hospitals for a long time. Yet surprisingly few scientific studies have examined the effects of nutritional medicine to date. A recent survey of 2,000 patients is among the first of its kind.

Tuberculosis used to be known as consumption, while the unintended weight loss often associated with Aids is referred to as "wasting". Both terms allude to the loss of appetite caused by chronic illnesses of this kind. Even the fever that comes with a severe case of flu can have the effect of suppressing appetite. For fundamentally healthy people, this is not a cause for concern, but in patients suffering from chronic illnesses the resulting weight loss can be life-threatening.

Defensive reaction

"Up to a third of our hospitalized patients suffering from chronic illnesses are at risk of malnutrition," reports Professor Philipp Schuetz, an SNSF professor at the University of Basel and Head of Internal Medicine and Emergency Medicine at Kantonsspital Aarau. He is also well aware that malnutrition is closely linked to the risk of mortality among those affected. "This has actually been known for an extremely long time – as far back as Hippocrates!"

This loss of appetite can be explained in biological terms: The body initiates an inflammatory response to fight the disease, breaking down proteins in the body that no longer function properly. Furthermore, to expedite the process of cell detoxification, the body shies away from food intake: Patients lose their appetite. Although this is not a new finding, Schuetz is among the first researchers to examine the role of nutritional medicine in a large-scale study.

"Like a faith war"

Physicians have yet to agree on whether – and how – to deal with appetite loss in hospitalized patients, Schuetz explains. While there have been some indications that tailored nutrition strategies can improve patients' condition, evidence-based studies are lacking, he says. The result is that debate on the issue has turned into something of a faith war.

According to Schuetz, some experts believe that the best approach is to concentrate on treating the underlying illnesses, upon which the patient's appetite would return of its accord, while others argue that nutrition plays a crucial role in the healing process, and should therefore be the primary focus. On the other hand, in the last few years in particular physicians have come to realize that an excess of additional calories can cause a substantial deterioration, particularly among acutely ill patients in intensive care. "It is a contradictory situation overall," Schuetz concludes. "Fundamentally, people need more calories when they are ill, as the body needs more energy to recover. At the same time, however, it shuns food, which seems paradoxical."

A complex – and not very profitable – issue

Does this complexity explain the scarcity of large-scale studies? "Nutrition is a complex and highly specific area," Schuetz replies. However, he believes other factors are at play too – not least among them funding. "Research is invariably expensive, and the pharmaceutical indus-

try is obviously not going to be very interested in studies about food that don't lead to patents and expensive products. Nutrition is often regarded as a complement to therapy, not a form of therapy in its own right."

The results of Schuetz's study could now mark the beginning of a shift in mindset. By examining data from around 2,000 subjects, he succeeded in showing that tailored nutrition has a beneficial impact on chronically ill patients in hospital. "The study was very well received in expert circles," he reports. In concrete terms, it showed that malnutrition is a modifiable factor in the course of an illness. In other words, "the study taught us that tailored nutrition strategies are an effective tool to combat dangerous weight loss and some of the associated complications and mortality."

Inflammation as a key factor

Since the study, Schuetz has gone a step further with his research: "We asked ourselves whether there might be subgroups within the study that responded particularly well to nutrition therapy," he explains. His conclusion was that not all patients benefit equally from tailored nutrition. "For those with very high levels of inflammation, this form of treatment didn't help much. Meanwhile, we observed significant positive effects among patients in which inflammation was less severe, or had already subsided."

These results might also explain why earlier studies yielded partially contradictory results, as they failed to take this distinction into account. In any case, Schuetz is quite certain that inflammation is one of the primary factors influencing the effectiveness of nutrition therapy. He hopes that his results will ultimately lead to increased acceptance for therapy based on tailored nutrition, and help it to become more widely established. "Of course, it is also a question of resources," the physician points out, "which makes it all the more important to know whom this kind of therapy can benefit."

Empowering patients

The therapeutic approach studied by Schuetz has a key advantage: It does not involve medication. He explains that his patients often ask what steps they can take to support their recovery. Their options are not limited to popping pills: "Nutrition is something that patients can take charge of themselves," he explains, adding that it is also a way for relatives to become involved in the healing process.

