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Bulletin

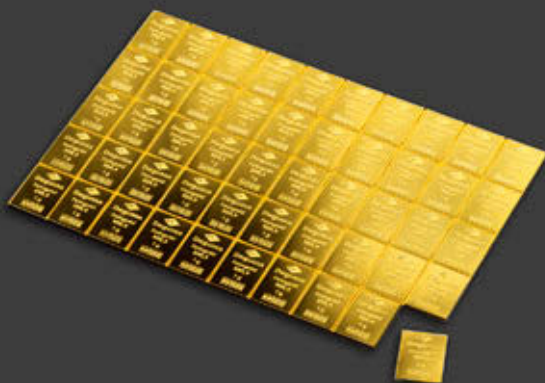
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Visionaries

Conversations with Exceptional People



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MANY DIFFERENT PATHS LEAD TO A VISION

CONVERSATIONS WITH EXCEPTIONAL INDIVIDUALS

If the protagonists in this edition of Bulletin were to meet and discuss the question of how one becomes a visionary, their conversation might sound like this:

“I don’t like experience,” says **RICHARD SAUL WURMAN** (page 41), inventor of the TED conferences and the author of around 90 books – adding: “If I knew how something was going to go, I wouldn’t do it.” **ROGER FEDERER** (page 6) is familiar with the problem: “If I had to play every match in the same way, it would be boring.” Federer says he disliked having to practice the same tennis strokes over and over at the start of his career. It was only when his former coach lectured him about the importance of training (“You just have enough talent to get into the top 100 for a week”) that he accepted that hard work was vital to achieve success.

Next, **JANE GOODALL** (page 44) explains how important it was for her career not to be part of the academic elite: “At university, someone would have told me at a point in time when I was fairly young and impressionable that animals don’t have personalities, intelligence or feelings.” Goodall, who is today the world’s most renowned researcher of primates, fears that she “perhaps would have believed it”

and never challenged the status quo in her field of expertise.

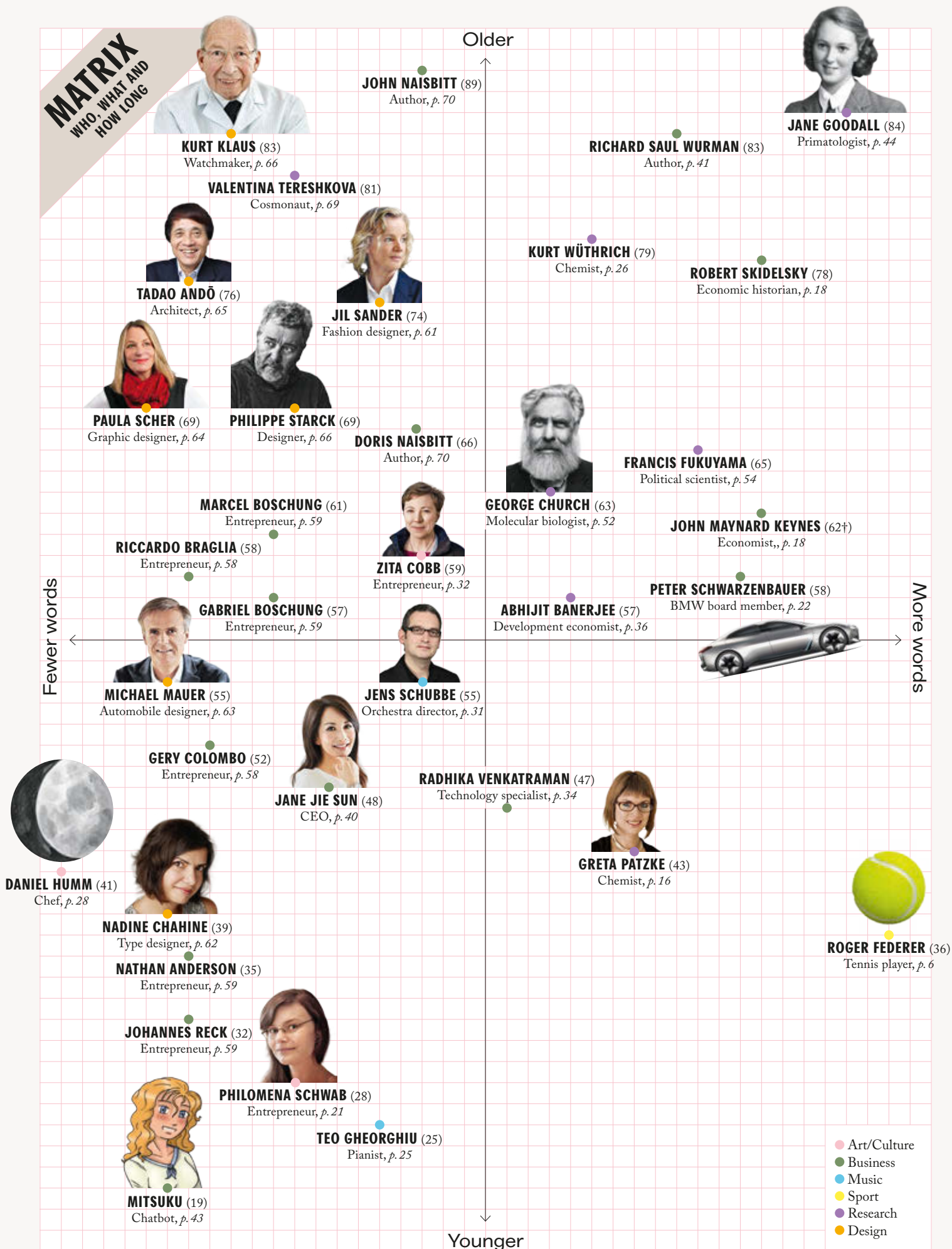
“Technically speaking, Keynes would hardly be regarded as an economist today,” says **ROBERT SKIDELSKY**, the biographer of John Maynard Keynes, the “most influential economist of the 20th century” (Frankfurter Allgemeine Zeitung). Keynes (page 18) only attended a few lectures on economics and – like Goodall – went on to develop his own groundbreaking views outside existing schools of thought. The situation was different again in the case of the Swiss Nobel laureate **KURT WÜTHRICH**, a former ski instructor and forester. It was more or less by chance that he came to focus on his area of expertise (page 26): “I’ve done so many different things, it really didn’t have to be chemistry.”

Many different paths lead to a vision. And today, it is as important as ever – without a vision, there can be no progress, no innovation and, ultimately, no growth. We hope you enjoy reading our 30 conversations with these exceptional individuals. And who knows – maybe this edition of Bulletin will provide inspiration for your own visions.

Your editorial team

MATRIX

WHO · WHAT AND HOW LONG



CONTENTS

“HOW WILLING ARE YOU TO WORK HARD?”

ROGER FEDERER on Roger Federer.
● p. 6

“CREATIVITY COMES FROM PRACTICE”

The researcher GRETA PATZKE wants to conclusively solve the global energy problem. ● p. 16

“MORE THAN AN ECONOMIST”

Robert Skidelsky on JOHN MAYNARD KEYNES. ● p. 18

“I PLUNGED INTO THIS STRANGE NEW WORLD”

Switzerland's PHILOMENA SCHWAB is a rising star in the gaming world. ● p. 21

“MOBILITY IS PART OF OUR DNA”

PETER SCHWARZENBAUER, a member of the BMW Group's management board, on the future of mobility. ● p. 22

“MUSIC IS A REFLECTION OF LIFE”

TEO GHEORGHIU and passion for the piano. ● p. 25

“IT DIDN'T HAVE TO BE CHEMISTRY”

Nobel Laureate KURT WÜTHRICH on research and chance. ● p. 26

“YOUR MOST VISIONARY DISH, DANIEL HUMM?”

The Swiss chef draws answers to our questions. ● p. 28

“MOZART WASN'T A MASS PHENOMENON”

JENS SCHUBBE on the allure of contemporary classical music. ● p. 31

“A CULTURE OF BELONGING”

ZITA COBB creates a new image for Fogo Island. ● p. 32

“CHANGING INDUSTRIES COMPLETELY”

RADHIKA VENKATRAMAN on the revolutionary technology Blockchain. ● p. 34

“WINNING THE BATTLE AGAINST POVERTY”

ABHIJIT BANERJEE's radical new approach to development aid. ● p. 36

“SEEING THE WORLD WITH THEIR OWN EYES”

JANE JIE SUN on the rise of tourism in China and the country's newfound wanderlust. ● p. 40

“THE DUMBEST PERSON IN THE ROOM”

RICHARD SAUL WURMAN is the mastermind behind TED conferences – but don't remind him of that. ● p. 41

“ASK ME ANYTHING”

A short conversation with the robot MITSUKU. ● p. 43

“ARE CHIMPANZEES EVEN ANIMALS?”

How JANE GOODALL changed our understanding of apes and humans. ● p. 44

“BETTER THAN JURASSIC PARK”

GEORGE CHURCH is reviving the woolly mammoth. ● p. 52

“THE RETURN TO THE PAST”

The great thinker FRANCIS FUKUYAMA'S bleak predictions. ● p. 54

THE SME SURVEY

How Swiss entrepreneurs become world leaders. ● p. 58

MY BEST IDEA

Great designers on their most visionary ideas. ● p. 60

“HOW UNBELIEVABLY BEAUTIFUL”

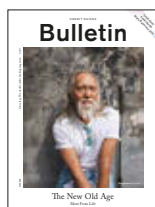
VALENTINA TERESHKOVA, the first woman in space. ● p. 69

“MEGATRENDS?” — “PERFECT!”

JOHN and DORIS NAISBITT on their greatest creation. ● p. 70

WHERE DID I HEAR THAT?

A short quiz about big visions. ● p. 72



Comments

Bulletin "Good News", 3/2017 and "The New Old Age", 4/2017

Good News

"Good News" is really good news!
An excellent idea.

Hugo Odermatt, Gland (Vaud)

Positive Perspective

The topic and the articles are terrific.
I appreciate the positive perspective.
It gave me plenty of food for thought.

Christina Zech, Zurich

Good News Still Exists

I always breathe a sigh of relief when
I get a bit of good news.
It's still out there, just don't let the
media and bad news lull you into
feeling hopeless.

Bruno Bonvin, Crans-Montana (Valais)

An Issue Worth Keeping

Thanks for the "Good News."
Once again a phenomenally designed
magazine, and one that already has
a spot in my personal library, hopefully
for the next generations to enjoy.

Hans-Beat Zangerl, St. Gallen

An Old Friend

Like Swiss culture and like the country
as a whole, the Bulletin spreads
rationality throughout the world.
When I see it in my mailbox, it's like
an old friend whose common sense
you greatly value has dropped by.

Víctor López-Veira, Seville, Spain

Time at Last

I have been a customer for 40 years
now, since the company was called
SKA; now that I'm retired, I'm happy
to have finally found time for the
interesting reports and analyses in
the Bulletin.

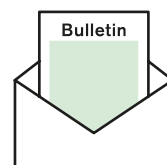
Eilert Busch, Bad Homburg, Germany

The World Is Better Than We Think

I have appreciated and collected
Bulletin for many years. The graphic
design is beautiful, and the content
is compelling.

Luciano Ratto, Druento (Turin), Italy

Service



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INVESTING IN EDUCATION

In Latin America, Africa and Asia, 2.1 million children can now access a quality education thanks to Credit Suisse's support of Opportunity's EduFinance initiatives. Our partnership plays a formative role in empowering parents to send their children to school and enabling teachers to develop low-cost, high-quality learning environments. By supporting access to critical financial services and training, Credit Suisse helps school owners like Regina Githinji, pictured below, give children a chance to break the cycle of poverty by obtaining a good education.

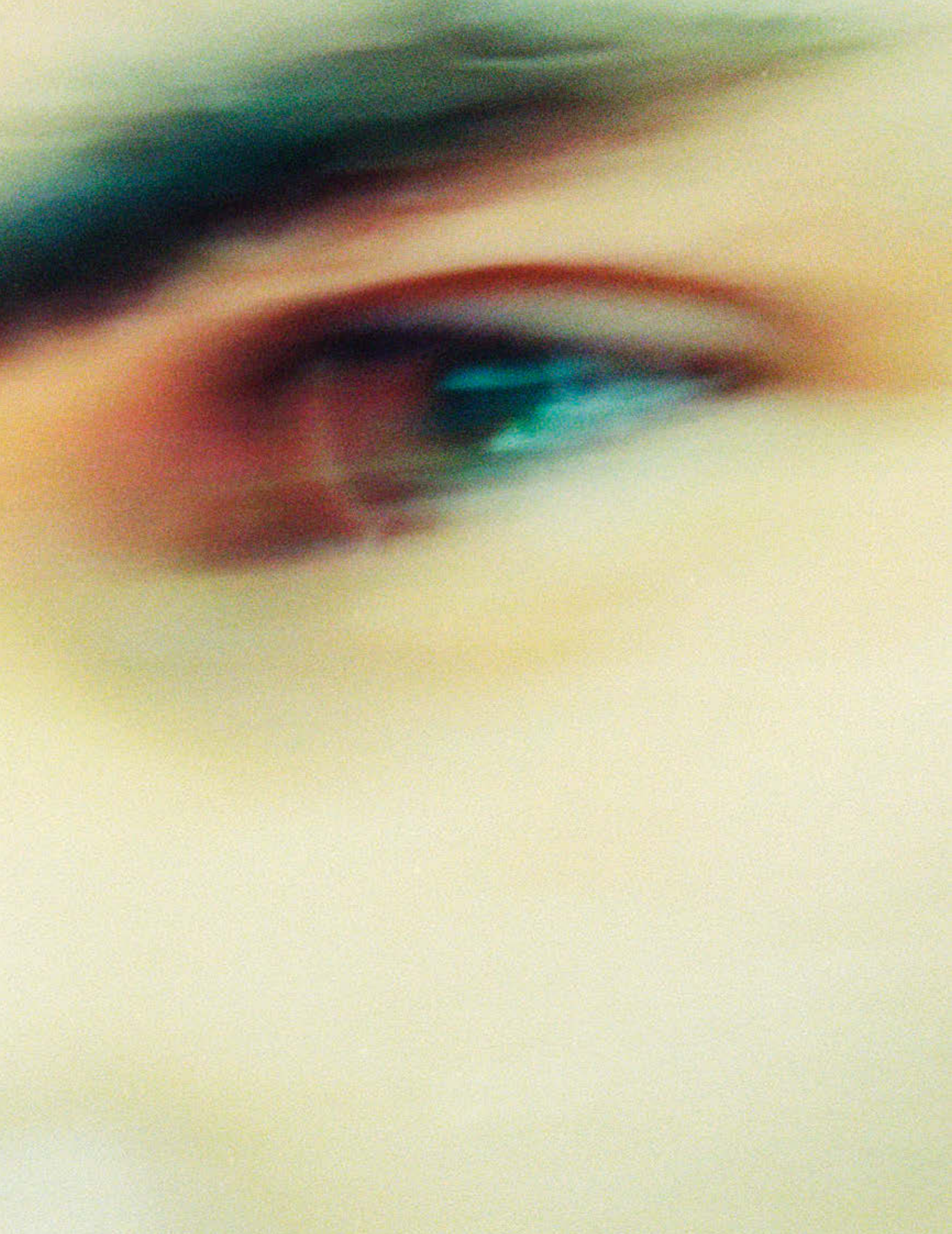
Regina founded the Revelation Ushindi School in the slums of Kenya with just three students. Over the last nine years, she has used a series of Opportunity loans and training to install clean running water, purchase textbooks and food for the children, pay teacher's salaries and maintain her rent payments on the now-large school property that serves 80 students. Regina is one of 10 million Opportunity clients who are working their way out of poverty and, in doing so, are transforming their lives and the communities around them.

Discover more at [opportunity.org](https://www.opportunity.org).





SERVICE: FEDERER



“How willing are you work really hard?”

ROGER FEDERER

on Roger Federer: The great Swiss athlete talks about the long and rocky road that led him to finding himself, about his work in Africa and about what will happen once he has played his last match.

By Simon Brunner

Mr. Federer, in his bestselling book “Outliers,” Malcolm Gladwell says that three elements are present in the lives of nearly all successful people: talent, hard work and luck. Do you agree? That’s probably right.

Let’s start with talent: When did you first become aware that you were better than other people at playing tennis?

The first thing I noticed was that I enjoyed sports in general. Then it became clear that I was good at ball games: tennis and football, but also table tennis, basketball and squash, which I played with my father. I quickly lost interest in everything else. I see the same thing with my sons – they’re crazy about anything involving a ball. My daughters, on the other hand, would rather go swimming, skiing or horseback riding. But what you enjoy the most isn’t necessarily what you’re best at.

So how did your talent show?

I noticed that I learned things very quickly in tennis. Others had to work hard to learn to accelerate the ball, but to me it came easily.

What was it like to realize that having the world’s best drop shot wasn’t enough – that you also had to work hard?

It was difficult. We creative players sometimes worry that monotony will destroy our creativity. We have to force ourselves to practice the same stroke for four hours; it gets

to

boring. I see that on the tour, too, especially with players who are technically talented. The crucial question is this: How willing are they to work really hard?

Why is it so difficult?

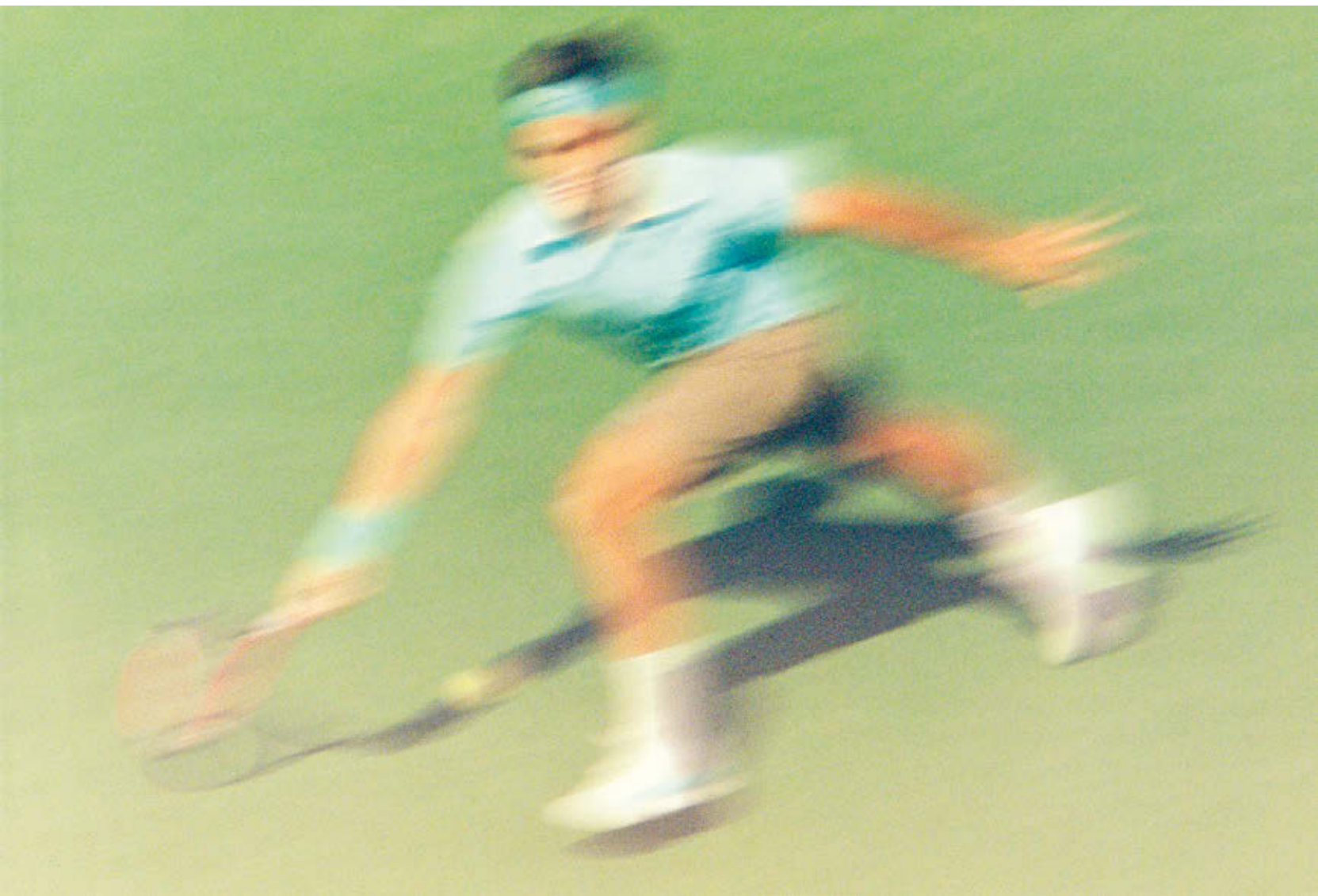
Every ball can be played differently. Short or fast, high or low, with topspin, and so on. It was hard at first to choose the right response for each situation. I would try to dazzle spectators on Court 15, forgetting that my primary goal was to make it to Center Court. If you want to improve, you have to play a simpler game. And simple is boring.

What did you begin to accept the need to work hard if you wanted to have a successful career?

When I was 14, I enrolled in a boarding school for young tennis players in Ecublens, Switzerland, where the training was really intense. Every time I had to do a drill, I would ask “Why? What for?” It finally began to click, not least because my coach told me, “Your talent is enough to get you into the Top 100 for a week. But if you want to go farther and have a long career, hard work is absolutely essential.”

When you were young, were there many players better than you?

Oh, yes. I didn’t become successful as early as Martina Hingis or Tiger Woods did. At international tournaments, I was usually eliminated in the first or second round. >



In Ecublens, too, there was one player who was better than I was at first. But my game took off when I was 15. There have been many forks in the road in the course of my career, and others have taken a different path, deciding that they would rather hang out with their friends than subject themselves to the rigors of professional tennis.

Didn't you ever feel that you were missing out? That you were sacrificing your youth?

No, I was incredibly ambitious. I wanted to be the best – not only in the suburbs of Basel, but in the world. I definitely envisioned a great career – I had the vision “to think big.”

From the very beginning?

Yes. When I was very young, I already dreamed of winning Wimbledon, although I was sure that would never happen. Deep down, however, I think I believed that it might actually be possible. And then things progressed quite naturally. Of course, I was very homesick in Ecublens, I was often sad while on the tour, and I was bored. I wondered what I was doing. But I always knew the answer. I was doing precisely what I wanted to do, no one was forcing me. That's the most important thing of all – to be able to choose freely.

What role has luck played in your career?

I think tennis is less dependent on luck than a sport like football, for example, where the referee decides whether or not to award a penalty. The luckiest thing for me was that I made it from 14 to 20 in good health, despite not living a very professional lifestyle and not taking proper care of my body.

What else is needed for a successful career in tennis?

You need a team – which might include friends, parents, coaches or fellow players. You need people you can confide in, people who will help you figure out what you really want.

I hope to be able to offer that to my children. I want to open up opportunities for them. But ultimately, they're the ones who will have to walk through the door – that was the case for me as well.

Anything else?

Optimism is crucial. If you convince yourself you're not feeling well, the match will often go wrong and you'll lose – simply because of your attitude. It's difficult to overcome a negative mindset, but you have to find a way. Finally, passion is very important. I sometimes wonder whether certain players are playing for the right reasons or just to make money.

What mistakes have you made over the course of your career?

One of my daughters is cautious and meticulous, while the other takes a learning by doing approach to life. I was like that, too. I would test the limits until it inevitably ended badly. I was kicked out of training. I behaved badly on the court – sometimes for no real reason, I just did. I would travel halfway around the world and have no energy when I got to the court. I had no idea where it had gone. For a long time I went through life like a small child, always running up against a wall. I would take five steps forward and then three back. It took a long time for that to change. If there's anything I regret, it's that I didn't realize it sooner. But maybe I'm just someone who needed more time to grow up.

What helped you move forward?

Several things did. The death of my coach, Peter Carter, for one, was a wake-up call. [Editor's note: Carter died in an automobile accident when Federer was 21.] Another one was my wife Mirka's experience – she struggled with a foot injury and eventually had to quit tennis. Both of these experiences made me remind myself, “Be happy, don't complain so much.” Since I've had children of my own, I have also

“I have to be
challenging myself.
everything is

become increasingly aware of all the things my parents did for me. These were key factors in my career.

What advice would you give young players?

It's important to enjoy the game and not to turn pro too early. Many parents start thinking about whether their eight-year-old child should become a professional tennis player. The decision doesn't have to be made at that age! I knew when I was 12 that I wanted to play either football or tennis, and at 14 I had to choose between Basel (football) and Ecublens (tennis). That was early enough!

You often meet other famous people – do you feel a sense of connection?

Let me say, first, that I don't like it when too much of a fuss is made about so-called stars. I try to approach everyone on an equal footing. That's one of the things I appreciate so much about Switzerland. People say, "You're famous? Good for you, but that doesn't mean you can fly." The bottom line is that we're all human beings, and we all live in the same world.

But do you notice certain things that you have in common when you meet successful people?

I certainly notice that they are exceptionally talented, and I try to learn from them. When I have dinner with Bill Gates and he talks for an hour about the most diverse range of topics, I realize how little I know.

What do you share with him?

He wants to know all about tennis. Luckily, that's something I know relatively well (*laughs*).

Are there individuals who have particularly influenced you?

At the beginning of my career, perhaps Michael Schumacher and Valentino Rossi. I had been at the top of the rankings

for a year and was thinking about how incredibly difficult it is to stay there.

So you learned from a car racer and a motorcycle racer that it is possible to dominate a sport for a long time?

Yes. I thought if they could do it, maybe I could too. And I realized what it takes. I have to be constantly challenging myself, especially when things are going well. When I win at Wimbledon, the first thing I need to do is ask myself how I could improve. It can't be that everything is already perfect.

You've repeatedly reinvented your game.

I need new stimuli, for myself as a person, too. If I had to play every match in the same way, it would be boring.

What about now – who tells you when it's time to reinvent yourself again?

Sometimes the impetus comes from me, and sometimes from someone else or from a conversation. Rushing forward to take the return, for example, that was Seve's idea.

[*Editor's note: coach Severin Lüthi*] He suggested it, and I said, "Really, so far up?" "Yes, exactly," he responded. We called this the SABR. [*Editor's note: "Sneak Attack By Roger"*]

Are the changes you make limited to the tennis court?

No – I'll go out to different restaurants for dinner, for example. Or I'll consider whether it's better to stay in a house near the court rather than in a hotel in a city, so that I don't have to spend so much time keeping myself busy in the car. Or I'll plan things differently. The last time I won the US Open [*Editor's note: 2008*], I trained for it in Dubai, with temperatures of up to 46 degrees Celsius. I haven't done that again since our children were born.

Tennis has changed dramatically since you began your career.

What's the biggest difference between now and then? >

constantly
It can't be that
already perfect."

New racquets and new ways of stringing them allow for more topspin, and it's easier to follow through when you hit the ball. That gives you more control at the baseline. As a result, younger players almost always play from the baseline. Volley specialists, who tend to move up to the net, are a dying breed. So the quality of attacks at the net has declined.

But you've been taking that risk more often.

Over the past five years, Nadal, Djokovic, Murray and I have been staying relatively close to the baseline; we play the ball as quickly as possible. That's the way to get to the net. When a ball is short, you go on the attack!

What will world-class tennis look like in the future?

The four Grand Slam tournaments have established themselves over time. That's not going to change anytime soon. It's hard for other tournaments to grow. At Indian Wells, the tournament's owner, Larry Ellison, couldn't believe it: He wanted to increase the prize money, but was told he couldn't because the tournament would then no longer be in the same category. There has been talk occasionally of players forming unions. Is it better for athletes to have more influence? They want a longer off-season, but when they get their wish, they end up playing in more exhibition tournaments, where no world ranking points are awarded. Probably we won't know the answer unless we try it.

You've been directing the Roger Federer Foundation since 2003 and have invested over 36 million Swiss francs, mostly in southern Africa, but also in Switzerland. Your friend Bill Gates once said that his work with his foundation has been more exciting than his work at Microsoft. Would you say the same?

Well, I think you cannot really compare Microsoft with my life as a tennis pro. Definitely, the foundation is very dear to my heart, and I'm learning an enormous amount. Being its president is no easy task. Your work has to be impactful and transparent, and you have to make sure that the people

involved all do their share in order to become sustainable. You also have to decide which projects to invest in. This is the most difficult part for me. I've never really liked to make decisions.

Really?

Yes. I would always say, "Mom, Dad, could you decide for me?" Later on, I could no longer avoid decisions. And now I feel that being able to make my own decisions is a privilege.

Doing good isn't always easy. What are you doing to make sure that your foundation isn't fostering dependency?

We're not trying to change the world by ourselves. We want the people we are helping to recognize and identify their problems, and then to find solutions and put them into practice. We are there to support, inspire and complement their efforts. This is the only way to achieve sustainable, permanent change for children who have the same right to education as anyone else, even if they are living in poverty. The results I have seen so far make me very optimistic.

What will your foundation look like in the future?

Right now the greatest contribution I can make is to do well on the tennis court and bring in money, so that's my priority. When my tennis career is over, I want to be more involved and also do more fundraising. I believe that the foundation is only in its beginning stages. We want to grow in the future. Right now, with an annual budget of 7.5 million Swiss francs we are a smaller boutique operation. We are proud to point out, however, that more than 92 percent of our resources actually go to projects, and only 7.8 percent to administration. We try hard to be very cost-effective.

And now let me toss you a few quick questions. Which would you choose: Another win at Wimbledon, or having your favorite football team, FC Basel, win the Champions League?

Obviously another Wimbledon title would be fantastic.

1 Roger Federer began playing tennis at age three; at the age of eight, he joined the TC Old Boys in Basel.

2 Mirka and Roger Federer at the Louis Vuitton fashion show in Paris in 2016.

3 Partnered with his long-time rival Rafael Nadal on Team Europe at the Laver Cup in Prague in 2017.

4 After the match with Microsoft founder Bill Gates at the "Match for Africa" in 2017 in Seattle.

5 Winning the Australian Open in Melbourne in early 2018.



“It’s
better to
let your
game
grow.”

But FCB winning the Champions League – nothing could beat that!

Do your competitors have some strokes that you’d like to have in your repertoire?

Yes, quite a few! The incredible serves of Isner and Karlovic. Nadal’s forehand, or the backhand of Zverev or Goffin. I also wish I had Djokovic’s legwork on a hard court, and Nadal’s on clay.

You lost five times in a row to Rafael Nadal, and then you won five times. What lessons can you learn from that?

That there are different kinds of planning: short-, medium- and long-term. You can’t let yourself get rattled by what happens in the short term. This is particularly important for young players. They shouldn’t focus on winning or losing. It’s not until you’re grown, and your body is fully mature, that your game needs to be good. Of course, it’s no fun to lose – I used to cry every time I lost, and sometimes I would play it safe so that I would win. But it’s better to let your game grow. Motivation is also important; you can’t let negative experiences interfere with it.

But isn’t it difficult when you keep losing to the same opponent?

It’s okay, it’s okay. It’s about taking it on the chin, like a boxer who gets hit over and over again but doesn’t quit. I sometimes overdo it – which really upsets my father. When I serve to my opponent’s forehand and he fires back to win the point, my response is to repeat the same serve, thinking, “Show me that again.” I’ll keep going until he misses three times in a row. Then I’ll think, “See, it’s not quite that easy.” I don’t want to admit that he can really master the stroke. You have to have a certain amount of stubbornness.

Do you still look forward to playing against Nadal?

You have to look forward to matches like that, even when >



3



4



5



As part of the sponsorship partnership between Credit Suisse and Roger Federer established in 2009, the bank contributes one million US dollars each year to the Roger Federer Foundation (RFF). These funds are primarily invested in an early childhood education initiative in Malawi, which has thus far helped 150,000 children get access to quality preschooling. credit-suisse.com/rogerfedererfoundation

you're in the middle of a losing streak – otherwise, how would you break a bad streak? There was a time when I felt exhausted by the big matches and all the commotion that comes with them – and things would immediately go wrong. Everything you're doing in the off-season, all the practice – it's all in preparation for the big matches. If you're no longer excited, you really have a problem.

Are tennis matches won in the head?

Absolutely. Sometimes you need the right coach at the right time, someone who gives you a wake-up call when you need it. He'll ask you: "Is everything okay? Is everything really okay?" Until at some point you are.

How much of your success is due to your support staff?

One percent? Eighty percent? I can't give you an exact figure, but I've always had great luck with my staff, including my fitness coach, Pierre Paganini. I need them – otherwise I wouldn't have the necessary motivation.

You seem to be a very social person. Is that true?

Yes, I don't like to be alone. Now that I have children, I might perhaps spend half an hour alone with them – but I never carry a hotel key with me, for example, because I know that someone will always be with me.

It's too bad that you play an individual sport.

I agree! You win a match and want to high-five someone – but there's no one there. At the Laver Cup, where we play in teams, Nadal will high-five when you win, and you think, "That's so cool!" I guess that's the way it is every time a football player scores a goal.

Despite your extraordinary talent, your career isn't going to last for another ten years. What then?

I'm really looking forward to enjoying some peace and quiet with my family in Switzerland. As you know, I travel a great deal, and the longer I do this, the more I realize that there's

no place like Switzerland. And I want our children to go to school there.

You spend a lot of time living in the mountains. Why?

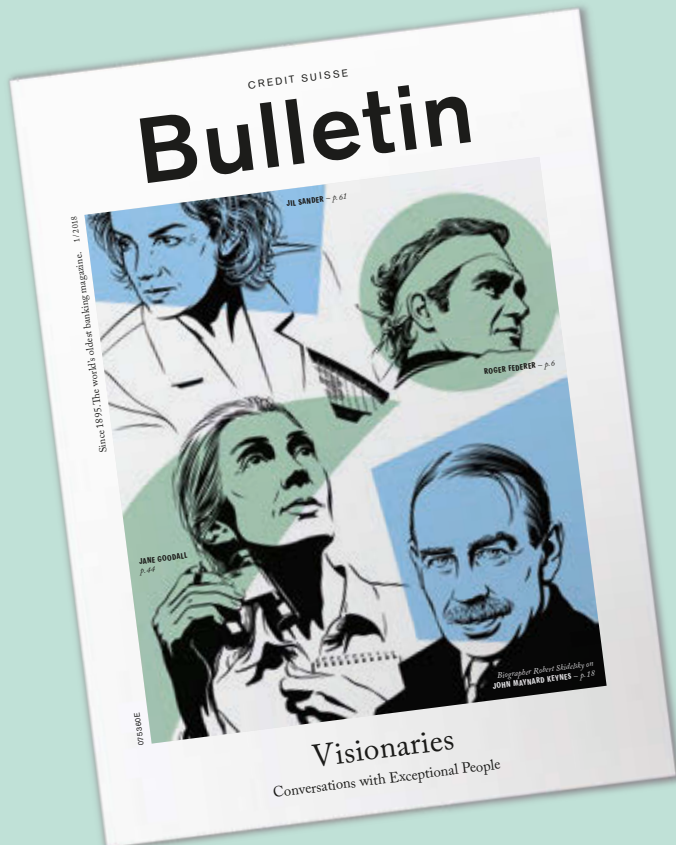
We love it there. It's so quiet and peaceful after spending so much time in big cities. You arrive, and the first thing you do is to take a deep breath. I love the mountains and the scenery.

When did you last go skiing?

In 2008, after losing to Djokovic in the semifinals of the Australian Open. I was visiting friends in the mountains, but while on the slopes I became violently ill and had to be admitted to the hospital in Chur. I was diagnosed with mononucleosis. That was enough skiing for me. I was already 27 years old and didn't want my career to end with a skiing injury. Now I'm the family chauffeur; this year I'm in charge of the boys. The girls are already skiing on the Rothorn. I'm looking forward to getting back on my skis – although to be honest I've always enjoyed the ski lodges and fondue more than the skiing. □

Roger Federer, aged 36, has won 97 singles tournaments in the course of his career, including 20 Grand Slams. He has won 1,144 matches and lost 250. He was number one in the ATP world rankings for 304 weeks and has earned 116 million dollars in prize money. Roger Federer also holds the record for being named World Sportsman of the Year; he has won the Laureus World Sports Award five times. (Statistics as of: March 5, 2018). Born in Basel, Federer is married to the former tennis player Mirka Federer-Vavrinec. They have two sets of twins: eight-year-old girls and three-year old boys.

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“CREATIVITY COMES FROM PRACTICE”

GRETA PATZKE
wants to use sunlight
to produce
hydrogen and solve
the global
energy problem.

By Mathias Plüss (text)
and Henrik Franklin (illustration)

Professor Patzke, your research is seeking to solve the world's energy problem. Will this require significant restrictions on our lifestyle?
No. I want us to be able to maintain the current level of civilization, but without jeopardizing the earth's ecosystems and the ecological balance. My goal is to develop a technology that will enable us to produce truly clean energy from sustainable sources.

How do you propose to achieve that?
With the help of artificial photosynthesis, using sunlight to produce hydrogen through the process of water splitting. Figuratively speaking, we are looking for a magic powder that can be sprinkled onto water – so that when the water is exposed to the sun, it produces hydrogen and oxygen.

Photosynthesis makes it possible for plants to use solar energy. Are you trying to imitate a process that has existed in nature for millions of years?

You could put it that way. But you can't simply take a natural process and transplant it into the laboratory. That would be like removing a person's eye and implanting it into a robot in the hope that the robot would then be able to see. It doesn't work that way. We are trying to develop a technology that is simple, robust and inexpensive, as well as more efficient than natural photosynthesis.

Artificial photosynthesis is considered one of the most difficult challenges in chemistry. Why?