Schuetz predicts that "the problem of malnutrition is likely to become more serious as society ages." Considering that we have known about it for thousands of years, and the fact that food is a relatively simple matter, we know remarkably little about it, he observes. Accordingly, he believes that nutrition therapy has a great deal of untapped potential for dealing with deficiency symptoms. "Once we have a better understanding of how this therapy works, we can even apply it preventively – before weight loss sets in. After all: An ounce of prevention is worth a pound of cure." ■

Up to a third of hospitalized patients suffering from chronic illnesses are at risk of malnutrition.

Evolutionary biology

Tropical eels on the hunt for a partner.

Eels spend their adult lives in freshwater and migrate to the sea to mate. Once there, they aren't particularly choosy when looking for a partner and even interbreed with other species, as researchers from the University of Basel have demonstrated through genetic analyses. The researchers studied seven species of tropical eel in the Pacific and Indo-Pacific that emerged up to about 10 million years ago. Despite this extremely long period of time, the researchers discovered a large number of hybrids – that is, descendants of two different species of eel – among the 450 specimens they collected. A large number of hybrids among offspring is unusual and can lead to a decline in the parental species, as their descendants aren't as well adapted to their environment.

Yet, surprisingly, the evolutionary biologist Dr. Julia M. I. Barth and her international research team did not detect widespread intermixing of genomes between the Pacific eels. They attribute this absence to various mechanisms. For one, the combination of species-specific genes results in reduced reproductive capacity in the hybrid descendants. Moreover, harmful foreign genes are specifically removed from the genetic material in a process known as "purifying selection". These mechanisms allow the individual eel species to remain distinct over millions of years despite their indulgent interspecies liaisons. ■

Psychology

Walking and cognition.

Until recently, normal walking – the main form of human locomotion – was viewed as an automated motor task that required only few cognitive resources. Now, however, studies show that walking demands higher-level cognitive processes and that the executive-function components of inhibition, cognitive flexibility and updating of content play a key role. In a new study, researchers working in the Division of Developmental and Personality Psychology at the University of Basel report that updating working memory representations and flexible switching between rules are the most important cognitive processes in walking. The experiment involved 37 adults and 134 children, the latter aged between 8 and 13 years. They were asked to walk across an electronic pathway system several times while simultaneously solving various cognitive tasks. The researchers were able to show that walking primarily requires working memory capacities and cognitive flexibility given that cognitive and motor performance showed the greatest decline in these tasks when switching from single tasks to dual tasks. Overall, the study – which was carried out by the research group led by Dr. Wenke Möhring – found remarkable similarities in the performances of children and adults. In addition to the theoretical value of these findings, the results also have practical implications for developing effective interventional programs. ■

Public Health

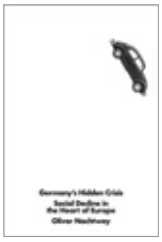
Technologies for dementia

The financial burden and the level of specialized care required to look after older adults with dementia has reached the point of a public health crisis. In the face of this challenge, intelligent assistive technologies (IATs) represent a remarkable and promising strategy to meet the need of persons suffering from dementia.

These technologies aim at helping individuals compensate for specific physical and cognitive deficits, allowing them to maintain a higher level of independence at home and in everyday activities. However, the rapid development and widespread implementation of these technologies are not without associated challenges.

This volume provides an authoritative and comprehensive overview of how IATs are reshaping dementia care. Besides delineating the current landscape of intelligent assistive technologies, the authors also analyze and address the major psycho-social implications linked to the development and clinical use of IATs. In addition, essays examine the major ethical, social and regulatory issues associated with the use of IATs in dementia care. ■

Eds. Fabrice Jotterand, Marcello Ienca, Tenzin Wangmo, and Bernice Elger
Intelligent Assistive Technologies for Dementia. Clinical, Ethical, Social, and Regulatory Implications.
Oxford University Press, 2019
320 pages, GBP 52



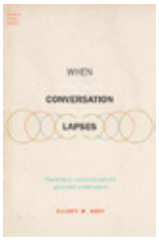
Neoliberalism

Social decline in Germany

Upward social mobility represented a core promise of life under the "old" West German welfare state, in which millions of skilled workers upgraded their Volkswagens to Audis, bought their first homes, and sent their children to university. Not so in today's Federal Republic, where the gears of the so-called "elevator society" have long since ground to a halt. In the absence of the social mobility of yesterday, widespread social exhaustion and anxiety have emerged across mainstream society.