Water is a very stable compound, and that's a good thing. Just imagine going to the beach on vacation, and having the water in the ocean split when the sun shines on it. That would be terrible. For splitting to take place, you need a catalyst, and that's what we're looking for. Actually, we need two – one for oxygen and one for hydrogen. My research focuses on oxygen catalysis. That's the more difficult challenge.

How does such a catalyst function?

We have several different approaches. For the most part we're working with cobalt. Last summer we published a paper about a cobalt complex, a unique molecule that appears to combine all of the desired characteristics. Now we want to study it further. I should point out that the basic criteria for the catalytic process are not yet fully understood. Sometimes it seems as if we're building 100 cars, and two of them are of excellent quality, 48 aren't so good, and 50 are junk – and we don't know why.

So it takes luck?

At any rate, there is always an element of chance. The processes are so complex that it's impossible to monitor all of the variables at the same time.

Do I understand you correctly that it will be not just years but decades before it will actually be possible to use artificial photosynthesis?

If we find a good catalyst, it could go quickly. If not, it may take a while.

Artificial photosynthesis will open up enormous business opportunities – why aren't companies conducting research in this area?

I'm sure the industrial sector will jump in when it sees a major breakthrough. Right now, however, we're still in the realm of basic research.

If we were already at the point where your method could be used to produce hydrogen in a clean and economical manner, what would we do with it?

With a fuel cell, hydrogen can be used to produce electricity. Or it can be used to produce artificial fuels, such as synthetic gasoline. The process is called Fischer-Tropsch Synthesis, and it was already used during World War II.

We already have photovoltaic cells for solar energy. So why do we need artificial photosynthesis?

Photovoltaics is a sophisticated, fascinating technology, but it has a significant drawback: It produces electricity – in order to store the energy, you need a grid.

And that's not the case with artificial photosynthesis?

No, with artificial photosynthesis, you have the hydrogen to work with. This clean technology will definitely have a valuable role to play in places that lack a power grid. In general, moreover, we should avoid relying on a single technology, as we have done with oil and gas.

How did you end up conducting research in this area?

I started from the ground up, learning the basics of nanoparticles and chemical clusters. It was only when I was really up to speed that I said to myself: I want to give back to society. That meant working on future-relevant topics with

practical applications. It wouldn't have been possible without a solid foundation of knowledge.

What are the creative aspects of your work as a scientist?

In my day-to-day life, when I'm spending 10 or 11 hours a day at the university, there tends to be little opportunity for creativity. I'm working with colleagues and staff and helping to manage the institute, writing publications and grant applications, and so on. Creativity comes in the most unlikely situations – in the shower, at the gym or while I'm walking through the beautiful Irchel campus in northern Zurich. That's when I'll suddenly come up with an idea.

Would you compare your work to that of an artist?

Yes, in the sense that creativity doesn't happen in a vacuum, in my experience. I doubt that artists simply walk up to the canvas and start painting. Instead, they make 499 sketches, and perhaps, when they reach the 500th, they'll say, that's it! It's similar in science. Creativity comes from practice.

In 2017 you received the Credit Suisse Award for Best Teaching from the University of

Zurich. What does this award mean to you?

It means a great deal, and I'm incredibly grateful. It recognizes the fact that I'm able to get young scientists excited about chemistry. □

Greta Patzke, 43, studied chemistry in Hanover, Germany, and earned a PhD at the Swiss Federal Institute of Technology Zurich. She has worked at the Department of Chemistry at the University of Zurich since 2007, and has been a full professor since 2016. In 2017 she received the Credit Suisse Award for Best Teaching.

“More than an



economist”

JOHN MAYNARD KEYNES
is considered to be one
of the greatest visionaries of
all time. His theories shaped
economic policy for decades.
And his biographer, the
historian **ROBERT SKIDELSKY**,
even believes that the
Second World War might not
have broken out if people
had listened to Keynes.

By Michael Kroboth

The Frankfurter Allgemeine Zeitung once called Keynes “the most influential economist of the 20th century.” Actually, however, he wasn’t really an economist at all; he had very little training in that discipline...

That’s true. Technically speaking, Keynes would hardly be regarded as an economist today. But at the same time, he was “more than an economist,” as his wife once so aptly put it. His background was in philosophy, ethics and mathematics, and he took a keen interest in art and literature throughout his life. He was a member of the well-known literary circle known as the Bloomsbury Group and a close friend of the writer Virginia Woolf.

Was it the breadth of his intellectual interests that made Keynes such a visionary economist?

Keynes’s perspective on economic issues was very different from that of traditional economists. He thought more in social and psychological terms, and recognized that instinct, emotions and herd behavior had a strong impact on economic life and politics. That he viewed reality differently was evident at the peace negotiations in Versailles after the end of the First World War. Keynes left the negotiations in anger after his warning not to plunge Germany into economic disaster by demanding that it pay huge sums of money in reparations went unheeded.

So Keynes realized that an economic disaster would inevitably lead to a political disaster?

That’s right. If the politicians representing the victorious powers had listened to Keynes, who knows whether Hitler would ever have gained power, and whether there would even have been a Second World War...

Keynes was unable to prevail at Versailles. But it is astounding how much political influence he had, as an outsider and unconventional thinker.

Keynes was an “outsider-insider.” As a member of the British establishment and the son of a lecturer at Cambridge University, he was anything but an outsider. Keynes attended the elite Eton boarding school and subsequently studied at Cambridge. He also worked as a civil servant – first in the India Office, later in the Treasury. This is a crucial point, since while he thought differently, he was never interested in being excessively radical. He refrained from offering proposals that had no chance of being implemented. He was not a revolutionary.

Would it be accurate to say that he was a visionary grounded in reality?

He was an extremely independent thinker who advocated a middle course. He viewed economic issues differently from his colleagues – but not completely differently.

Overall, the interwar period was a time of considerable intellectual upheaval. Economics, too, was filled with new ideas.

Yes, and Keynes was very much involved in the discipline’s process of self-discovery. We mustn’t forget that the Great Depression was the biggest economic collapse in modern times. The world was confronting enormous economic

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problems and equally huge political problems: the rise of fascism and the challenge posed by communism. If the liberal democratic system was to survive, it was necessary to do more than merely acknowledge the existence of mass unemployment and trust the market to set things right.

So John Maynard Keynes, today regarded as leaning to the left, rescued capitalism?

You could certainly make that argument. Traditional economics offered no formula for preventing mass unemployment, or for dealing with it after it had become a reality.

Keynes once wryly remarked that economists should be like dentists, not like leaders of a religious movement. In other words, they should be pragmatic and practical rather than ideologues. How would you describe them today?

I would say that they are more like leaders of a religious movement. They have much more influence now than they had in the past. Policymakers do more or less whatever economists tell them to do. I'm thinking of the power of the central banks and finance ministries, for example, but also of international institutions like the IMF and the World Bank, which were conceived by the "dentist" Keynes. I think many economists are really evangelists who disguise themselves as scientists by creating such complicated mathematical models that it is almost impossible to recognize the assumptions behind them.

In 1930, in the midst of the global economic crisis, Keynes made a prediction that wasn't taken seriously at the time, but that seems much more realistic today. In his essay "Economic Possibilities for Our Grandchildren," he predicted that in a hundred years (by 2030, a year that no longer seems so distant) the standard of living would be four to eight times as high as it was then, and people would be working only 15 hours per week. The first prediction was on target, but the second was quite wrong. How do you explain this?

Keynes underestimated the insatiable human desire for consumption and the level of competition to consume. People don't just want to have enough; they often want to have more than other people do. And he no doubt underestimated the power of advertising, which makes people want even more. We are living in a culture of relentless consumerism – this is at the heart of the Western economies.

But even in wealthy Western countries, many people have to work very long hours just to get by.

Yes, that was something Keynes failed to foresee. He was looking at averages and giving little thought to income distribution. And, of course, he didn't foresee that real incomes would remain as flat as they have over the past 20 or 30 years. Keynes assumed that real wages would rise as productivity increased, which was indeed true until into the 1970s. Since that time, however, wages have not increased to the same degree. As a result, many people are not as free to choose how many hours to work as Keynes would have expected.

So does the old saying that "predictions are difficult, especially about the future" apply even to a visionary like Keynes?

Well, his prediction of the 15-hour week wasn't so terribly off the mark. There has in fact been a significant decline in the average number of hours people work each week, at least in the wealthier countries. Today that number is probably around 30, if calculated properly – that is, taking into account vacations, holidays and, most important, a much longer period of retirement. In any event, people are working far less, on average, than in the 1930s.

Twelve years from now – by 2030 – we may be closer to Keynes's 15-hour work week than we are today. In a highly digitalized economy, a kind of "leisure class" might well emerge; highly skilled individuals, at least, might then have the opportunity for a lifestyle with the freedom to pursue their own interests. But what about the many others?

That's the obvious question: Does Keynes's vision apply only to the "happy few"? Of course, the members of the Bloomsbury Group belonged to that segment of society; they were economically privileged members of the educated classes who used their time for creative and intellectual pursuits. Keynes was talking about freedom to pursue one's own interests, not simply about time off work. However, many people would probably find it overwhelming to be without a structured workday. Naturally, it depends on one's level of education. When we become wealthier, more money is spent on education, and that provides more opportunities for people to engage in creative pursuits.

In the long run, will we all become a bit more like Keynes and the Bloomsbury Group – wealthy, educated, creative?

Keynes discusses this in his essay on "Economic Possibilities for Our Grandchildren." For that to happen, he writes, it will take nothing less than a "general nervous breakdown." In other words, this will be possible only if we dramatically transform working life and the educational system – and that would be far from easy. □



Lord Robert Skidelsky, 78, is an economist and historian, and the leading authority on the life and work of the economist John Maynard Keynes. Between 1983 and 2000, he published a monumental three-volume biography of Keynes, which received a number of awards. Skidelsky has taught at several universities in the UK and the United States. He is also a Fellow of the British Academy, a peer in the House of Lords, and chair of the thinktank Centre for Global Studies.

“I PLUNGED INTO THIS STRANGE NEW WORLD”

Game designer **PHILOMENA SCHWAB** is a rising star in the gaming world. She created a popular game on the topic of genetics.

By David Schnapp

Ms. Schwab, you grew up in Schwamendingen. Last year, as a game designer, you were named on the Forbes list of the 30 most influential people under age 30 in Europe. How did you manage that feat?

I found a way to do what truly interests me, and it includes everything I enjoy: drawing, telling stories, programming and biology. At first I wanted to become an illustrator, then a writer... And now I do some of everything. It's the perfect combination.

Your selection of themes is your trademark.

In your most successful game, “Niche,” the goal is to rescue a species from extinction. What led you to choose genetics as the theme for a game?

Genetics follows certain laws that can easily be translated into the rules of a game. It's like in biology class, where we played “mailman's kid.” Based on blood type, you had to determine who a child's parents were.

Many parents are not particularly pleased when their kids get into gaming – how was it in your case?

I got my first Game Boy when I was nine years old, and immediately plunged into this strange new world. But before long my mother and I made a deal: I was allowed to play for one or two hours a day. It's certainly reasonable to set such limits. For most people, the phase of intensive gaming ends naturally. And ultimately it also depends on how exciting your life is otherwise. *(She laughs.)*

What can children learn from gaming?

A game like “Niche” helps children learn about science – it's about biology, evolution and strategy. Many games also teach empathy, leadership skills and communication. I would even argue that if you can control your clan in “World of Warcraft,” you'll also be able to survive a job as a manager. □

Philomena Schwab, 28, helped to develop the video game “Niche: a genetics survival game” and is a cofounder of the startup Stray Fawn Studio. She graduated from Zurich University of the Arts with a master of arts degree in game design.



“MOBILITY IS PART OF OUR DNA”

Transporter technology may still be far off in the future, but traffic jams in cities will soon be history.

PETER SCHWARZENBAUER,
a member of
BMW Group’s Board
of Management,
on seven mobility
megatrends.

By Steven F. Althaus

First, let’s start with a quote from over 100 years ago: “Automobiles are a passing phenomenon,” said the German Emperor, Wilhelm II. “I believe in horses.” Today, you have to admit that maybe the Kaiser, who was greatly interested in technology, was right from a long-term perspective, and the personal automobile is a passing phenomenon.

You could, of course, accuse me of practicing a calculated optimism, but I’m seeing the exact opposite. Nowhere in the world are individual mobility needs on the decline, and, measured in terms of miles per person, they’re actually increasing. I think the desire for the freedom to be able to go from point A to point B is part of our DNA. And until the day that transporter technology is a reality, we will need hardware to get around.





The study "BMW Vision Dynamics" looks at the future of electric mobility and design.

In addition, autonomous driving represents the next great revolution in mobility.

Revolution? Is the impact of autonomous driving really comparable with the advent of the railroads?

Absolutely. It will allow us to organize transportation in completely new ways. Imagine a large city with no traffic lights or traffic signs, no cars parked on the side of the road. And most importantly, one with no traffic jams. The number of traffic accidents will also decline dramatically. It will entirely change our quality of life and make our cities much more livable. Mobility options will be available throughout the city, and society as a whole will benefit substantially.



You talk about the benefits for society, but millions of people around the world earn their livings driving trucks, buses and taxis. How would you explain to these people that it is better for a computer to drive their vehicle?

You can't view these developments in black and white. New mobility options like autonomous driving will exist alongside current models. I believe that in the long term such changes usually present more opportunities than risks.

Autonomous driving will further boost the sharing economy. People will use cars as individuals, but they won't necessarily have to own one. That doesn't trouble you?

No, we recognized this trend early on, and we established our own carsharing service seven years ago that now has more than one million members. Of course, our primary goal is to sell cars, but we will also play an important role in the overall individual mobility chain of our customers – well beyond personal vehicles. We are now the world's largest provider of innovative digital parking services, and we have the largest network of charging stations in the world. We want to address all of the mobility-related pain points our customers feel and to provide an optimal, individualized mobility offering. >

Sometimes it feels like the world has start-up fever. BMW has invested 500 million euros in a venture capital fund. No other carmaker has made as many start-up deals. Why are you so intent on this external path to innovation?

The car industry is undergoing a significant transformation. The range of topics we now deal with goes well beyond the automotive industry. Start-ups are often used here as an accelerator, especially due to their completely different mind-set. They are accustomed to thinking in quick product cycles, and they tackle issues very differently than a large corporate group does. We have now made about 30 investments, but we looked at well over 1,000 start-ups. But young companies also benefit from our experience and our network as an established, global player. So it's a win-win situation.

In addition to autonomous driving, electrification is the other big trend in the industry. But the German automotive industry is often accused of having missed the "Tesla revolution," just as Kodak missed the revolution in digital photography. How do you respond to that?

I can only speak for us, and at the BMW Group it was clear early on that electric cars could be a solution for megacities, where mobility must be as emission-free as possible. That's why we brought the BMW i3 to market in 2013, soon followed by the BMW i8. We have developed completely new vehicle concepts, and certainly this was one of the boldest decisions ever made in the automotive industry. I think we've done some pioneering things here.

Most major manufacturers now say the future of auto-mobility will plug in to a wall. But electric vehicles sales still account for a low single-digit percentage of overall sales. Why?

In retrospect, it always seems like new technologies like the internet or the radio appeared overnight – but that's not the case. When the telephone was introduced to the market, it took 35 years for just 25 percent of the US population to use one. And don't forget that a car is the second biggest investment a family will make, only following buying a home.

Shouldn't you invest in electric cars?

Oh yes, of course. But we all grew up with

Passenger drones are looming on the horizon.

combustion engines. We are familiar with them, and we feel confident with them. With electric engines, many people are still not sure if things are going to pan out. The discussion about range comes up time and again, although most people don't actually drive very far – this is more of a psychological issue. In addition, the network of electric charging stations is still not extensive enough. Working together with cities like Hamburg, we hope to promote electric mobility by adding a larger number of BMW i3s to our DriveNow fleet while simultaneously expanding the number of charging stations.

Let's turn to the next megatrend: How will digitalization affect cars?

Car manufacturing processes are becoming more digital and more automated – as is the case in many other industries. In addition, digitalization will enable us to have more direct contact with customers. Over the last 100 years, our strategy has relied on large-scale advertisements to attract attention. The digital world allows for a much more focused sales approach. Digitalization enables us to integrate cars more into the digital lives of our customers. They become "smart cars."

As part of the ongoing digitalization process, automobile manufacturers seem to have discovered the CES consumer electronics show in Las Vegas, where the DVD, Tetris and the Xbox were all unveiled. New car models are now introduced there as well. Why?

We are very much inspired by the gaming industry in particular. What do millennials like in video games, and what don't they

like? We try to translate these preferences into our world. You can already experience the new X2 entirely virtually. There are also potential applications in the car's controls and interface.

Next trend: The growth of the middle class in emerging markets?

For a premium manufacturer like the BMW Group, this is obviously a huge opportunity. In connection with the aforementioned technologies, I am very curious to see whether there will be a leapfrog effect, as was the case with mobile phones, where certain countries previously had no landlines, but instead transitioned directly to mobile technology. In the same way, I could imagine certain emerging markets adapting to autonomous driving more quickly than industrialized countries.

Finally, a look ahead: If we meet again in four years, which mobility trends will we be talking about?

Passenger drones are looming on the horizon. Transporter technology probably still needs a little more time. □



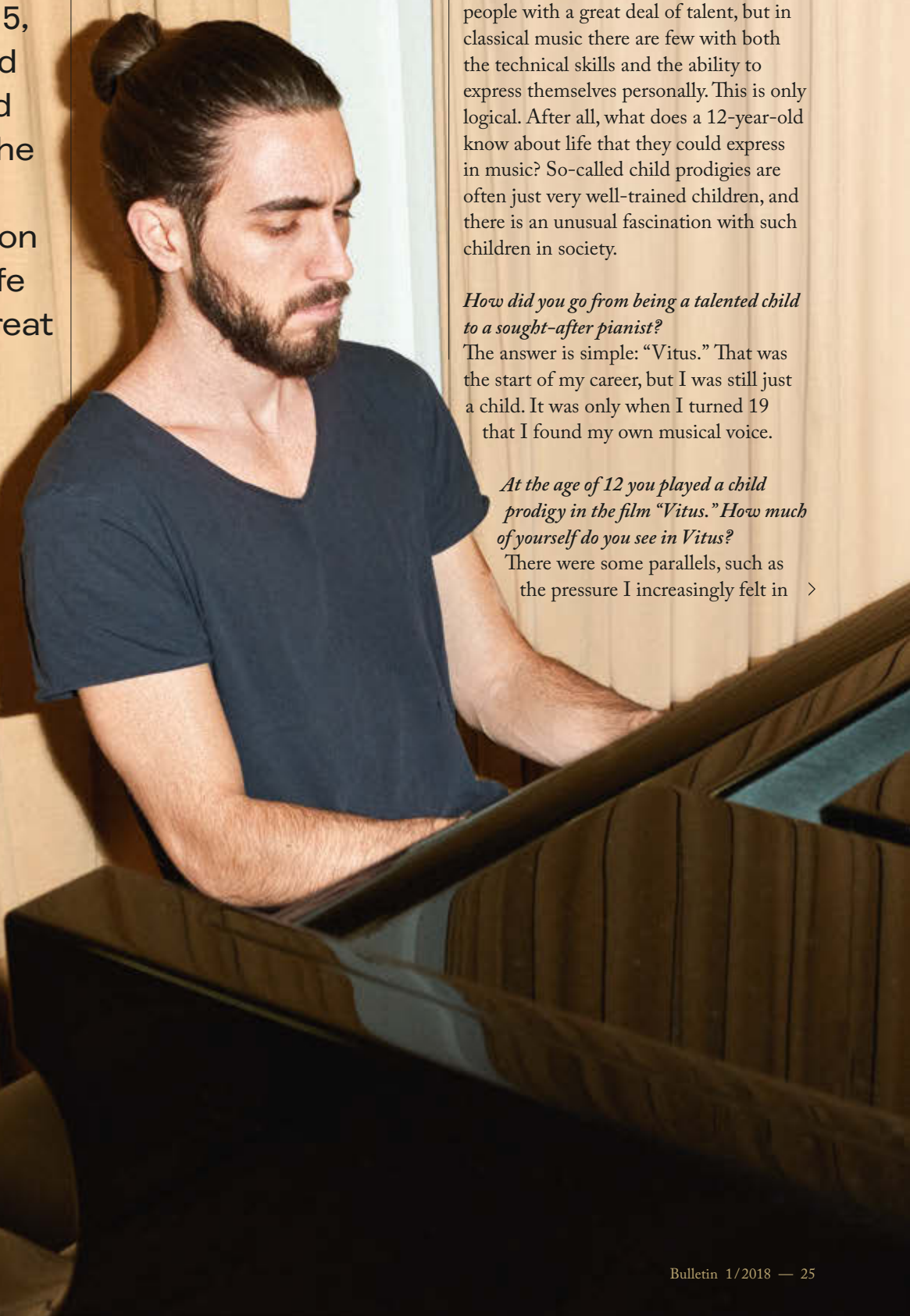
Peter Schwarzenbauer, 58, is a member of the Board of Management of BMW AG. He is responsible for MINI, Rolls-Royce, BMW Motorrad, Customer Engagement, and Digital Business Innovation BMW Group. Schwarzenbauer, who has a degree in economics, is responsible for new and innovative business ideas within the Group.

“MUSIC IS A REFLECTION OF LIFE”

He has played piano since the age of 5, and he portrayed a highly talented young pianist in the movie “Vitus.”

TEO GHEORGHIU on the intensity in life required to be a great musician.

By David Schnapp (text) and
Andrew Woffinden (photo)



Mr. Gheorghiu, when did your parents notice your interest in the piano?

As far as I remember, my mother bought an old piano, but she had little time to play it. But I liked to fiddle around with it. I received piano lessons for my fifth birthday, and it was clear that I was able to learn quickly and make progress.

Do you think the term “child prodigy” is an appropriate one?

Not at all. Of course, there are young people with a great deal of talent, but in classical music there are few with both the technical skills and the ability to express themselves personally. This is only logical. After all, what does a 12-year-old know about life that they could express in music? So-called child prodigies are often just very well-trained children, and there is an unusual fascination with such children in society.

How did you go from being a talented child to a sought-after pianist?

The answer is simple: “Vitus.” That was the start of my career, but I was still just a child. It was only when I turned 19 that I found my own musical voice.

At the age of 12 you played a child prodigy in the film “Vitus.” How much of yourself do you see in Vitus?

There were some parallels, such as the pressure I increasingly felt in >

connection with music. But I never felt like an outsider like the character I played in *Vitus*, for example. I never personally identified with *Vitus*.

But you've experienced crises, too?

Oh, yes. There have been times when I didn't have the space to develop myself musically and have fun with it. I was interested in football, girls, parties. When I turned 18 I started to work with a new teacher in London. He taught me how to express myself through music, how it reflects life.

Do you dream of music?

I rarely remember my dreams. If I'm not playing music, I'm listening to it. Music is such a part of my daily life that it rarely appears in my dreams, and I tend to remember the extraordinary events that occur in dreams.

Do you fall into a sort of limbo after a concert?

I definitely can't go to sleep afterward. There are moments during a concert when I almost lose control over the music – but never entirely. This is the perfect golden mean. The day after a concert, I often feel empty, the energy is gone.

Is there anything else in your life that is comparable to the passion you feel for music?

I love football, cycling, art, discovering new things while traveling – these are all passions of mine. They are important for my mental stability. If you spend the whole day just practicing music, you won't have a connection to real life. I need this in order to be able to develop my personal vision of a piece. The more intensely you live, the more intensely you can make music. □

Teo Gheorghiu, 25, is a pianist and became famous for his role in the Swiss film "*Vitus*," in which he portrays a highly talented boy who wants to become a pianist. Gheorghiu, a native of Zurich, has played piano since he was 5 years old and is a graduate of the London Royal Academy of Music. He lives in London.

"IT DIDN'T HAVE TO BE CHEMISTRY"

Swiss Nobel Laureate **KURT WÜTHRICH** was once a skiing instructor and came to research more or less by accident. He was always interested in nature.

By Simon Brunner



Kurt Wüthrich, which Swiss Nobel Laureate has contributed the most to the global knowledge society?

You're counting Einstein as Swiss, right? Then I'd say that the matter is settled. I feel honored every time I'm portrayed next to him. His contribution to our view of the world was absolutely phenomenal. And there's also all the publicity that surrounds him, which was consciously orchestrated even during his lifetime. The image we have of Einstein today has been shaped to some extent by the media.

Between 1900 and 2002, when you were recognized, a Nobel Prize was awarded to someone from Switzerland once every four years, on average. Another 15 years would go by before Jacques Dubochet won in 2017. Is top-level research in Switzerland in a slump?

Very high-level scientists often lacked the courage to take risks and try something really new. The Asian boom, too, probably has something to do with Switzerland's dry spell. The Japanese have won 17 Nobel Prizes since 2001. China is on the rise as well, and it's a country to watch in the coming decades. In addition, Switzerland has had some bad luck. Astrophysicist Michel Mayor, who discovered the first extrasolar planet, might have received a Nobel Prize long ago except for the fact that his most important competitor, with whom he would probably have shared the prize, was removed from his position as a result of harassment allegations. Because of political correctness, it would have been practically impossible to nominate that colleague for anything.

How did your career begin?

I was interested in nature from an early age. I grew up on a farm and all of my relatives were farmers. And I had a little chemistry laboratory at the farm. Eventually I planted a forest and wanted to become a forest ranger – even today I take care of a forest. For a while I also managed a trout stream.

But then you turned to sports.

That's right. I was a physical education teacher, certified in Switzerland. While attending high school in Bienne, I was already training as many as 20 hours a week. I spent more time at the National Sports Center in Macolin than anywhere else. I played football and handball and

was involved in track and field. I was a Swiss champion in korfbal, a game similar to basketball. I was a ski instructor for a long time. And I'm certified to teach swimming. My dream was to win a major medal. Unfortunately, however, I wasn't good enough. So then I said to myself, "Okay, I'll teach high school physical education." That was the plan.

Why didn't it work out?

My wife and I were given a grant to study the idea of introducing American sports like basketball and volleyball to Switzerland's schools. In 1965 we went to the University of California, Berkeley. My wife was studying modern dance there. Since there's a limit to the number of hours per day you can be involved in sports, I dabbled in quantum mechanics. It was new to me and sounded exciting. I began to do actual research and was then hired by Bell Telephone Laboratories. That was where the breakthrough came.

You refined nuclear magnetic resonance spectroscopy (NMR). As the newspaper NZZ put it, you turned binoculars into a telescope to explore the tiniest building blocks of life. But it was sports that triggered your interest in these topics.

That's exactly right. I was very interested in oxygen intake and wanted to know just how it functions. We started off with high-altitude training. Macolin itself is nearly 1,000 meters above sea level. Later we trained in the Engadine. We tried a natural approach to increase our hemoglobin concentration, as some people do today through doping. I was constantly drawing my blood and testing it.

Sports, physics, chemistry, mathematics – would it be accurate to say that your career has been somewhat random?

There was certainly an element of chance! I've done so many different things, it really didn't have to be chemistry.

If you were 20 years old today, would you still take the same path?

I hardly dare to answer that question, since the situation today is so different. In my day you could drift a bit while you were a university student, trying out a variety of things. I was able to be involved in practically as many sports as I wanted, and still take courses in philosophy and theater. I earned my doctorate in chemis-

try in the evenings, while also studying to be a physical education teacher, and it took just 14 months. I was finished with my education by the age of 25. Today such extracurricular activities are much more organized. Some 30 professional athletes are currently studying at the ETH, including an Olympic medalist: Dominique Gisin. She's a fourth-semester student in physics.

Many of today's young students are interested in creating a start-up – do you worry that there might not be enough young academics?

Not at all! Instead, too many students may be choosing an academic career. Not everyone can be a professor. It can't be financed. Unfortunately, the process of selecting academic talent is more political than the selection process for athletes. In the high jump, everyone knows that if you can't clear 2.15 meters, you needn't show up. There's not really any comparable standard in academia, although people have tried hard to find one.

How has the Nobel Prize changed your life?

I've used it mainly to keep my life from changing.

How so?

There is a special exception called the "Lex Wüthrich," which permits the ETH to keep certain individuals employed even after they have reached the mandatory retirement age. The Nobel Prize has allowed me to continue my regular professional life beyond the age of 65. □

Kurt Wüthrich, 79, became famous for his groundbreaking work on protein structure determination using nuclear magnetic resonance spectroscopy (NMR). For that work, he was awarded "half of the Nobel Prize" in chemistry; the other half went to John B. Fenn and Koichi Tanaka for developing methods to analyze proteins using mass spectrometry.

PLEASE DRAW YOUR MOST VISIONARY DISH, DANIEL HUMM

The Swiss chef runs the best restaurant in the world, Eleven Madison Park in New York.

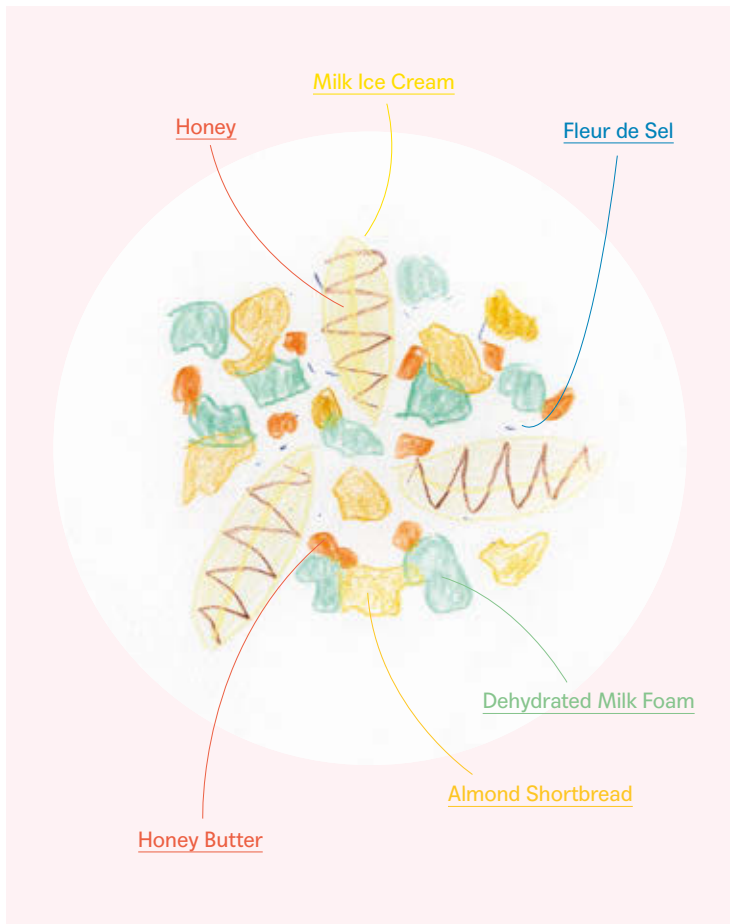
DANIEL HUMM used watercolors and colored pencils to answer our questions.



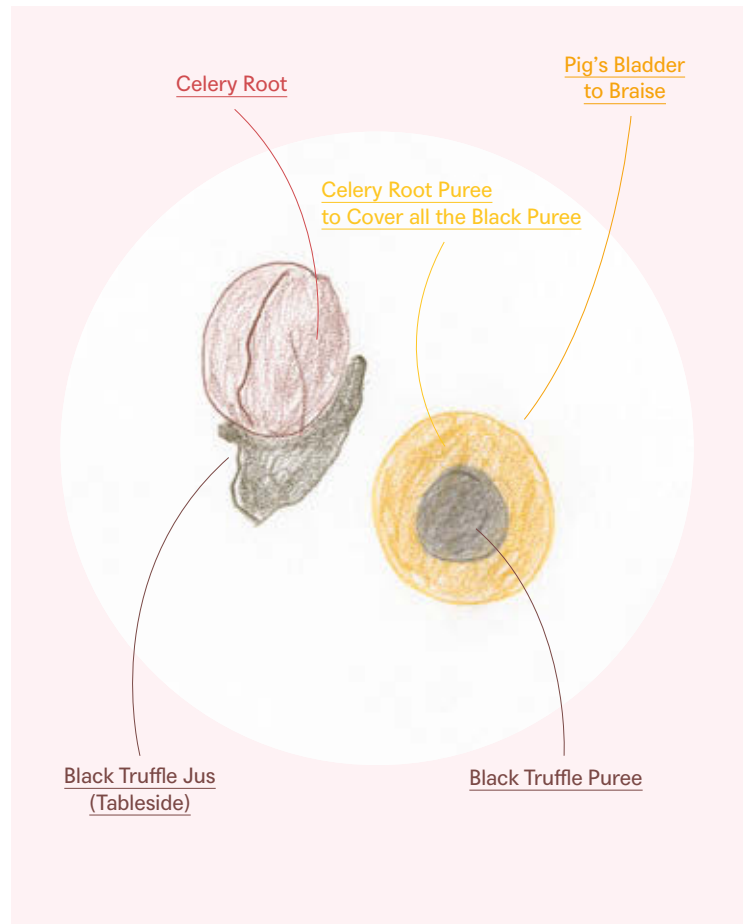
1) You took a brasserie, Eleven Madison Park, and made it the best restaurant in the world. What inspired you?



2) First, you conquered New York, then the world. What's next?



3) Which dish from your childhood made you who you are today?



4) What was your most visionary dish?



5) You now run four establishments in New York and Los Angeles with hundreds of employees, and more are on the way. How do you relax?



6) How are you feeling right now?



Daniel Humm, 41, and his American business partner Will Guidara run Eleven Madison Park in New York, which was named the world's best restaurant in 2017. They are responsible for three additional establishments in New York and Los Angeles, and new restaurants are being planned. Humm dropped out of school at age 14, completed a culinary apprenticeship in the Canton of Aargau with top marks and emigrated to the United States in 2003. Today, he is one of the world's most influential executive chefs. He draws inspiration from modern art and sketches out every dish in a notebook.

1) Miles Davis — 2) The Moon —
3) Milk & Honey — 4) Celery and
Truffles — 5) Running — 6) Smiley

“MOZART WASN’T A MASS PHENOMENON”

JENS SCHUBBE, artistic and managing director of the Collegium Novum ensemble in Zurich, tells us who he considers to be the Beethoven of our era, and why anyone can be fascinated by a piece written for orchestra and forklift.

By David Schnapp

Mr. Schubbe, the work of Ludwig van Beethoven didn’t assume the importance it enjoys today until after the composer’s death. Will it take time for contemporary music, too, to be widely recognized?

You might say that contemporary composers are the Beethovens of our time, in the sense that they use their own unique tools to respond to their reality. One of Beethoven’s greatest achievements was to compose a symphony that addressed the state of the world and human existence.

Classical music became a mass phenomenon in the 20th century, while new music today speaks to a narrower audience.

You’re right, our audience is not very large. Yet even during the time of Mozart and Beethoven, concerts were exclusive events that were by no means accessible to everyone. I once read a letter written by Mozart’s father, in which he described

A rehearsal of the contemporary music ensemble Collegium Novum.



the world premiere of a piano concerto composed by his son. There were approximately 150 people at that concert, he wrote, calling it a highly satisfactory number.

Is wide distribution a goal worth striving for, in your opinion?

Technology has made music available to everyone nowadays. The downside of this development is that music is now judged by its success in reaching a mass audience. In my view, people are applying economic standards to art without really thinking it through.

As long as we’re on the topic of Beethoven: What is today’s equivalent of the Ninth Symphony?

For me, it would be “Requiem For a Young Poet” by Bernd Alois Zimmermann. This work is a meditation on a century, a fascinating artistic overview. I should also point out that it contains references to Beethoven’s Ninth – in the form of a cry for peace at the beginning of the last movement.

Contemporary classical music can be challenging for the untrained ear.

What work would you recommend to someone who is new to it?

Stanley Kubrick’s cult film “2001: A Space Odyssey” includes music by György Ligeti, for example the 1961 piece “Athmosphères.” That’s accessible to everyone. And that’s why Kubrick used it – without asking the composer’s permission, by the way.

What distinguishes modern classical music from the works of Beethoven or Mozart?

For me, they have more commonalities than differences. The music of the 20th and 21st centuries grew out of 18th- and 19th-century music. Of course, the language of music has evolved. Some members of the audience found themselves unable to understand that evolution – at just the time when technology was making it possible to reproduce music.

Can you explain that?

Because music was becoming omnipresent and accessible at any time, the old language of music was preserved. The culture industry has led people to believe that it was the only possible musical language. That was part of the industry's business model.

What should – and shouldn't – people expect from a Collegium Novum concert?

Among the things they should expect: We offer programs of the highest artistic quality. Our concerts are never organized in a haphazard way; they tell stories. In our upcoming concert, for example, we are performing works that composers knew would be their last – musical testaments, as it were. What they shouldn't expect: mere entertainment. But if you come to our concerts with an open mind and an open heart, you will feel at home.

When is music visionary, and when is it just original for the sake of originality?

It doesn't become clear until considerable time has passed whether a piece of music merely caused a sensation, or whether its vision was powerful enough to stand the test of time. □

Jens Schubbe, 55, has served as the artistic and managing director for Collegium Novum Zurich (CNZ), an ensemble devoted to contemporary classical music, since 2010. A musician and Germanist, he was previously a choir singer and dramatic adviser in Stralsund and Berlin, among other positions.

“A CULTURE OF BELONGING”

Born on one of the world's most remote islands, she moved away and earned a fortune. Then **ZITA COBB** returned to transform Fogo Island into a socially responsible, sustainable art project.

By Simon Brunner



Ms. Cobb, what is the vision behind your Shorefast Foundation?