Focusing on the case of Germany, Oliver Nachtwey offers a detailed account of the crisis of contemporary capitalism. Moving at the forefront of leading theories of political economy, he analyses the reasons for this social rupture in postwar German society and investigates the conflict potential emerging as a result. Nachtwey concludes that although the country has managed to muddle through thus far, simmering tensions beneath the surface nevertheless threaten to undermine the German system's stability in the years to come. ■

Oliver Nachwey
Germany's Hidden Crisis. Social Decline in the Heart of Europe.
Verso Books, 2018
208 pages, GBP 42



Social Interaction

Silence in conversations

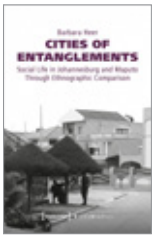
Silence takes on meaning based on the contexts of its occurrence. This is especially true in social interactions: Consider the difference between silence after "lemme think," and silence after "will you marry me?"

This book examines a particular form of silence, the conversational lapse. These regularly appear in conversations when all interactants pass up the opportunity to speak. What are these silences for the participants who, by virtue of not speaking, allowed them to develop?

Elliott M. Hoey here offers the first in-depth analysis of lapses in conversation. Using methods from Conversation Analysis, the author explores hundreds of lapses in naturally occurring social occasions. Particular emphasis is given to how lapses emerge, what people do during the silence, and how they restart conversation afterwards.

By articulating participants' understandings of when and where talk is relevant, necessary, or appropriate, the research brings into focus the borderlines between talk in interaction and other realms of social life. This book shows lapses to be a particular and fascinating kind of silence. ■

Elliott M. Hoey
When Conversations Lapses. The Public Accountability of Silent Copresence.
Oxford University Press 2020
248 pages, GBP 55



Ethnography

African cities shaped by inequality

How do people live together in cities shaped by inequality? This book aims to present a new narrative about social life in two African cities that are often described as sharply divided: Maputo and Johannesburg. It is based on the ethnography of entangled lives unfolding in a township and in a suburb in Johannesburg, and in a bairro and in an elite neighborhood in Maputo.

Adopting a comparative perspective, the author shows how urban entanglements are based on recurring forms of conviviality which take on distinct forms in both cities. The book includes case studies of relations between domestic workers and their employers, failed attempts by urban elites to close off their neighborhoods, and entanglements emerging in religious spaces and in shopping malls. Systematizing comparison as an experience-based method, the book makes an important contribution to urban anthropology, comparative urbanism and urban studies. ■

Barbara Heer
Cities of Entanglements. Social Life in Johannesburg and Maputo Through Ethnographic Comparison.
transcript Verlag, Bielefeld 2019
340 Pages, EUR 45

Gender and the law.

Why legal gender studies play an important role in democracy and justice.

Text: Sandra Hotz

Neither the Enlightenment in France with its calls for liberté, egalité, fraternité, nor the Swiss federal state of 1848 brought about political and legal equality for women. Texts by the pioneers of the Enlightenment seem innocuous only on the surface: The "free individuals" who came together to agree the treaty were all men. Their aim was to abolish the estates-based society, not gender inequality. John Locke, for instance, understood political rule as a relationship between inherently free and equal men who use the law to secure their private property. This replaced "the rule of the father" with "the rule of men". Back then, human rights were specifically men's rights.

The 1848 agreement creating the Swiss federation was therefore an agreement between men. Although the Federal Constitution stipulated legal equality for "all Swiss citizens," it excluded women from political rights and compulsory military service. Commenting in 1852, Johann Caspar Bluntschli said: "By its nature, the State is so decisively male in character that women can only indirectly participate in it. A woman's calling does not direct her toward public life in politics, and her natural characteristics do not qualify her, neither in peacetime nor in war, for the difficult tasks of the State." Similar statements circulated in the Swiss parliament over a century later, when women's suffrage was being discussed. Today, right-wing populists in Europe draw on the image of a strong male nation.

As a state act of power defined by the participating men, the 1848 treaty confined women and their social needs to the "private sphere" for the centuries thereafter. In doing so, it constructed the gender binarism that would shape relationships, family life and the division of domestic, family and paid work for a very long time. Over half of the adult population in Switzerland could not vote at the national level until 1971. One can therefore say that, up until this point, Switzerland was not a democracy. Since then, the country has certainly become more democratic. Whether people at the time felt this lack of democracy is anyone's guess.

Today, 50 years later, the question of who defines the state's legal framework and decides on our tax and social systems remains one of structural power. Switzerland's 2020 parliament might well have 83 women in the National Council and 12 in the Council

"This leaves a great deal to be desired in terms of progress toward a society free from discrimination on the grounds of gender, gender identity, gender expression and sexual orientation."

Sandra Hotz

of States, but that still means men outnumber them by 56 – a figure that roughly equates to two full school classes. Parliament has undoubtedly become more feminine, but it does not represent the general Swiss population in terms of sex, gender identity, sexual orientation, ethnicity, occupation or age. For instance, no one (or almost no one) who sits on the National Council belongs to the care profession and none are over 80. Scope for children and young people to participate in federal politics is limited to the Jugendsession (Youth Session). Foreigners continue to be excluded.

Many women were involved in the French Revolution – and of course some of these women recognized and called attention to the mismatch between the demands for human rights and the different treatment of the sexes. These voices included Marie Jean Antoine de Condorcet, John Stuart Mill, Olympe de Gouges and Mary Wollstonecraft. The pioneers of legal gender studies never once – and this still applies today – denied "other" human rights. In her Déclaration des droits de la femme et de la Citoyenne, published in 1791, Olympe de Gouges demanded legal and political participation for women: Les mères, les filles, les sœurs, représentantes de la nation, demandent d'être constituées en Assemblée nationale. […] Le but de toute association politique est la conservation des droits naturels et imprescriptibles de la Femme et de l'Homme (Art. 2). Back then, as today, it was about verbalizing the rights of the "invisible" with all their different needs. For de Gouges, for example, it was crucial that a woman should be allowed to talk about having an illegitimate child and that the child could be cared for.

An important issue today is that divorced mothers who are working part-time while also performing unpaid care work should not be allowed to end up in poverty in old age. It is also appropriate to think very carefully about which people will have to provide even more care during the COVID-19 pandemic. How can we identify them, allow them to participate and best protect them? This would also include specific considerations about how scarce protective equipment (masks, glasses, gowns, gloves) can be deployed and to whom. The concept of "individual responsibility in the private sphere" is limited.

Gender law has always been about gender equality for everyone, about solidarity and about highlighting existing imbalances and structural asymmetries of power that the law causes and constructs – and that the law could perhaps equalize and eliminate, but expectations that this will happen should not be too high. An intersectional perspective (one which recognizes that different forms of discrimination can overlap in a single person) could, in the context of medical care during the pandemic, potentially prevent a situation where we exclude and silence the people who are most affected by the situation and only pay attention to those who dare to speak or who can speak, or those who are registered and particularly well protected by the law. These people are usually not the migrants, the refugees or the "sans-papiers" in Switzerland. They are also not those who just happen to end up on the other side when Switzerland closes its borders.

Sandra Hotz
Doctor of Law and a lecturer in private law and comparative law at the University of Zurich, and in gender law at the University of Basel. Her primary areas of research are participation and gender-equality rights in the context of health and family.

It is also no accident that young homosexual men are especially likely to be victims of hate crimes. This is because, as they move into adulthood, their chosen lifestyle is clearly interpreted as a serious risk to society. Equally unsurprising is the fact that the newly expanded anti-racism provision that makes it a crime to incite hate, which the public approved in February 2020, does not include trans people. It is, after all, harder to pin down their lifestyles in stereotypes. In addition, since the provision focuses on individual wrongdoing and sanctions, the social power structures that lead to hate crimes inevitably fade into the background. Yet if we want to achieve gender equality, there absolutely must be an analysis of the underlying structural relations that encourage people to exclude and denigrate others based on their gender identity, gender expression, sexual characteristics or sexual orientation. In March 2020, the Council of States decided that hate crimes against homosexuals should not be registered. All in all, this leaves a great deal to be desired in terms of progress toward a society free from discrimination on the grounds of gender, gender identity, gender expression and sexual orientation.

Too often, equality continues to fall by the wayside, and discrimination is often only visible from an intersectional perspective. Gender law seeks to help solve these problems. ■

"A supercomputer is like a family."

Text: Iris Mickein

High up in the building at Spiegelgasse 1 in Basel is the office of Florina Ciorba, Professor of High-Performance Computing at the Department of Mathematics and Computer Science. It's a far cry from the gloomy basements usually associated with computer programmers. Indeed, with an extensive view over the rooftops of the old town and a child's drawings hanging on the wall, it makes a cheerful overall impression – as does the scientist herself. She's just come from a ladies' lunch that she regularly organizes with her colleagues at the department. "We need more female role models in our field," she says.