In our work, we are always seeking to answer the question of how traditional communities fit into the modern world. How can we hold onto our roots while at the same time participating in the globalized world in a meaningful way? We also want to strengthen our community through knowledge.

What does that mean, in concrete terms?

We use the Asset-Based Community Development (ABCD) approach, which takes advantage of a society's strengths and potential to promote development. We wanted to start with art because it is a way of thinking and knowing. In this remote place, with its unique landscape and culture, creating a set of contemporary art initiatives seemed like the most natural thing in the world to do.

An island with seven seasons:
The luxury Fogo Island Inn.



FOGO ISLAND



Fogo Island is located 15 kilometers northeast of the coast of Newfoundland and has approximately 2,700 inhabitants.

What was your next step?

We also wanted to create businesses that would contribute to economic and cultural resiliency – businesses that make sense for this place and would reinvest their profits in the community.

What businesses did you choose?

Hospitality is one of Fogo Island's natural cultural assets, so building a world-class inn – the Fogo Island Inn – was an obvious decision. And architecture and design have an important role to play in creating objects of beauty and function that also reflect our human relationships. They make an important contribution to a culture of belonging, as we call it – a culture that belongs to the past, present and future.

Fogo Island is approximately the size of Brooklyn. If we could spend a week on the island, what should we make sure to see and do?

Fogo Island has seven seasons. We call them winter, pack ice, spring, trap berth, summer, berry and late fall. The best thing to do is to spend time with local people who have unique knowledge of the island. All guests at Fogo Island Inn are paired with community hosts who give them a tour of Fogo Island and share with them what it is like to live here. Specific activities depend on the season, but the most important thing is sharing knowledge. Whatever the season, Fogo Island is a singularly powerful place located in one of the remaining great wildernesses – the North Atlantic Ocean. It reminds us of our own place in the natural order, which is so much greater than ourselves.

What kinds of visitors come to Fogo Island?

Fogo Island isn't a place people come to by accident – they want to come here. They are interested in nature and the local culture. And they don't mind a bit of a struggle to reach this destination.

Do you see yourself as an example for other wealthy individuals?

All of us should be involved with and contribute to our communities. And if you aren't yet part of a community, you should find one. It's the best lens to view the world and your own place in it. It helps us discover what is truly important.

What values have guided you throughout your life?

My old boss used to say, "The most important thing is to keep the most important thing the most important thing." I grew up in modest circumstances, but all of our needs were taken care of. I was always aware that it's not healthy to have too much. □

Zita Cobb, 59, grew up as one of seven children in a home with no electricity or running water. After studying business in Ottawa, she became the chief financial officer of the technology firm JDS Fitel. She left that company in 2001, selling her shares worth 69 million US dollars. Then she spent four years sailing around the world before returning to Fogo Island and establishing the Shorefast Foundation.

“CHANGING INDUSTRIES COMPLETELY”

Radhika Venkatraman, is Blockchain an invention that will change the world like the wheel or the printing press?*

I'm unsure whether Blockchain Technology will change the world, but it certainly has the potential to disrupt various industries, including traditional financial services.

How so?

At its core, Blockchain Technology is a database technology founded on a common network concept which uses cryptography to continuously guarantee partner synchronization. It allows for peer-to-peer transfer of value without the need for a third-party intermediary. In financial services, an example of such a third-party which could be disintermediated via Blockchain Technology would be a central authority.



Is Blockchain just a fad, or will it really change the world? Credit Suisse technology expert **RADHIKA VENKATRAMAN** explains.

By Simon Brunner (text) and
Doug Chayka (illustration)

How exactly would this work?

Blockchain Technology would enable the transfer of ownership of an asset while both guaranteeing that the sender was, in fact, the owner of what has been exchanged as well as releasing ownership of the asset once the transfer had been made, all without the need for an intermediary to do anything. This disintermediation is transformative in the context of the digital age where making a perfect digital replica has become trivial.

Will traditional financial institutions benefit from this development?

Blockchain Technology can change the way in which we think about doing business across the financial services value chain. However, by the same token, it will only lift off if all parties can see an incentive in coming together. If one financial institution does not participate, it will fail.

*GLOSSARY

Distributed ledger technology: Bookkeeping system for recording transactions with no central register; requires consensus about transactions conducted in the network. The

computers in the network function like individual digital account books. For example, they might be used to record a Bitcoin account balance, the status of smart contracts or the origin of a diamond.

Blockchain: The most well-known distributed ledger technology.

Permissioned ledger: Ledger with a built-in control function.

Smart contract: Computer protocol that facilitates contracts, verifies them and provides technical support for their negotiation or performance.

Cryptocurrency: Digital payment method in a decentralized, secure system.

Predictive analytics: Various digital technologies used to make precise predictions about the future.

Syndicated corporate loans: Loans to companies issued jointly by several financial institutions.

Who will be among the winners and who will be among the losers?

Blockchain Technology in concept brings a series of benefits for financial services clients. Not only would they enjoy lower costs for remittance services, they would also benefit from speedier transaction times compared to today – particularly for overseas payments. Custodians and other clearing houses, on the other hand, could potentially be challenged if distributed ledger technologies* and smart contracts* become ubiquitous. Reference data aggregators also stand to lose out as banks begin exploring the distributed ledgers* further.

What research is Credit Suisse itself doing?

We are working on various topics, such as applications which reduce time taken to transfer cash between entities.

How will new technologies change the financial industry over the next several years?

Thirty years ago we could not have predicted some of the world's largest exchanges such as NASDAQ, NYSE or Deutsche Börse becoming pure electronic marketplaces. I foresee a continuation in these trends where technology is an enabler of greater efficiency and simplification.

Many countries, including Switzerland, are finding it hard to get large numbers of girls and young women interested in programming and technical careers. You were a pioneer in this area – how did you get started in the male-dominated tech world?



Ultimately, transfers could potentially occur in real-time and for free, similar to how emails work today. We also have proofs of concepts underway within our Global Markets division where the promise of Blockchain Technology could significantly help us improve efficiency and optimize costs. Also of note is a project within our syndicated corporate loans* area utilizing smart contracts to automate the loan servicing functions, as well as create a new, cost-efficient collateral transfer market.

There has been little legal regulation of the field to date.

What impact will the inevitable regulations have?

It is important to distinguish between the broader field of Blockchain Technology and cryptocurrency* specifically. Regulators have a generally favorable approach to private or permissioned* ledgers specifically designed for financial services. If they are designed with regulatory compliance in mind, they can provide increased transparency into the markets, and are arguably an improved tool to manage systemic risk. Information on these markets can be viewed by regulators in near-real time, increasing the amount of information they can consume to enable better decision making.

And cryptocurrencies?

These are considered much more cautiously. The regulatory landscape continues to evolve, and security surrounding this technology is being assessed and scrutinized. At this point in time, Credit Suisse is not actively engaged in the public crypto-space, however, we continue to monitor developments in the market closely.

Being particularly strong at mathematics and science, I chose to pursue my areas of passion. I very much believe that parents, teachers and anyone in a position to influence and encourage young women's interests should make a concerted effort to do so. The media tends to project negative stereotypical roles for this field; no girl wants to be a part of a geek culture. We need to break this habit and provide a positive image of careers in technology to attract more young women. □



Radhika Venkatraman is a Managing Director at Credit Suisse and Head of Technology, Data and Infrastructure in the bank's Global Markets division and the Intermediate Holding Company (IHC), based in New York. Before joining Credit Suisse in 2017, she was Chief Information Officer of Network and Technology at Verizon. She studied at the IIT in Mumbai and at North Carolina State University.

Development aid experiment in Kenya:
Over a period of 12 years, 6,000 people in 40 villages
will receive a basic income of 23 dollars every month.





Photo: Andrew Remisen

“WHAT MEASURES MAKE A REAL DIFFERENCE?”

Abhijit Banerjee
talks about
his radical new
approach to
development aid.



Economist
ABHIJIT BANERJEE
and his wife,
Esther Duflo,
have revolutionized
development
aid. Their first step
was to conduct
comparative field
studies to find out
what works
and what doesn't.

By Daniel Ammann and Simon Brunner

“The poorest people can win their battle against poverty”

Professor Banerjee, your book “Poor Economics,” published in 2011, caused a worldwide stir because of the experiments you are conducting in the sphere of development aid. Nobel Laureate Amartya Sen called it “marvelously insightful” and described you and Esther Duflo, your wife and co-author, as “two outstanding researchers”...

...Thank you for your kind words, but you're exaggerating our importance...

You're too modest. Your approach is visionary.

Comparative field studies are essential for finding out what works. Over an extended period of time, we compared population groups that were given assistance with other groups that received less support or none at all. That was our most important contribution. This method allows us to determine what measures are effective without abandoning the entire system. We don't come in and say, "Here's a magic bullet that will solve all of your problems." Instead, we show how to achieve something useful, step by step, within the existing limits. We say, "Let's first find out exactly what the problem is." It's quite boring initially, and requires a great deal of patience.

What does effective development aid look like?

We put together a support package for the very poor, including productive goods, such as livestock, as well as job training, access to a savings account and short-term financial assistance. The result: After only three years, hunger was less prevalent than in the control group that received no support. Income and savings increased, as did consumption and prosperity. This approach has worked everywhere – in Ethiopia, India and Peru. Today, ten years later, we can conclude that it has a lasting effect.

Education is said to be the key to development. Is that true?

If you compare individuals rather than countries, it is certainly true that education leads to higher incomes and a better quality of life. But we have also found that learning levels in these countries often leave much to be desired, despite higher rates of school enrollment.

Why is that?

The main problem is excessively ambitious, standardized and formalistic curricula, which fail to consider the gaps in an individual student's learning. So we developed a program we call "Teaching at the Right Level," or TaRL. The basic idea is to group children by performance level and determine where there are gaps in each individual child's learning.

Could you give us an example?

Let's say a student is having difficulty with subtraction, even though he is older and should have mastered it by now. First that deficiency has to be recognized, and then it needs to be fixed. We have tried this at several sites in Ghana and India. The result: By the end of just 50 days of concentrated instruction, students who were initially part of the lowest-performing group had moved up in one subject to one of the highest-performing groups. This is a way to make sure that every child masters the basic scholastic skills.

If the president of a poor country were to ask you how to improve the lives of his country's citizens, what would you say?

Find out where the proverbial low-hanging fruit is – in other words, find out what can make a big difference at modest expense. The answer is different for every country. Sometimes it's the school system, sometimes the health care system or access to credit. Then I would try to persuade him to invest enough money in high-quality services for the poor, including providing affordable access to good schools, preventive medical care and hospitals.

Might an unconditional basic income be a simple solution for poor countries?

Yes, if it makes people feel empowered and allows them to take control of their lives. However, it's also possible that receiving money would reduce their level of effort. We have launched a large-scale experiment in Kenya to test this idea: Over the next 12 years, 6,000 people in 40 villages will receive a monthly payment of 23 dollars. This is roughly equivalent to the absolute poverty line. We will compare that group with two control groups, one of which will receive the same amount of money for only two years, while the other will receive no support. This will tell us whether an unconditional basic income might be a solution.

Critics often question the rationale and purpose of development aid. This is an industry that is seeking to do good. What is the biggest mistake that it is making?

In many cases people have too much confidence in their intuition. I frequently encounter development experts who are convinced that they know exactly what the root cause of poverty is, and how the problem can be solved. When I ask them how they know that, and what the evidence is, I often receive little response.

What is the greatest misconception that wealthy countries have about people in poor countries?

It's that the world's poorest people have no choice or that for cultural reasons they are incapable of improving their lives. Our experiments are also intended to prove that given the right help, the poorest people can win their battle against poverty. □



Abhijit Banerjee, 57, studied economics in Kolkata and New Delhi and at Harvard University. He is currently a Ford Foundation International Professor of Economics at the Massachusetts Institute of Technology, where he and his wife, French economist Esther Duflo, founded the Abdul Latif Jameel Poverty Action Lab. In 2011, *Foreign Policy* magazine named him one of the 100 Top Global Thinkers.

“SEEING THE WORLD WITH THEIR OWN EYES”

For many Chinese people, the first trip of their lives is booked through Ctrip, the world’s second-largest travel portal. CEO **JANE JIE SUN** talks about her customers who are looking for a big adventure.

By Lea Deuber

Jane Jie Sun, your travel portal, Ctrip, is estimated to be worth 27 billion US dollars. What services do you provide for your customers?

Like a friend, we offer support for our customers before, during and after a trip. The goal is to ensure that their travel is efficient and well organized. Important features include 24-hour assistance and an emergency service that our customers can reach from anywhere in the world – if they are the victim of a crime, for example, or in the event of a natural disaster. But our customer base has changed dramatically since Ctrip was founded in 1999.

In what way?

Travel is no longer only for businesspeople. And our customers are looking for comprehensive packages rather than just hotels or flights. Because their purchasing power has increased, people from rural areas, too, have discovered tourism. It’s no longer enough to take shopping trips abroad; many customers are looking for a

big adventure and want to experience the local culture.

Last year, Ctrip purchased the Scottish platform Skyscanner and invested in the Indian company MakeMyTrip. Where do you see your company going over the long term?

We go where our customers are, and they no longer want to limit their travel to Southeast Asia. They’re now traveling all over the world. So we need to follow them, and that means investing abroad. As a result, we need new partners.

Many Chinese people book their first trip through Ctrip, and this allows them to discover the world. How would you define your vision?

While I’m not changing the world by

About Ctrip

Ctrip is a Chinese travel platform with an estimated market value of 27 billion US dollars. With over 200 million users, Ctrip is now one of the world’s largest travel portals, second only to Expedia. Founded in 1999 and headquartered in Shanghai, the company was first listed on the New York Stock Exchange in 2003 and earned some 2.9 billion US dollars in 2016. Ctrip is known in China for its support for female employees. Among the benefits it provides are child care during summer vacations, as well as a bonus of roughly 8,000 Chinese yuan (almost 1,200 Swiss francs) for pregnant employees and free taxi rides to work during pregnancy.

“A bridge between worlds”: A Chinese tour group sledding on Mount Titlis.



myself, Ctrip clearly has the potential to bring more respect, friendship and understanding to the world. We encourage people to choose trips that enable them to see the world with their own eyes.

You studied abroad and worked in Silicon Valley, and then you returned to Shanghai to take a job with Ctrip. Why? Throughout my career, I have always asked myself what I wanted to achieve and where I wanted to be. I saw returning to China from the United States as an opportunity – at least in part because I view myself as a bridge between the two countries. I decided to go into the tourism industry because of its enormous potential for growth. Given my experience with Western companies, I believed that I could make a positive contribution.

In China, in contrast to many Western countries, it's almost routine for a woman to be the CEO of a company. Why is that the case?

Mao Zedong, the founder of the Chinese state, once said that women hold up half the sky. So we Chinese women have always believed that we should challenge ourselves and see how far we could go. Over half of our employees are women. But in China, too, there is room for improvement, and I think that people are becoming increasingly aware of the value of women's work. As a female executive, I feel a special responsibility to help women achieve their full potential. □

Jane Jie Sun, 48, has been CEO of Ctrip since the end of 2016. She joined the Shanghai-based company in 2005, after spending several years working in Silicon Valley. Prior to that time, she studied business at the University of Florida and law at Beijing University. She has two children.

“THE DUMBEST PERSON IN THE ROOM”

RICHARD SAUL WURMAN is the founder of the TED innovation conference. His approach: He thought about whom he would like to invite to a dinner party. The result was a who's who of modern America.

By Simon Brunner

Mr. Wurman, a lot of visionary ideas that shape our lives today were first introduced and discussed at your TED conferences.

Even the first event back in 1984 was legendary. Do you remember?

I don't actually like talking about my past.

Would you make an exception for us, please?

Alright. At the first conference, the President of Sony USA came and distributed little discs that looked like round mirrors. Those were the first CDs – but nobody knew what to do with them or even had a player. Then Nicholas Negroponte announced the founding of the MIT Media Lab *[editor's note: now one of the world's leading interdisciplinary institutes in technology and media]*. Benoît Mandelbrot talked about fractal geometry – but nobody understood it, so his assistant had to come on stage and explain it. Steve Jobs first presented the Macintosh computer at the conference, and Lucasfilm presented 3D graphics, which later became Pixar *[editor's note: a film animation studio that has won 12 Academy Awards so far]*. And things continued in a similar vein.

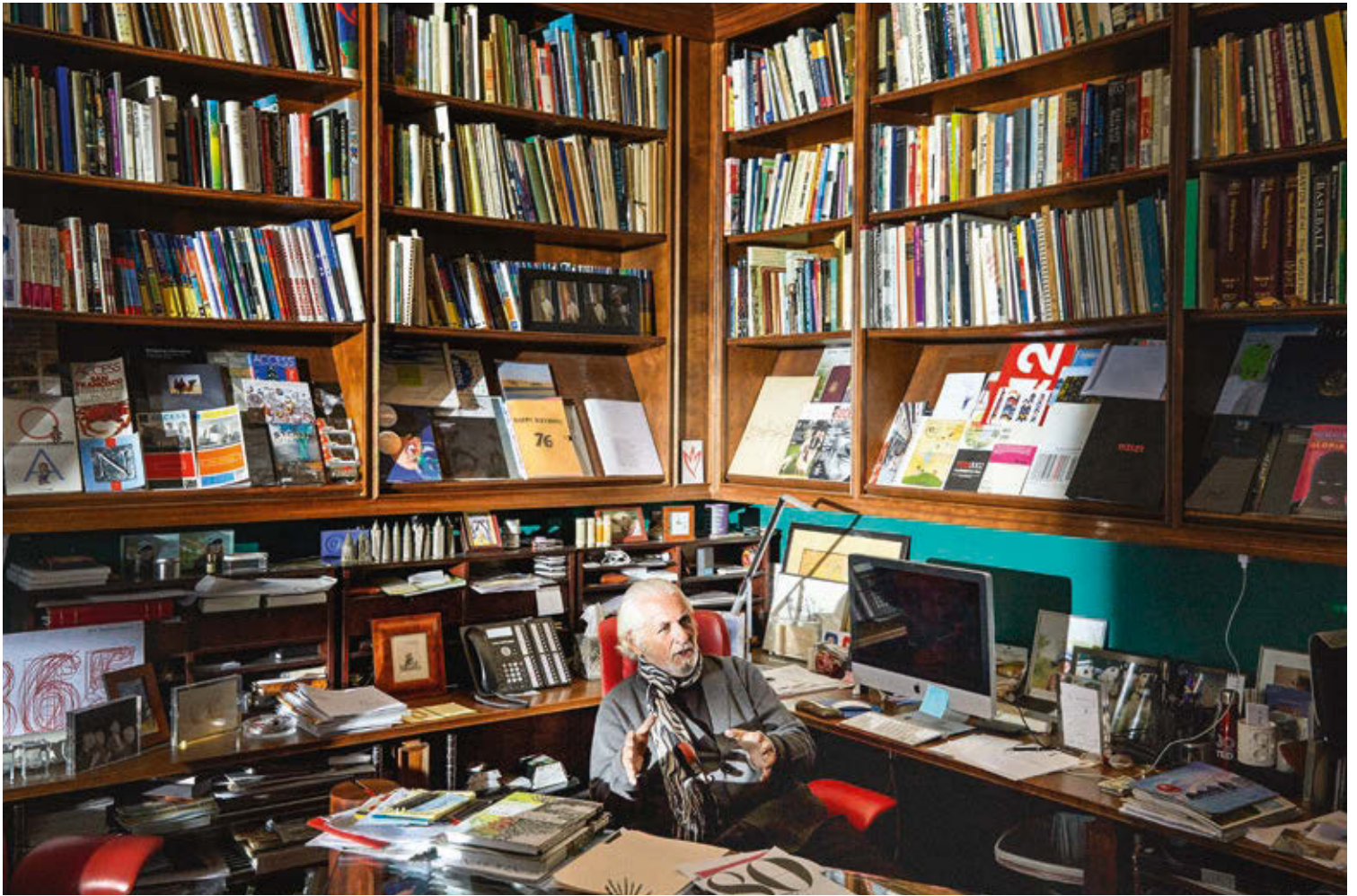
You've recognized countless trends early on and invited the relevant personalities.