Computer science as a key technology

The 42-year-old computer scientist, who speaks five languages, is a sought-after speaker at technology conferences and presented a video highlight at the latest International Supercomputing Conference, in Frankfurt am Main. Ciorba laughs as she recalls that she was visibly nervous during her appearance. Nevertheless, she believes that communication formats of this kind are vital and sees them as part of her mission as an educator. As well as scientific excellence, she also wants to achieve greater visibility for the University of Basel in the area of supercomputing.

Also known as high-performance computing, supercomputing is a subsection of computer science and plays an increasingly significant role in science and industry. It deals with the processing of large and highly complex volumes of operations and data that are so demanding that they can no longer be processed on standard computers. The systems often consist of thousands of computers working on colossal tasks in parallel. Perhaps the most popular application of these "supercomputers" is in weather and climate forecasting, but the gigantic machines have also become indispensable in many other fields – with uses ranging from research into the human genome to crash simulations in automotive engineering and the search for renewable sources of energy.

Ciorba uses high-performance computing to simulate processes in science, especially in the areas of physics and cosmology. "This enables us to investigate questions that we couldn't otherwise tackle – or that we could only explore through laborious real-life experiments. In addition to the hardware, the limits of simulation lie in the huge amount of effort involved in parallel programming." This is precisely what Ciorba's work focuses on: Together with her research group, she is developing methods that allow the efficient control of workflows within computer clusters and the dynamic reallocation of tasks in the event of "traffic jams". For instance, bottlenecks of this kind can occur whenever a cluster is tasked with particularly large or complex calculations and becomes overloaded as a result. Even extremely small errors can have a huge impact in a complex system, and so adaptive algorithms are essential.

Synchronization at night

When she talks about her work, the analogies just keep on flowing: "Actually, every family is like a supercomputer – because every member has a mind and thoughts of their own, like in a distributed system. But it's also a parallel system – because they all live in the same house and fan out into society every day to perform their various tasks before coming home at night and synchronizing with one another. At the same time, it's important to be able to send messages as required: 'Hey, I've finished work,' or 'I'm running a bit late.' The computers do exactly the same thing."

Ciorba is originally from Romania and remembers the early days of the World Wide Web, when she was still at school. She excelled at math and physics from an early age – as well as anything to do with logic – and spent a lot of time in computer labs in the 1990s. Fascinated with the idea of networks, she spent her time working with newsletters and maintaining contacts as pen pals – which is also how she learned English, having spoken only Romanian until the age of 18.

While studying computer science at university, Ciorba spent her Erasmus semester in Greece. "That wasn't actually a particularly rational decision – I just wanted to live somewhere sunny," she smiles. However, she became enamored with the culture and people of Athens. She learned Greek, discovered the world of parallel computing, and decided to do a doctorate. The Greek capital became her second home for six years, followed by research stays in the USA and Germany prior to her appointment in Basel in 2015.

Women in leadership roles

So, what is it about high-performance computing that still excites the scientist after all these years? "The world of parallel systems has so many parallels in the real world – whether it's how we organize our everyday lives or how we manage our families and teams. Of course, computer science is more straightforward than real life, because computers don't have any feelings and don't get ill. But both computers and humans must constantly adapt and optimize themselves to reflect changing circumstances. I find these ideas really fascinating."

High-performance computers have revolutionized science and industry. Computer scientist Professor Florina Ciorba looks at ways of optimizing the interactions between machines. In her work, she also encounters numerous parallels with the real world.

Florina M. Ciorba was born in 1978 and grew up in Romania. She is Professor of High-Performance Computing at the University of Basel. After a degree in computer science at the University of Oradea (Romania), she completed her doctorate on parallelization and optimization techniques at the National Technical University of Athens in 2008 before spending two years as a postdoctoral researcher at Mississippi State University. From 2010 to 2015, she was first a postdoc and then a senior scientist at TU Dresden. Ciorba's research focuses on the use of high-performance computers in basic research, and she is currently working on a project investigating the formation of planets and black holes. She lives in Saint-Louis (France) and has a young daughter.

The first major challenge the scientist faced in her work in Basel was that of leading a research group, which was a completely new undertaking for her. Once again, she found herself on a quest for the optimum solution – and stumbled across the coaching provided by the University of Basel, which really helped her grow into her new role. Does she think management styles differ between the sexes? "I don't think it matters whether you lead as a woman or a man. To me, it seems to be more about your character and willingness to reflect critically on your own management style."

That being said, the professor is certain of one thing: Greater support should be made available to young women in her field. For the last four years, she has therefore been involved in a women's initiative at the department that meets several times a semester. Their aim is to create a forum of exchange and empowerment for female researchers at an early stage of their career. Indeed, Ciorba says she, too, lacked female role models for a long time, adding that her dogged determination may be partly to thank for the fact that she still ended up working with high-performance computers. "I think it's important that we raise our children with a firm conviction that there's no scientific subject or problem that women can't also tackle." ■

Alumnus at work: Tobias Providoli

Team leader at swisstopo.

Interview: Bettina Huber

Tobias Providoli

Tobias Providoli studied geography at the University of Basel and works for the Federal Office of Topography (swisstopo) in Wabern near Bern. He now leads a production team working on the topographic landscape model (TLM) and is also involved in AlumniGeo.

UNI NOVA: Mr. Providoli, how did you come to pursue this career?

PROVIDOLI: After my studies, I completed a graduate internship in the TLM process at the Federal Office of Topography, where the staff are building a 3D geodata set for Switzerland and Liechtenstein. High-resolution aerial images are used to stereoscopically record a large number of natural objects – such as forests, lakes, glaciers, watercourses and individual trees – and man-made objects (such as buildings, streets, railroads and bridges). My one-year internship allowed me to watch my colleagues at work and familiarize myself with the geodatabase. I have always been interested in aerial images and really enjoyed capturing objects in 3D, so I applied for a project manager position. More and more people were being hired to help build the TLM and the existing production teams were becoming bigger and bigger, so another production team was eventually established. I've been managing this team since 2014.

UNI NOVA: How did your studies at the University of Basel prepare you for this career path?

PROVIDOLI: The geography program covers a wide range of topics and students have a lot of flexibility to choose what they study. They are given the opportunity to specialize at an early stage, in addition to the compulsory lectures of the initial semesters. I soon realized that I enjoy working with geodata in Geographic Information Systems (GIS). I attended pretty much every GIS course on offer. GIS was also an integral part of my master's thesis, in which I studied the shifting of forest lines in Switzerland and Canada. The knowledge and skills I acquired during my studies were the ideal foundation for my graduate internship at swisstopo and for entering the world of work.

UNI NOVA: What aspects of your studies made a particular impact?

PROVIDOLI: University was a totally new phase of my life. I had lived with my parents while still at school. Before starting university, I moved into an apartment in Basel with my brother and began to cut the apron strings. I learned to be independent and take responsibility. My geography studies included lots of project work, which required independence, self-organization and motivation, as well as team work and good communication. I came to know many of my fellow students very well and friendships developed. Thanks to the modest number of geography students, the atmosphere was very pleasant and almost familial, particularly during my master's. This is where my foundations were laid, and this is why I became involved in AlumniGeo after my studies. It allows me to meet with alumni and other like-minded people. Graduates are spread throughout Switzerland and all over the world, so this provides an opportunity to remain in contact. In today's fast-paced world, I think this is extremely important. ■

New organization

Launch of AlumniPharmazie.

Text: Bettina Volz-Tobler

AlumniPharmazie, a new specialist alumni organization that is long overdue, will be launched at the alumni general assembly in June 2020. This process has been driven by the executive board of the Basel Pharmaceutical Society (Pharmazeutische Gesellschaft Basel), which has been around for almost 100 years.

The Basel Pharmaceutical Society was launched in 1921 by dedicated community pharmacists. To this day, it offers specialist lectures, continuing education, seminars and tours for members and non-members and boasts many years of experience in continuing education and professional development. It has been officially recognized as a training provider by the Swiss Pharmacists Association (pharmaSuisse) since 2002.

Tradition and innovation

To attract more University of Basel pharmacy graduates and maintain their contact with the alma mater, the executive board of the Pharmaceutical Society has decided to set up a specialist alumni group under the auspices of AlumniBasel. Members are to be provided with specific training services and access to AlumniBasel's many activities and member perks – not to mention more opportunities to communicate, the online members' platform, various social events, networking opportunities and member benefits, all of which are offered as standard by the AlumniBasel umbrella organization.