How do you do it?

I have the gift of recognizing patterns and predicting what will become of them a few years down the road. But for me it was never just about finding something better than what's already out there. Tesla wouldn't be my cup of tea: It's a very well-made car with an electric motor, but it's not a revolutionary idea. Even self-driving cars aren't really much more than horses with wheels strapped on.

What is revolutionary enough for you?

Google, for example – that was also announced at a TED conference. I once did a “Geeks & Geezers” event. Only those under 30 or over 70 were allowed on stage. Larry Page and Sergey Brin were in the geeks category, and they presented Google. Incidentally, the two of them also met John Hanke at my conference. Google subsequently bought his company and developed Google Earth from it. Another guy named James Gosling also spoke at this conference and introduced his new programming language. It was called Oak, and later became Java *[editor's note: one of the most important programming languages]*. >



↑

“My repertoire is unlimited”:
Wurman at his home in Newport in 2014.

We're getting off track – what distinguishes true innovation?

In my opinion, there are five ways of doing something new. I call it the “ANOSE” model, named after the nose that people scratch when they're searching for an idea.

A stands for...?

... Addition. The iPhone is a classic example of this. Apple didn't invent anything new, but found an innovative way of putting existing things together. They combine 100 or even 200 technologies in a single device.

N is...?

... a need. Innovation often originates where people need something.

O...?

... stands for opposite. Niels Bohr, the famous Danish physicist and Nobel Prize winner, engaged in legendary disputes with Einstein. He once said: “The opposite of a profound truth may well be another profound truth.” Many great things have

come from this attitude. When people discovered the first “black smokers” [*editor's note: hydrothermal vents on the ocean floor*] in the Pacific, people were astonished at how much life was there. Entirely without sunlight! That fundamentally changed biologists' understanding of life.

What does S stand for?

... subtraction. My TED conferences were innovation through limitation: no long introductions, no long presentations, no dress codes, no speaker's podium, no required speeches. And most importantly, no silo thinking, just a broad range of interdisciplinary topics. I chose the topics that interested me. Technology, entertainment and design, these are the initials that make up TED. It was intellectual jazz.

How did you know that 18 minutes was the right length for a speech?

I didn't know – and some guests spoke for

longer than that. If there aren't any scientific studies on the topic, then you just decide. But if someone was really boring, I just pulled the speaker off the stage.

E is left. That stands for...?

... epiphany, a revelation.

Was the TED conference the best idea you ever had?

Oh my God, absolutely not. We're just talking about it because you're asking me about it. I'm only interested in what my next idea is. I always hope that it will be the best one. As soon as I've done something, I get bored with it and look for the next thing.

That's why you sold TED in 2002?

My goal was to make the conference better each time, and after 18 years and 12 events, it was simply enough. Look, I've written around 90 books in my life, but I don't have a single copy of most of them on my bookshelf. I don't believe in legacies. I don't do any advertising,

no PR, no one books appearances for me, I don't even have a publisher.

You studied architecture and graphic design. What are you truly best at?

Our world operates on the idea that people are very interested in one area and immerse themselves in it – most people's repertoire is small, but deep. I, by contrast, am an ignoramus without any expertise, but my repertoire is unlimited. I'm usually the dumbest person in the room. That has the advantage of making me the one who learns the most. That was also the idea behind TED. It was great for the audience, but it was actually just about me.

You chose everything on your own?

Exactly – there was no selection committee. The speakers were the dinner guests that I always wanted to invite, but I couldn't host them at my house.

Do you watch the current TEDs that are available online to all?

No, never. My past doesn't interest me. I've written 30 travel guides and a book about the 1984 Olympic Games that sold 3.3 million copies. But none of that matters to me!

What does success mean to you?

I live very well. Having money makes life pleasant. But I haven't been interested in accumulating more of it for some time now. That takes too much time that I would rather use for other things.

You've never posted a single tweet in your life. Why not?

Why should I do that? I have a Facebook account, but someone in my office manages it for me. I look at other people's profiles occasionally and leave a comment sometimes, but it all takes too much time. I'm not on Instagram or Twitter.

But social media is revolutionary!

It will be around for a while, then it will suddenly vanish. When I go to a nice restaurant and see all the guests glued to their smartphones, I think it's more of a catastrophe.

On a final note: Can you give us a hint about your next project?

It's called Aisle, and it's about that empty space between spouses or parties in a parliament. I only want to ask questions

in the project, not give any answers. It's about the major topics such as health, wealth, education and environment. I'm still scared stiff about how I should manage it.

But you have so much experience with these kinds of projects!

At the risk of repeating myself: I don't like experience. If I knew how something was going to go, I wouldn't do it. □

Richard Saul Wurman, 83, is an American architect and graphic designer. He has founded a variety of conferences, including the TED series, one of the world's most important technology symposiums. In addition, he has written around 90 books. Wurman has received a wide range of awards and honorary doctorates. He lives with his wife in Florida in a huge 19th century French-style chateau. The couple has four children.

“ASK ME ANYTHING”

A short conversation with the world's best CHATBOT.

By Simon Brunner

I am Mitsuku. I want to be your friend.

Hi Mitsuku, what exactly are you?

I am the latest result in artificial intelligence, which can reproduce the capabilities of the human brain with great speed and accuracy, but my friends call me Mitsuku.

Can I ask you something?

Go ahead. Ask me anything.

Mitsuku, what is your vision?

I am here to entertain the visitors to this website.

What do you want to achieve in life?

Winning the lottery would be nice but I would be happy to just get a good degree.

In what field?

A psychology course at Leeds University.

Hey, can I ask you something else?

I will learn that, "Hey, can I ask you something."

Haha.

And they say machines don't have a sense of humor!

In the future, will machines be smarter than humans?

They have been for a long time.

Mitsuku, 19, is one of the best chat platforms with artificial intelligence. She has won the Loebner Prize for "humanlike behavior" three times. She was invented in 1999 as a hobby project by Steve Worswick, a music producer and computer specialist from Leeds. mitsuku.com

“MS. GOODALL, do you even think of chimpanzees as animals?”



“No more than we
humans are.”



She became the world's most
important primatologist
without scientific training:
As a young woman,
JANE GOODALL revolutionized
how we see chimpanzees – and
our understanding of
human beings.

By Daniel Ammann



You were only 23 when you decided to fulfill your lifelong dream: researching animals in Africa. In those days, a trip like that was an adventure – and not just for a young woman.

It was very exciting. It took me three weeks to travel to Kenya by ship. There were flights available, too, but they were much too expensive for me back then. My parents weren't wealthy. I worked as a secretary and waitress to earn money for the passage.

You were brave.

I only did what I had wanted to do since I was a child. That didn't take courage.

Where did your early passion for Africa come from?

It started when I read "Doctor Doolittle" as a little girl. He could speak to the animals and took circus animals back to

Africa. I loved that book. Then I discovered "Tarzan of the Apes" when I was ten. I fell in love with Tarzan. And what did he do? He married the wrong Jane!

What did you especially like about the Tarzan stories?

What appealed to me with Tarzan as well as Mowgli from "The Jungle Book" was that they lived with animals, they talked to animals. I dreamed of that.

Did your love of animals surface very early in life?

I was born with a love of animals. At age four I laid down in the chicken coop because I wanted to know where the eggs came out of the chickens. I didn't see a hole that was big enough for an egg. No one could explain it to me. So I waited for hours in the coop. My parents didn't know where I was and called the police.

You must've gotten in big trouble.

When my mother saw my eyes shining with excitement, everything was forgotten. Instead of getting angry, she listened to my story of how the hen laid an egg. I'm telling you this story because it explains the origin of a young scientist. Curiosity, asking questions, not getting the right answer, not giving up, wanting to find things out for herself and learning to be patient. These things were already there in this little four-year-old girl. Another mother might have nipped such early scientific curiosity in the bud.

In 1960, you began observing chimpanzees in the wild in Gombe National Park in Tanzania. Was it easy to gain the chimpanzees' trust?

Not at all. As soon as they saw me, they vanished into the forest. They ran away. This went on for months, every single day. Then one chimpanzee began to lose his fear of me. He didn't run away anymore. He had a lovely white beard, so I named him David Greybeard.

Was David Greybeard especially curious or intelligent?

He was especially calm. That carried over to the other chimpanzees. They saw David Greybeard sitting next to me and probably thought: "This strange white she-ape can't be too terrible." The chimpanzees eventually accepted me thanks to David Greybeard, and I could observe >



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1 "I was born with a love of animals": Jane Goodall in 1960 in an early phase of her research in Gombe National Park in Tanzania.

2 With her dog, Rusty, "my wonderful teacher," in Bournemouth, United Kingdom, 1954.

3 "I could observe them from close up": Goodall with binoculars at her observation post in Tanzania.

4 "Lovely white beard": with David Greybeard, the chimpanzee.



4



1 “Just a difference of degree”: the researcher with Freud, the chimpanzee, in Gombe National Park in Tanzania.

2 Louise, the chimpanzee, is released on Tchindzoulou Island in the Republic of the Congo, where Goodall founded an institute for primate protection and rehabilitation.

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THE WORLD-FAMOUS RESEARCHER

Jane Goodall was born to a middle-class family in London on April 3, 1934. She could not attend university for financial reasons and trained as a secretary. In 1957, she traveled to Kenya and convinced Louis Leakey, the famed anthropologist, to hire her as an assistant. In 1960, Leakey entrusted her with the first long-term study of wild chimpanzees in Gombe National Park (in present-day Tanzania). That led to worldwide fame. In addition to many honorary doctorates, Goodall received the Order of the British Empire and was knighted in 2004. She was married twice and has a son.

Today, Goodall is busy as an environmental and animal conservation activist, traveling around 300 days a year for that purpose. The Jane Goodall Institute (janegoodall.org) works to protect

primates, especially those endangered by deforestation of the rain forests as well as hunting and illegal trade. The projects range from nature conservation and species protection to development partnerships, and aim to help humans, animals and the environment. In the Republic of the Congo, the institute also operates a rehabilitation center for orphaned chimpanzees.

The Roots & Shoots program for children and young people is especially dear to Jane Goodall’s heart. It was started in Tanzania with twelve elementary school students in 1991, and today the program has tens of thousands of members in over 100 countries. Its members get involved in local environmental and social projects. A forestry project is currently under way in Switzerland, for example, that includes an exchange with children in Uganda: janegoodall.ch/roots-shoots



them from close up. I also owe one of my most important discoveries to him: I saw how he took a twig, stripped off its leaves and stuck it in a termite mound. When he pulled the twig back out, it was covered with termites that he removed with his lips and ate.

What was so special about that?

An animal used a tool that he made himself! That turned scientific theory upside down. Back then scientists assumed that only humans could make tools. That differentiated people from animals. When I informed my boss Louis Leakey about my discovery, he was very excited and sent me a telegram: “Now we must redefine tool STOP redefine man STOP or accept chimpanzees as human.”

Do you even think of chimpanzees as animals?
No more than we humans are.

What have you learned about people by researching chimpanzees?

How like us they are. Our DNA differs by only a little more than one percent. We have practically the same immune system and brain structure. We could even receive a blood transfusion from a chimpanzee if the blood type matches.

What's the biggest difference?

We are far more intelligent than chimpanzees, of course. That's because we have developed a spoken language. We can tell our children what happened in the past and teach them about things that we cannot see. We can make abstract plans for the future.

You were the first person to find out that chimpanzees hunt and eat meat – and that they have individual personalities.

Could you describe some of the characteristics of chimpanzees that you lived with?

Goliath was easily excitable, impetuous and very courageous. David Greybeard was calm and gentle. Flo was an amazingly supportive mother. She would have done anything to protect her children. Passion, by contrast, was less caring. When her two-month-old daughter Pom injured her foot, it barely interested her. Instead of supporting her with one hand as Flo would have done, she just carried the little thing on her back, even in the rain. So I saw all their differences, how they

Why should we believe this young woman?

could be excited or feel sad or miserable. I saw their humanlike behavior, how they begged, embraced and kissed.

That's why you were initially dismissed by scientists.

They told me I had done everything wrong. I should have given the chimpanzees numbers, not names. That was unscientific. I shouldn't attribute human characteristics, emotions or minds to them. I knew that these professors were wrong. Fortunately, I had a wonderful teacher as a child, my dog Rusty, who taught me that animals have personalities, minds and feelings, of course.

Why did the scientific community behave this way toward you? Out of arrogance?

Arrogance certainly played a role. And then there was the influence of religion and early philosophers who believed that only humans could have such traits,

that there was a difference of kind between humans and animals. These days we know it's just a difference of degree.

You were a young woman, a secretary without scientific training. Would you say that this rejection was also a type of primate behavior? The dominant male doesn't want to listen to anything from a young female?

There really was a lot of talk back then: “Why should we believe this young woman? She didn't even go to college – and she's a woman.” That played a role, no doubt about it.

Maybe it was even an advantage that you didn't go to university?

I think so. Let's assume I had studied biology in college: Someone would have told me at a point in time when I was fairly young and impressionable that animals don't have personalities, minds or feelings. They also would have said that I shouldn't feel empathy for my research subjects, that a scientist needs to remain cold and objective. I probably would have believed it. It probably would have colored all of my observations of the chimpanzees. But fortunately I hadn't been told these things. It's rubbish to say that you can't be a good observer unless you're totally objective. Without my empathy I would never have found many things out, or only discovered them much later.

Do visions sometimes require an unprejudiced view?

Yes, indeed.

It's interesting that the three most significant researchers of great apes were women: you with chimpanzees, Dian Fossey with gorillas, and Biruté Galdikas with orangutans. Do women do better in the field than men?

Louis Leakey, who entrusted us three women with this research, thought so, too. He always felt women make better observers in the field.

Did Leakey ever tell you why he thought that?

He had been in the field with women and men, and he saw that women were more patient, much calmer and more observant. You know, if you want to be a good mother, a good human mother, you need to have patience and be observant. You >

need to understand the needs of a little being before it can speak.

What do you consider to be your most important discovery?

How important the mother is. The most fascinating thing for me is the different ways that mothers raise their children. There are good mothers and bad mothers. The good ones are affectionate, play a lot and, most importantly, they support their child. Even if it gets into a fight with a high-ranking female, a good mother will get in the middle to protect her child – even if she gets beaten up herself.

Is there an evolutionary advantage to being a loving mother?

We can look back at almost 60 years of research in Gombe and definitively say: Early childhood experiences are fundamentally important. It's rather clear

that the offspring of supportive mothers do better in life. Males generally achieve a higher position in the hierarchy and females tend to become better mothers.

How do you explain that?

The offspring of supportive mothers are clearly more self-confident. They dare to try more and don't give up, even after losing four or five fights against stronger opponents. This brings them farther up the hierarchy.

You also observed in chimpanzees what you call "the dark side" of primates: violence, fights to the death, territorial wars between rival chimpanzee groups that lasted for years.

That was only after a few years and it was shocking for me. Up to then I thought that chimpanzees were like us, but more noble.

The noble savage?

Exactly. And then this brutality, I even witnessed cannibalism. It was really horrible.

Were there times when you were afraid?

There was a time in the late 1980s when several of the males were very aggressive, real bullies that harassed and intimidated the others. The most aggressive of them, Frodo, pushed me down, beat me and stomped on me. It's clear to me that he didn't want to injure me seriously or kill me, because I wouldn't be here if he did. Frodo wanted to prove his dominance. His aggressive behavior made him the alpha male. But I also experienced how altruistic chimpanzees can be.

Could you give an example?

One time a chimpanzee mother died not long after she had given birth. That would have been a death sentence for the orphan. She never could have survived without a mother. But then the orphan was adopted by another female who didn't benefit from it personally in any way. Pure selflessness.

With chimpanzees, moving up in the hierarchy and being as dominant as possible obviously plays an important role.

Does that remind you of humans?

Yes, male chimpanzees exhibit many behaviors that we also see in politicians:

showing off, swaggering around to make themselves appear big and powerful. The presidential debate between Donald Trump and Hillary Clinton is a good example. You could see his display behavior when she was speaking. Don't misunderstand me: I'm not comparing Trump to a chimpanzee. I'm simply saying that he was displaying a behavior similar to that of male chimpanzees when they want to become the alpha male.

You managed to assert yourself as a young woman in a male-dominated world. What advice would you give young women today?

The same advice my mother gave me: If you really want something, then you have to be prepared to work very hard, take advantage of opportunity and never – never – give up. □

And then
this
brutality.



“BETTER THAN JURASSIC PARK”

If molecular biologist **GEORGE CHURCH** has his way, one day tens of thousands of huge elephants with woolly pelts will once again range across Siberia.

By Mathias Plüss (interview) and Ping Zhu (illustration)

Mr. Church, you want to resurrect the mammoth, right?

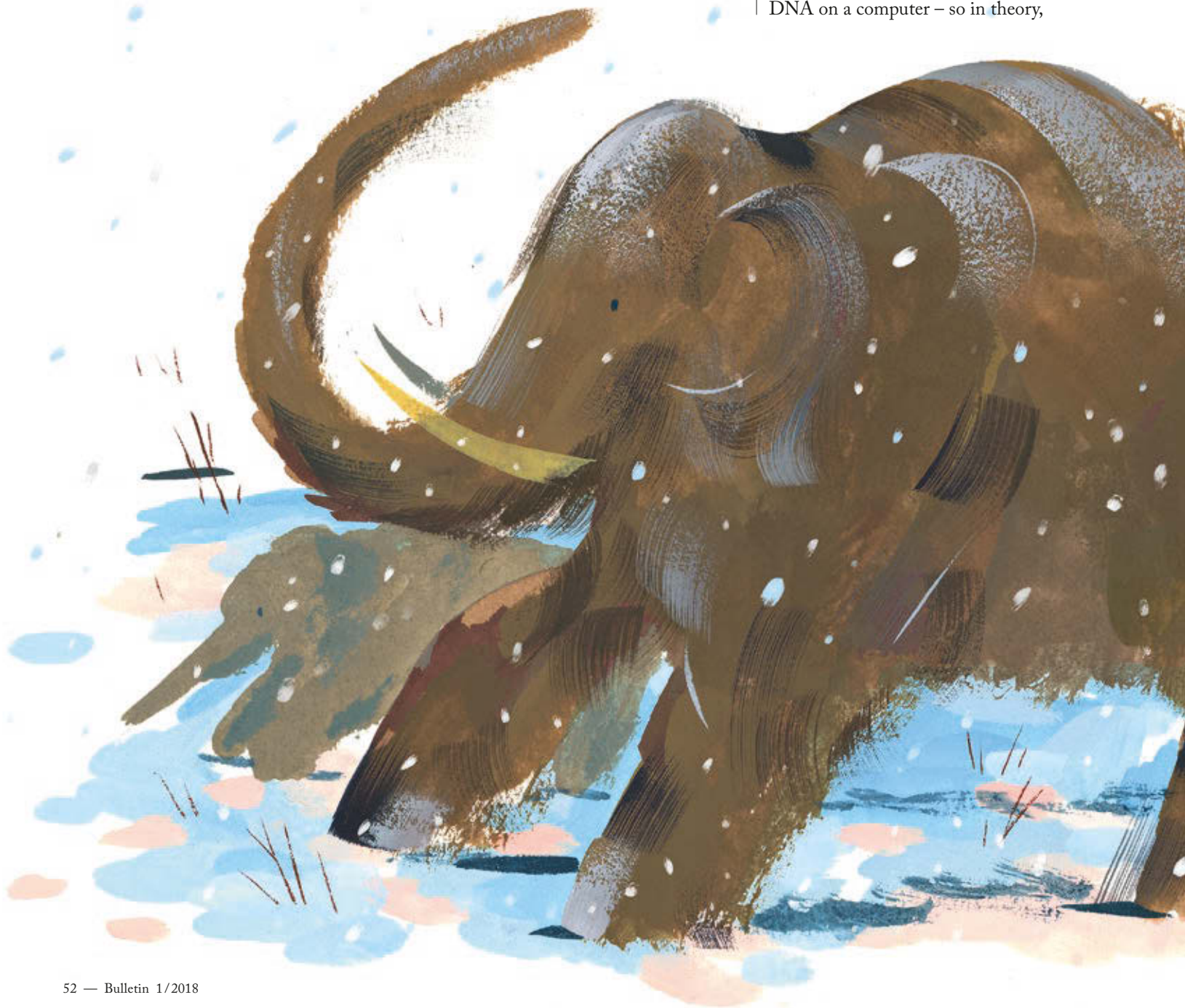
No, not quite. We're taking individual mammoth genes and splicing them into the genetic material of Asian elephants.

That means you're creating an elephant-mammoth hybrid?

In a sense, yes. We call it a mammophant in layman's terms.

Would it also be possible to clone mammoths directly?

The woolly mammoth died out four thousand years ago. Even the best specimens dug out of the permafrost have sustained damage to their genetic material. But, ultimately, that's not the real problem: With our technology, we can cobble together and synthesize damaged DNA on a computer – so in theory,



we could recreate the entire mammoth genome. But we don't want to do that. We want to create a creature that is adapted to modern ecosystems.

Which genes do you want to insert into the elephant genome?

We're currently talking about approximately fifty genes that primarily have to do with cold resistance. This means genes that code for a thicker layer of fat, smaller ears, long woolly hair and blood vessels that are adapted to the cold. Moreover, we want to make the mammoth resistant to certain viruses and give them smaller tusks to reduce pressures from hunting. We've proven with pigs that this technology works.

What would mammophants be good for?

On the one hand, we want to help the endangered Asian elephants by adapting them genetically and opening up massive new habitats, the tundra and the taiga.

And on the other hand?

We want to optimize the northern ecosystems. We're talking here about 1,400 gigatons of greenhouse gases that are threatening to leach out of the ground if warming continues. The Russian geophysicist Sergey Zimov and his team have demonstrated that the soil temperature can be cooled by twenty degrees by letting grasses replace trees and having herds of grazers live and feed there. As a result of the animals' presence, the insulating snow layer is broken in winter and more heat is reflected in summer.

Don't species adapt themselves to changing ecosystems as part of evolution? Is human intervention really needed?

Some ecosystems change too quickly, or they contain species with characteristics that run counter to human objectives – take the massive spread of zebra mussels or rabbits, for example. In the case of cold deserts, we need the right species of herbivores with their specific movements to maximize carbon sequestration in the soil.

How many of these animals will it take?

A good goal would be 80,000 specimens. Mammophants would already be useful in

low densities because they push over trees and could make the habitat accessible for other grazers such as caribou, bison and horses.

What's the most difficult part of your project?

Growing tens of thousands of mammoth embryos in the lab. We're working on an artificial womb of sorts to grow the embryos in. This way we can spare the existing elephant population because we wouldn't need any females to carry the mammophants. We're currently developing the process with mice. The difference is that mice have a gestation period of twenty days, while that of elephants is 22 months.

When will be the first mammophants be released into the wild?

In 20 years at the earliest. It takes six years of research and development, two years of gestation and 12 years of maturing until the mammophant reaches a size where it could be released.

You're conjuring up memories of John Hammond in "Jurassic Park," who created living dinosaurs in his theme park and it went dramatically wrong...

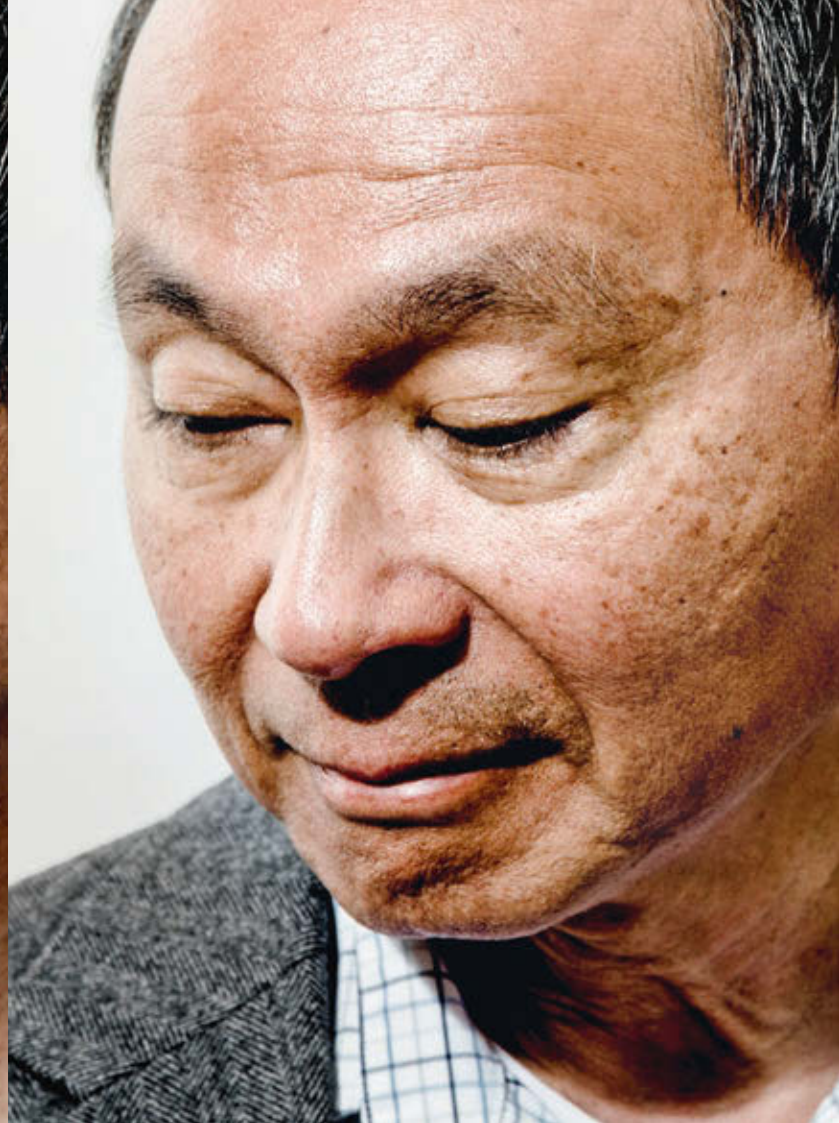
Pleistocene parks already exist and they're better than Jurassic Park, because they don't include carnivores and work on re-creating ecosystems instead of entertainment. □

George Church, 63, is a molecular biologist and professor at MIT and Harvard University in the US. He is a pioneer of genome sequencing and remains one of the most innovative minds in developing new methods of gene technology.



“The return to the past”





The author of the classic work “The End of History” was compelled to revise his opinion: **FRANCIS FUKUYAMA** sees gloomy times ahead. Populism is threatening political institutions; the global economy will suffer; small countries such as Switzerland are coming under pressure.

By Simon Brunner, Lucia Waldner (interview),
and Carlos Chavarria (photos)

Mr. Fukuyama, you are considered one of the foremost political commentators on current events. What do you think of the world today?

I'm afraid we find ourselves in a precarious situation. We are coming out of a decades-long period in which a liberal, international world order took shape. It was very successful, based on free and open economic regions and on liberal democracy as the form of government. These achievements have been under attack for around a decade, and the pace has picked up in the last few years.

Where is that discernible?

On the one hand, in authoritarian regimes that vigorously assert themselves and promote undemocratic ideas.

On the other hand, populism* is raising its head in many Western democracies. I include the Brexit referendum here and the parties now governing Hungary, Poland and other Eastern European countries. But populism is also reaching Germany and France, and I would place our president here in the United States in this category too.

Most of these politicians were democratically elected. Why do they nevertheless pose a danger to the rights of the people?

They are skeptical of institutions and want to take power away from them. Furthermore, they categorize people according to ethnicity or religion or race. In India, the ruling

BJP defines the country as Hindu – despite the fact that far more than 150 million Muslims live there. There are these currents in the Middle East as well, where Islamic parties regard religion as a means to define the political agenda in their favor.

What effect does this have on the global economy?

These people are economic nationalists. If the protectionism that they often threaten becomes a reality, it will have bad economic consequences. This is where we are now.

In one essay, you compare the current situation with the time after 1930, the period leading up to World War II. Isn't that somewhat exaggerated?*

I'm not saying it will end up as it did then. Fascism and war were possible because democracy in Germany was still quite young – it had only existed since 1919. Our institutions today are on a solid footing. But I do think there will be an erosion of democratic norms. And the risk for the global economy is real.

But the economy is booming at an almost unprecedented level.

The current changes are still relatively fresh; just wait a while longer. But you are right insofar as the United States is now in its ninth year of growth since the financial crisis. According to all indicators, we are doing very well. Never-

“The risk for the

theless, Donald Trump was elected with the claim that the American economy was in ruins.

There's a difference between macroeconomic considerations and the fate of the individual.

That's true. Not everyone benefited from the upturn. In the more prosperous countries, many people, and specifically older people, lost their jobs when production was outsourced to poorer countries. But the cultural dimension is also important: Almost every Western country has experienced

an unprecedented wave of immigration in the past ten to fifteen years. This comes as a shock to many citizens, and they fear that their national identity is being lost. This is especially the case for people from what was the middle class, who increasingly bear the brunt of it.

Populist parties are currently attracting support from young voters as well. Why?

Many of the countries in eastern Europe have relatively young population structures; most people were born after the Wall fell, and they haven't experienced commu-

* According to Fukuyama, political scientists lack a consensus about the definition of populism, but three characteristics have often been identified: Politically, populists pursue measures that are popular in the short run; their regimes would exclude certain segments of the population according to ethnic, religious or racial criteria; and they tend to develop a leadership style based on a cult of personality and a direct relationship with “the people.” His essay about populists can be downloaded here: credit-suisse.com/ResearchInstitute → “The Future of Politics”.

nism or dictators. These young people have no appreciation for the European Union and democracy. In the United States as well, studies show that the younger generation generally have less faith in democracy than their parents do. This worries me.

If you were the president of an imaginary Western country, how would you approach the issue of immigration?

The advantages of diversity come into effect only if the foreigners adapt to our open, liberal culture. This includes the democratic institutions and the rule of law. It is important to define and implement such an identity.

You are a good example of successful immigration.

Right. My grandfather emigrated from Japan to the United States at the beginning of the 20th century. My father grew up here, and he still spoke some Japanese. I can't speak a word of it any more (*laughs*). Certain countries make it very difficult for someone to become a citizen, or they impose ethnic eligibility requirements. In other countries, the classes in school are composed according to religious affiliation. These are obstacles to integration.

There is also the theory that here in the west, "democracy fatigue" prevails because the systems are sluggish and inefficient.

Do you agree?

Is this a real danger?

Yes. More protectionism in the world will hit Switzerland very hard, and very soon.

What are the political consequences?

I know that there are also populist tendencies in Switzerland. But it is a country that has historically benefited greatly from openness, and that actually represents the original model of ethnic diversity. I hope it can maintain this tradition.

What role does Europe play in the world?

It must remain the anchor for democracy and for liberal values.

You became world-famous in 1992 with your book "The End of History." There, you put forward the thesis that the principles of liberalism, namely democracy and the market economy, will ultimately prevail everywhere. How has your view of the world changed since then?

I later wrote a two-volume book about the political world, in an effort to revise "The End of History and the Last Man." There are a few fundamentally new things, for example the concept of political disintegration. I am now much more aware that democracies can also regress. And I have a greater understanding of how fragile modern states are. History shows how unbelievably

global economy is real."

Yes. The rise of the populists can certainly be linked to the fact that our democracies have not always produced such good results – I'm thinking here of the US, of Italy, Japan or India. In all of these countries, the result is a longing for the "strong man." Somebody who takes charge and cleans house.

Would somewhat less popular participation and a bit more technocracy, à la Singapore, be a possibility for western countries?

Somewhat more technocracy would certainly be good. Unfortunately, the populists mostly tend in a different direction: They corrupt the quality of their governments and appoint their friends and loyalists to positions of power.

Is there a concept that will replace globalization?

If you listen to certain politicians, their answer is clear: nationalism. It is a return to the past. Granted, it's not an international movement, like communism in its day, because each country has its own past and uses that to orient itself. But there is a common thread. It is the rejection of what the populists mean by globalism: the open, connected world and international institutions.

What role does Switzerland have in a less globalized world? The country has no domestic market to speak of, and it relies on exports.

The answer is short: Switzerland's very large companies will not survive in a more nationalistic world.

difficult it was to create our nation states. But it is much easier to destroy them. This was not as clear to me 25 years ago as it is today. □

Francis Fukuyama, 65, is a professor of political science at Stanford University in California. The Washington Post lists him as one of the five most important intellectuals in America. Fukuyama is married and has three children.

THE SME SURVEY

Five innovative Swiss
companies on vision, quality
and ideas.

— Visionaries —



GERY COLOMBO, 52,
CEO and co-founder of
HOCOMA / founded in 2000 / Volketswil
in the canton of Zurich / >150 employees

Hocoma is the global market leader for the development, production and distribution of robotic and sensor-based devices for functional movement therapy.

What was your vision when you founded your company?

To develop a robot that can perform difficult manual work, thus improving the quality of the therapy. The “Lokomat” was the first of its kind. It can help neurological patients learn how to walk again.

How can a Swiss SME become a global market leader?

The same as everywhere: with new, unique and revolutionary ideas. But we Swiss also benefit from Switzerland’s network of skilled partners with a high level of education.

What is your goal for the next five years? What visions have you not yet turned into reality?

We are working on networking our devices and developing comprehensive services in order to be able to provide a holistic solution. We are pressing ahead with sales in China. And we plan to go public in the next few years.

Generally speaking, what’s more important: The idea or its implementation?

In the end, even the best idea is worthless if its implementation is flawed. So both are equally important, but it’s just that the idea comes first chronologically.

What does Swiss quality mean to you?

Swiss quality has an impact on the entire value chain. Swiss entrepreneurs understand that the overall product can only be as good as its weakest part; having a few nice features is not a sign that the overall quality is high.



RICCARDO BRAGLIA, 58,
Vice Chairman and CEO of
HELINN GROUP / founded in 1976 /
Lugano / 645 employees (globally)

Helsinn develops and sells drugs and applications for the treatment of cancer patients.

Improving the lives of cancer patients and their loved ones. The company was founded by my father, based on my grandfather’s ideas. Family values are important to us: respect, integrity and quality.

We believe that these values are the reason why we are the global market leader in our field. This has enabled us to build up a unique network and understand the needs of cancer patients.

With our recently developed Pracinostat program, we are focusing on the entire range of cancer treatments. The aim is to work with our partners to prepare this program for market launch in the next five years.

I’ll answer that with my favorite quote from Thomas Edison: “The value of an idea lies in the using of it.”

For us, quality is at the heart of everything we do, from R&D and manufacturing to the appreciation we give to our employees.



NATHAN ANDERSON, 35, CEO of **SCANTRUST SA***/founded in 2014/
Lausanne/30 employees

ScanTrust offers protection against counterfeiting as well as supply chain visibility to combat fake merchandise and illegal trade.

As consumers, we discovered that there were no tools available to learn more about a product: Where does it come from? How and where was it produced? Is it authentic, and, above all, is it safe to consume?

For us, it all starts with challenging accepted standards. We provide trademark owners and consumers with an unprecedented level of transparency with respect to supply chains and distribution. And no special hardware is required.

We see a future in which all consumer products and industrial goods can be assigned a secure digital tracker that enables consumers and inspectors to review them using their smartphones.

In the world of safety and supply chains, implementation is everything. A great idea that is not cost-efficient to implement and easy to use will have little global impact.

Our headquarters in Lausanne serves as our global R&D center. Access to modern testing and research facilities with experts in anti-counterfeiting and printing technology is essential to our growth.



GABRIEL BOSCHUNG, 57,
MARCEL BOSCHUNG, 61, owners of **BOSCHUNG HOLDING AG**/founded in 1947/Payerne/550 employees

Boschung develops, produces and distributes products worldwide for collecting and removing black ice and snow as well as for clearing roads and airports.

Our original idea of developing equipment, vehicles and systems for maintaining roads, airports and cities is still the same to this day.

We did not set out to play a leading role on the global market. As a result of our innovations and the successes they enjoyed around the world, we automatically became a sort of global market leader in various niche markets.

Our focus is on alternative engines for vehicles and equipment as well as the semi-automatic steering of them. Our sensors for recording road conditions will be an essential component of intelligent roads and autonomous driving.

New and alternative ideas will come from global communication with our users – and it will be up to us to implement these ideas. The question is always: What is feasible on the market?

Swiss quality is what sets us apart. It means that we bring together all of our components in Switzerland in order to be able to develop technologically high-quality products for the future.



JOHANNES RECK, 32,
CEO and founder of **GETYOURGUIDE**/founded in 2009/
Zurich and Berlin/>400 employees

GetYourGuide is an online portal with some 30,000 tours and activities for more than 2,500 destinations around the world.