Basel has a long tradition of pharmaceutical sciences, which for some years have been boosting innovation to international acclaim: In July 2019, the Department of Pharmaceutical Sciences at the University of Basel moved into the top 50 of the Global Academic Ranking. In the same year, two endowed professorships funded by Vifor Pharma were announced in the field of nanopharmacy. The Vifor Pharma Group's funding commitment of CHF 10 million over ten years aims to establish nanopharmacy research at the University of Basel and support the training of specialists in this field. Who knows whether the 60 or so Basel alumni working for Vifor Pharma played a role in the board's decision …

Two new endowed professorships

The two new professorships in Nanopharmaceutical and Regulatory Science aim to establish an internationally renowned excellence platform for the development, approval and application of nanopharmaceuticals and the training of specialists in this field. Pharmaceutics will play a major role in the University of Basel's domestic and international standing, and we hope that the pride this inspires in alumni will help AlumniPharmazie to prosper. Members can register online at alumnibasel.ch. ■

New publication

The memoirs of Dieter Imboden.

Dieter Imboden, an environmental researcher and political scientist who spent much of his childhood in Basel, is a past winner of the Alumni Award. He recently published his autobiography.

The 2017 Alumni Award winner Dieter Imboden has just published his memoirs in book form. Becoming a renowned environmental researcher and political scientist was not the result of a carefully laid plan, but when the opportunities arose, he seized them. "Life is largely a matter of chance," he writes early in the book, "but that does not absolve us of the responsibility to mold chance into opportunity."

Studies in Berlin, Basel and Zurich

Born in 1943 in Zurich, he tells the story of little Dieter, growing up in a family of seven in Küsnacht, who discovers a passion for the railway and ponders which gods gave people their identity. When his father, the constitutional and administrative law expert Max Imboden, took a position at the University of Basel, the ten-year-old had his first experience of being different and having to integrate in the city's St. Alban district. Shortly before turning 19, at a time when academic mobility was still a foreign concept, he began a degree in physics in a Berlin recently divided by the wall.

Later, he returned to Basel, where in spite of his own ineptitude on the dance floor he won the heart of a dancer – his future wife Sybil – and completed his degree. Academically, Imboden always followed his own path: "I can clearly remember when, toward the end of my doctorate, I told my colleagues I was giving up theoretical physics to study lakes. What about physics, what about academic rigor, they asked, certain that this decision would scupper my academic career forever."

Letting go and saying goodbye

It didn't turn out that way. Convinced of the importance of interdisciplinary research and undeterred by pushback from the established disciplines, the limnologist and a handful of colleagues founded the new degree program in environmental sciences at ETH Zurich. Their visionary concept made ETH one of the world's leading universities for interdisciplinary environmental studies and research. Imboden became a professor of environmental physics, and went on to head the new department. From 2005 to 2012, he played a part in shaping research policy in Switzerland as President of the Swiss National Science Foundation (SNSF) research council. Imboden recounts all of this openly and self-critically, with no trace of vanity. He also writes of his time at the head of the "2000-watt society" project in the ETH Domain, a position he relinquished after two years as he felt that the idea was ahead of its time, and that his efforts were being blocked by disputes among the institutions.

Work isn't everything, however: The reader also learns how Imboden and his wife succeeded in reconciling their careers with family life, raising two children in an era before nurseries and day schools. Or how the couple and their dog navigated the rivers and canals of Europe for years in their own boat. Finally, the book is about letting go and saying goodbye to friends. Imboden describes the importance of realizing that "more and more goodbyes will be forever, even though we can – fortunately – never know which." A profound and humorous book that encourages the reader to embrace their own transience, and marvel at how much can be packed into just one life. ■

Dieter Imboden, Zugefallen – Ein Leben zwischen Menschen, Wissenschaft und Umwelt, Zytglogge Verlag, 2020.

Letter from Paris

An ambassador for German scholarship.

Thomas Maissen studied history, Latin and philosophy at the University of Basel, where he received his doctorate in 1993. He has been a professor at the University of Heidelberg since 2004 and Director of the German Historical Institute in Paris since 2013.

When I finished university, why did I not stay in beautiful Basel, like most of my friends, where I could spend the summer drifting down the stream? Instead my wife and I did the one thing you should never do: Because of her job, we moved to beautiful Zurich, of all places, where I wrote my postdoctoral thesis and many historical articles for the "Neue Zürcher Zeitung". Someone who is prepared to abandon Basel for Zurich must be capable of anything – and so it was that in 2004 we answered the call to move to beautiful Heidelberg. When our four children heard about the plan, they burned a German flag in our garden. In 2013, they were again unimpressed when we decamped to beautiful Paris. Now they are all at university – in Germany.

It is this Germany that I now represent at the German Historical Institute in Paris (DHIP), with just under 40 other colleagues. Like its sister institutes in London (1976), Washington (1987), Warsaw (1993) and Moscow (2005), the Paris institute, established in 1958, has its roots in the politics of reconciliation following World War II. The idea was that historical research in and with these states should create a new basis for shared understanding. Initially this was achieved by focusing on medieval topics, rather than the controversial area of contemporary history. However, the hosting of a major international conference at the DHIP and in Versailles to mark the 100th anniversary of the Treaty of Versailles in 1919 shows just how much common ground has been built up within scholarship and between researchers over recent decades, not just on methodology but in terms of their findings. Collaborations of this kind have become a matter of course normal and the fruits are reflected in the German-French History published by the DHIP, which will be completed shortly and consists of eleven volumes running from Charlemagne's coronation as emperor up to the present day.

With its aim to bring historians together largely achieved, during my tenure the institute has placed a renewed focus on the internationalization of Germany's humanities and social science sector, which is a policy priority for the German Federal Government. In concrete terms, this means that the institutes that make up the Max Weber Foundation are continuing with their previous bilateral mission but also becoming active in new regions. With German, French and Senegalese partners, we have established a joint research project in Dakar, to conclude in 2021. As part of this project, a dozen doctoral students and postdocs are studying the bureaucratization of African societies. Our focus will then shift to Ghana, where with the universities of Legon (Accra), Freiburg, Frankfurt and other partners we are setting up a Merian Institute for Advanced Studies in Africa, which up to 2030 will be dedicated to the topic of sustainability. So if you do leave Basel, you may find a wealth of exciting things to discover in beautiful Africa. ■

A Basel historian in Paris: Thomas Maissen.

Sandra Schlumpf-Thurnherr
is Assistant Professor of Ibero-Romance and General Linguistics at the Seminar for Ibero-Romance Linguistics and Literary Studies at the University of Basel. Her research focuses mainly on the language of the Sephardic Jews (Judeo-Spanish) and the Spanish language in Africa. She is currently working on her postdoctoral thesis, which deals with the sociolinguistic position of immigrants from Equatorial Guinea in Madrid.

Sandra Schlumpf-Thurnherr

Address unknown (1938) by Kathrine Kressmann Taylor.

"It describes the dramatic collapse of an old friendship as a result of political turmoil."

I like reading thick books that are so exciting that I can hardly put them down – books like Julia Navarro's bestselling novels or Carlos Ruiz Zafón's tetralogy. I'm especially fond of paperbacks, as they're not too heavy and I can read them lying on the sofa. But a story doesn't always have to be really long to be compelling and leave a lasting impression. That was my experience with this book. In just under 60 pages, it describes the dramatic collapse of an old friendship as a result of political turmoil. I'm reminded of the situation in Catalonia today, where families and friendships are breaking up because of the deep political differences between opponents and supporters of independence – in most cases, fortunately, without bloodshed.

In "Address unknown", which takes us back to the 1930s, things play out differently. In letters exchanged between the book's protagonists, Max Eisenstein in San Francisco and Martin Schulse in Munich, we see both sides, at first, expressing concern about the increasingly hate-filled situation in Germany. The story reaches a tragic climax when Max's sister returns to Berlin and is forced to seek refuge from antisemitic persecution. She comes to her old friend Martin looking for help, but he turns her away at the front door, with Nazi stormtroopers in hot pursuit. Could he have reacted differently without losing his beloved wife and young son Adolf, his standing in Aryan society or his own life?

The letters between Max and Martin become shorter and shorter and increasingly distant in tone – either by choice or in response to the censorship that is ever-present. How does our Jewish protagonist in California react? Can he fight back against what is occurring in his homeland? What happens when he appropriates the enemy's mechanisms of control? Today, too, our lives are shaped by political circumstances. Attacks on synagogues are frequently in the headlines once again and we see populist forces on the rise in many places, raising the question of what can be done to fight extremism. This slim volume provides a personal and moving insight into a well-known period of German history, as well as important food for thought about issues that are more relevant today than ever. ■

Welcome to Sci Five.

The University of Basel's
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University of Zurich[UZH]

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