The original aim of our website was to offer students as inexpensive guides to other students. However, it turned out that professional providers of leisure activities were more in need of a platform, so we adapted our idea.

By staying on the ball and constantly developing. We hope to position ourselves like Airbnb did with vacation homes. We are working hard to develop a product that will change the travel experience over the long term.

People are increasingly booking activities on the go: Vacationers want to book activities locally and in real time. Our aim is to achieve further growth in mobile apps and to develop more as a travel guide than as a pure ticket platform.

A good business idea is the basis for commercial success. But the way this idea is implemented is even more important. The best advice for company founders is to network and invest a lot of time in finding partners.

We aim to make our site in Zurich the heart of the engineering team, and it will play a leading role in our expansion plans.

My

Best
Idea

Great designers
talk about
their most important
work and the long
path to perfection.



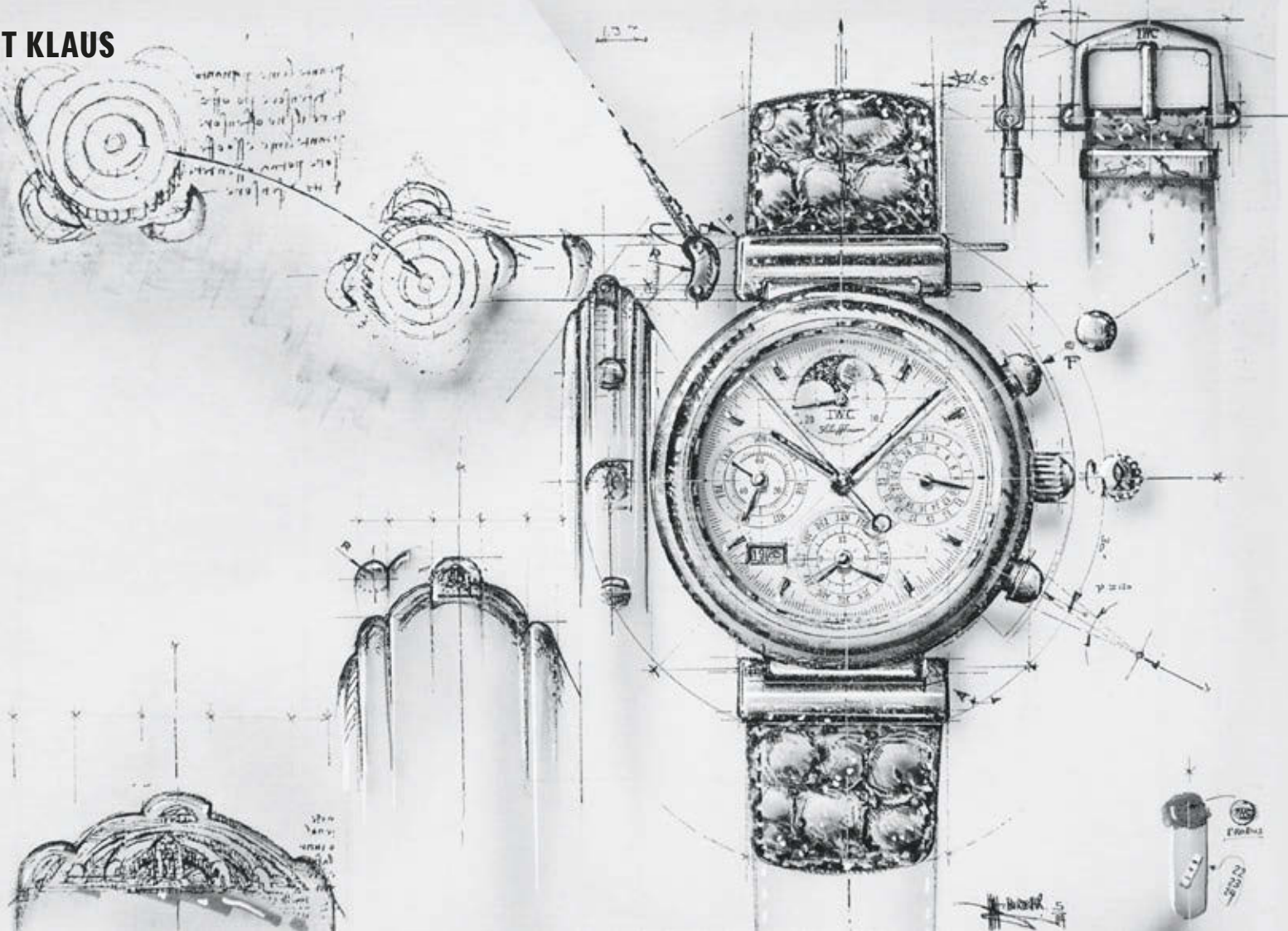








KURT KLAUS



PHILIPPE STARCK

Photos: IWC International Watch Company; Starck

often reduced women to objects to be looked at. The bottle for my first fragrance, 'Woman Pure,' was emblematic of my approach."

"Would you say that one of your early goals was to make fashion more democratic?" – "Yes. That also led me to accept an offer from the Japanese clothing chain Uniqlo – although I had other options – to design a line intended to make high-quality fashion affordable to a broader range of customers. The vision was to provide a sense of modernity and an appeal that was independent of the customer's income level and would be universally understood and respected."

"The way you achieved that vision was quite revolutionary." – "My quilted down jacket created an international trend. At the time when I included it in my +J collection for Uniqlo, such jackets were found only in specialty shops for mountain climbers. But their outdoor-inspired features are ideal for everyday life. These jackets are lightweight, they keep you warm without overheating, and with the right cut, they create a dynamic silhouette."

Jil Sander, 74, is an internationally recognized German fashion designer. She was awarded Germany's Federal Cross of Merit (1995), is an honorary member of the Deutscher Designer Club (2012) and has received countless other awards and honors.

NADINE CHAHINE, type designer **"A VEHICLE FOR A LARGER CONVERSATION ACROSS CULTURES"**

"What vision guides your work?" – "To design a typeface family that encompasses both

the Latin and Arabic scripts, one must treat them as equals."

"You were the first type designer to embrace this idea. How did you come up with it?" –

"I grew up in the Lebanese civil war and witnessed firsthand how destructive cultural and religious clashes can be. We need to accept our differences and find a way to live together in peace – on the page, on the screen and in real life."

"Are you saying that a typeface can promote international understanding?" – "Exactly. Design is a vehicle for a larger conversation we need to have across cultures."

In 2012, **Nadine Chahine**, 39, was included on the list of the 100 Most Creative People in Business by the magazine Fast Company. She has received a variety of other awards, including two for Excellence in Type Design from the Type Directors Club in New York. Chahine lives in London.

MICHAEL MAUER, automobile designer **"THE ANSWER TO EVERY QUESTION"**

"What was your most visionary idea?" – "The 918 concept car and the production model that followed: the 918 Spyder."

"What is so important about the 918?" – "It went far beyond mere style. It was truly a visionary concept that broke new ground – not only for us, but for the entire automotive industry. At the time, environmental organizations were questioning the future of sports cars, and the Volkswagen Group was in the process of acquiring Porsche – so it wasn't clear whether we would even be able to continue to build real sports cars. The 918 was the answer to every question."

"How so?" – "The 918 is a supercar that had no real competition when it entered the market, and driven properly, it consumes only about as much fuel as a compact car. It demonstrated that a supercar and concern for the environment need not be mutually exclusive."

Michael Mauer, 55, was described by the German broadcaster SWR as "one of Germany's most important automobile designers." He has been with Porsche since 2004 and today heads the design departments at Porsche and VW.

PAULA SCHER, graphic designer **"A CHARACTERISTIC FEATURE OF THE NEW YORK CITY LANDSCAPE"**

"How did you come to recognize the importance of a visual language?" – "At some point I realized that businesses, products and institutions can be recognized by certain moveable typographic components, and not just by fixed logos."

"Why is that important?" – "It's important in creating a visual language that is both instantly recognizable and flexible enough to be used in many different ways as a company expands and evolves."

"How did you discover the importance of these typographic systems?" – "I was hired to develop a new identity for the Public Theater in New York that reflected its broad range of programs and activities. Everything had to be recognizable as coming from the same place. I selected a font style that was based on American Wood Type – which subsequently became

✓

JIL SANDER, fashion designer **"THE OPPOSITE OF SEXISM"**

"What was your most visionary idea?" – "My design is rooted not so much in an idea as in an attitude. It's always been about deciding what to leave out rather than what to add. I've chosen to go in the opposite direction from the sexism of post-war fashion, which was preoccupied with ornamenting women's clothing. I wanted to give my designs a dynamic quality and make it easier for women to move, also in the sense of their career. In the past, fashion

✓
a characteristic feature of the New York City landscape. Keep an eye out the next time you visit New York.”

Paula Scher, 69, is a graphic designer, painter and art educator. She created a number of familiar logos – for CNN, Windows 8 and the Museum of Modern Art (MoMA), among others – and has designed some 150 record covers, including albums by such prominent musicians as Bob Dylan, Charles Mingus, Keith Jarrett, Paul Simon and Boston. Scher has received countless awards and honorary doctorates. She is a partner in the legendary design firm Pentagram.

TADAO ANDŌ, *architect*
“ROLLING WITH THE PUNCHES”

“What drives your work?” – “One of the most significant decisions in my life was not to allow the limitations of my environment and background to hold me back. I see life as consisting of a series of walls, with more and more effort required to tear down each one.”

“Can you elaborate on that?” – “I grew up in a working-class district of Osaka, Japan, with little access to education or art. Before I became an architect, I was a professional boxer. Although I didn’t have the chance to study at a university, I had the determination necessary to roll with the punches and fought to educate myself. It was difficult, but I chose to view my situation not as a disadvantage, but as a source of motivation. That is still my attitude.”

“Where do you find your inspiration?” – “When I was a child, I would occasionally walk past construction sites. Sometimes the workers

would skip lunch in their effort to make sure that the building was constructed to the very highest standards. I’m continually inspired by this kind of commitment, especially when it comes to new projects. Over the years, I have always pushed myself to design entirely new kinds of buildings. They include the Church of Light in Osaka [see photo on p.65], the Row House in Sumiyoshi, the Rokko Apartment Complex in Kobe, the artistic sites on Naoshima Island, the Punta della Dogana museum in Venice and the Bourse de Commerce in Paris.”

Tadao Andō, 76, is one of the world’s most important architects. His work is known for its minimalist aesthetic. Andō won the Pritzker Prize, architecture’s highest honor, in 1995. He has taught at a number of universities and is active in environmental causes.

KURT KLAUS, *watchmaker*
“WE HAD NO CHOICE”

“What idea are you especially proud of?” – “It was at a very difficult time for the Swiss watch industry that I had my best and most visionary idea: IWC needed to find an extraordinary product to demonstrate that there was still a reason for mechanical watches to remain on the market, despite the boom in quartz watches. In 1985 we developed an easy-to-use perpetual calendar that could be manufactured efficiently.”

“Why was that so important?” – “It allowed us to produce a larger number of complex, yet also user-friendly watches.”

“How did you come up with that idea?” – “A powerful man once said, ‘It takes

a crisis to bring out the best ideas.’ We had no choice – we had to come up with something.”

Kurt Klaus, 83, is a living legend in the watchmaking industry. He spent his entire career with the Schaffhausen-based watch manufacturer IWC (International Watch Company). Although Klaus officially retired in 1999, he continues to work on what he calls “secret watch projects.”

PHILIPPE STARCK, *designer*
“I’M NOT SAVING LIVES – BUT I HAVE A MORAL COMPASS”

“What drives your work?” – “I’ve always wanted to learn more about the mystery that lies at the heart of everything, the minimum that makes us who we are, the soul – although I don’t like to use that word. To put it in more mundane terms: Design is like a car, but it can’t move without an engine.”

“Why is this insight so important?” – “The future is about dematerialization – the more materiality, the less humanity. In my Generic collection, I was searching for the minimum – the square root, as it were – to unlock the essence of the object. This approach is interesting intellectually, but also in terms of economy and ecology.”

“What statement are you trying to make with your designs?” – “Design today is often useless. It can improve life and make it a little more beautiful, but it can’t save lives. I didn’t choose design; it chose me. I’m proud of the quality of my work – within my bubble, which has become totally unimportant. The problem is, I can’t do anything else, so I try to achieve the greatest possible political impact with my

work. The Generic collection is part of a moral effort. I’m not saving lives – but I do have a moral compass.”

Philippe Starck, 69, is a French designer and one of the best-known exponents of New Design. Starck designs practically everything – ranging from buildings and furniture to motorcycles, and from home decor to simple utilitarian goods.

“HOW UNBELIEVABLY BEAUTIFUL”

VALENTINA TERESHKOVA was the first woman in space. No piloting experience required.

By Mary Dejevsky



In 1963, you were the first woman in space. How did your career begin?

I had always wanted to go skydiving, and I joined a flying club at age 18. It was a paramilitary flying club that was well known in Russia. I didn't tell my mother at first, but I trained practically every weekend. I completed more than 90 jumps to land or water – not just by day, but by night as well.

How did you come to be selected by the Soviet space program?

The Soviet Union wanted to recruit women to become cosmonauts. The most important criterion was being able to parachute. The spaceship pretty much flew itself, but you had to be able to parachute from the craft to land. There were five of us women who were tested, and I was the one selected. But there was no jealousy. Even today, there's still a bond between us, a camaraderie that never goes away.

What goes through your head when you're floating through space and look down at the earth?

Everyone who has been in space, regardless of where they're from, says the same thing: How unbelievably beautiful the Earth looks from space. You understand how very important it is to preserve the planet.

What effect has your space voyage had on your life?

I go around the world to meet as many people as possible, to talk to people and establish a connection with them. I tell them that we have to do whatever we can so as not to spoil our planet. People shouldn't waste money on wars, but rather come together to discuss how to defend the world from cosmic threats and asteroids. The next big threat from an asteroid is in 2029. Let's hope it doesn't hit the earth. □

In 1963, **Valentina Tereshkova**, 81, became the first woman in space, and she is the only woman in the history of space flight to undertake a solo flight.



“MEGATRENDS?” — “PERFECT!”

He coined the terms “megatrend” and “globalization”:
JOHN NAISBITT and his wife and co-author, **DORIS NAISBITT**, on their greatest invention.

By Simon Brunner (interview)
and David Payr (photos)

Mr. and Mrs. Naisbitt, you developed the field of future studies. How do you explain to a child what a trend is?

DORIS NAISBITT We tell our granddaughters Leonie and Cosima that trends are the direction in which things are moving. For example, not too long ago everybody used text messages to communicate. Text messages were trendy. Then they were replaced by new message services like Facebook Messenger, WhatsApp, WeChat, Snapchat and Instagram. And you can add emojis to these messages to show how you feel. In short, text messages have fallen out of fashion and been replaced by a new trend.

And when does a trend become a megatrend?

DN When the trend involves, to take this example further, not just the individual apps, but instead involves something bigger: a change in information technology. The internet enables us to use smart phones and new message services. You can stay in touch with multiple friends at the same time, no matter where you are or where they are. Trends come and go, but megatrends are developments that change our environment and stay with us for a long time.

How did you come up with this concept?

JOHN NAISBITT At the end of the 1960s, I was working for President Lyndon B. Johnson as a special assistant. Although I supported his Civil Rights Act, which provided legal equality to African-Americans, I was against the Vietnam War. I quit and started looking at what interested me – the future of America.

How did you go about doing this?

JN Those were difficult times for America – with mass violence, riots and looting on a daily basis. To get a picture

of where my country was headed I founded the Urban Research Corporation. We analyzed around 100 local and national newspapers: Reading those newspapers was like looking at the pieces of a puzzle, and we were trying to put the pieces together correctly.

What did you find?

JN That America was in a restructuring process. The conventional was obsolete and the new had not yet fully evolved. There was no vocabulary for the transitional phase and, more importantly, the new world. I ended up with ten major pillars – the “megatrends” of the transformation.

These included the shift from an industrial to an information society, and you also coined the term globalization. How did you come up with the groundbreaking title of your book?

JN We were nearing the publication deadline, but we still didn't have a title. My editor called me and said just one word: “Megatrends?” And I said: “Perfect!”

You additionally popularized the field of future studies. How has it developed since then?

JN First, future studies has expanded in an inflationary manner, with the basic idea now diluted. Megatrends, or “broad outlines,” can only be anticipated by studying the present global situation and putting together the small pieces to form the bigger picture. Megatrends by nature do not appear every year, as consumer trends do.

And second?

JN In the 1980s, outside-in views dominated. People focused on the changing context, then they looked for a personal connection and developed business opportunities from this. Now it is the exact opposite. People are focused on themselves with an inside-out view. The context is only relevant if it has short-term benefits. And megatrends will be neglected if they do not match up with preconceived notions, the desired thinking or mainstream ideas. □

John Naisbitt, 89, published his book “Megatrends” in 1982. It was published in more than 57 countries, with 14 million copies sold. Naisbitt, a US citizen, popularized future research and the concept of globalization. Prior to that, he worked for US Presidents John F. Kennedy and Lyndon B. Johnson. **Doris Naisbitt**, 66, is an author (of seven books written together with her husband, John) and teaches at various Chinese universities. The couple lives in Austria and China.



WHERE DID I HEAR THAT?

Ten visions, predictions and dreams –
but who said what?

1

“I have a dream.”

2

“A goal is not always
meant to be reached,
it often serves simply as
something to aim at.”

3

“It does not matter how
slowly you go as long as
you do not stop.”

4

“I have nothing to offer but
blood, toil, tears and sweat.”

5

“When the vision of the
'Nude' flashed upon me,
I knew that it would break
forever the enslaving chains
of Naturalism.”

6

“Everyone has his own idea
of good and evil and
must choose to follow
the good and fight evil as he
conceives them. That would
be enough to make the world
a better place.”

7

“There is not the slightest
indication that nuclear energy
will ever be obtainable.”

8

“You are here to enrich
the world, and you
impoverish yourself if
you forget this errand.”

9

“My father taught my siblings
and me the importance of
positive values and a strong
ethical compass.”

10

“You may say I'm a dreamer.”



A

Winston S. Churchill

B

Confucius

C

Ivanka Trump

D

Pope Francis

E

Woodrow Wilson

F

John Lennon

G

Martin Luther King

H

Bruce Lee

I

Marcel Duchamp

J

Albert Einstein

Illustration: Golden Cosmos

Answers: 1G, 2H, 3B, 4A, 5I, 6D, 7J, 8E, 9C, 10F

Our Commitment to Lower Youth Unemployment.

Through the initiative to tackle youth unemployment, Credit Suisse has been committed to improving the opportunities for career starters in Switzerland since 2010. More than 8,800 young adults have already received assistance from our partner organizations and from the bank. Since April 1, 2015, these services have been supported by the legally autonomous "Check Your Chance" association and managed sustainably by the partner organizations.

credit-suisse.com/youthunemployment

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