

# Bulletin

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**Risk** – The Brash, the Bold and the Brave



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# Risks May Include the Following Side Effects ...



## 1 Wolf Lotter

Is risk good? Oh, yes. Journalist and author Wolf Lotter, a co-founder of the German business magazine brand eins, is a passionate believer in risk. New beginnings are the Austrian's personal favorite type of risk. "I can't imagine doing the same thing or living in the same place until I die." *Page 12*

## 2 Stefan Krücken

The journalist and publisher's reporting has taken him to more than 80 countries. For Bulletin, he writes about crab fishermen in the Bering Sea, who risk their lives for the expensive delicacy. *Page 36*

## 3 Hanna Kokko

The native of Finland is a world-leading evolutionary biologist. She lives in Canberra and is a professor at the Australian National University. Kokko describes what people could learn from spiders' risk strategies. *Page 52*

## 4 James Hamilton-Paterson

Writer and poet James Hamilton-Paterson, born in London in 1941, has traveled widely. When he first went to the Amazon in the 1960s there were still blank spots on the map of the region. Hamilton-Paterson believes that the term "adventure" has been ruthlessly commercialized. The down-to-earth Brit is rather skeptical of the "challenges" facing today's Humboldts and Darwins. *Page 68*

**A**re you sure? Do you really want to keep reading? The German Book Trade association has a provocative slogan, "Reading may be hazardous to your ignorance." It is a play on the warning found on cigarette packs in Germany ("Smoking may be hazardous to your health") and it shows that danger is not always something bad. Danger has its upside, too. It all depends on your perspective. This is even more the case for risk, danger's rational sibling. Risk is a frequently misunderstood and misused term. Risks in financial markets, energy production, the rain forest, even the food we eat – when people think about risks today, they anxiously focus on the downsides: collapse, failure and ruin. Who dares to warn, wins. Or so say the doomsayers and fearmongers. But this issue of Bulletin has a different theme: Nothing ventured, nothing gained. And sometimes taking risks can even change the course of the world, as shown by some of the women featured in this issue, as they changed the world with their courage and pioneering spirit.

**E**ven though courage can morph into cockiness in some areas, and frivolousness can overshadow reality, it would be disastrous to neglect the creative, essential side of risk – that of the opportunity for success and achievement. As they are first learning to walk, all children learn that they can fall on their faces. But they also learn to get back up and try again. That is the only way to make progress, as a person and as a society.

**W**riter Wolf Lotter calls his text in this issue "Risk: A Challenge." In fact, risk is brazen. It forces us to reflect, deliberate, assess and finally act. We also have to take responsibility. And we must do so with confidence. This is the sense of "challenge" we are using in this issue of Bulletin: daring to take risks.

And now you can decide for yourself if you want to read more. Do so at your own risk!

Your editorial team

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## Bulletin: Risk

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Snapshots of people who have just risked something.

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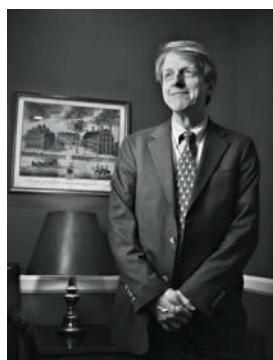
A plea for action, reason and optimism.

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Illustrated by Jörn Kaspahl.

**Cover:**

Stunt woman in Los Angeles (see page 7)



#### New in the App Store

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# Bold Moments

This is what it looks like when things get dicey, tricky or dangerous. We photographed people around the world just after they risked something.

Recorded by the editorial staff



**5:11 p.m., March 1  
Kangemi, Nairobi (Kenya)**

"I drove my taxi for 13 hours today, mostly in the slums of Kangemi. This is one of the poorest and most unsafe areas of the city. Five years ago, I was kidnapped, beaten and robbed. A friend of mine, also a Matatu driver, was killed in such an attack. It could happen any day here. But the corrupt police scare me even more. They always find a reason to take money from taxi drivers like me."

—Dancan Kimere Njoroge, 36, share taxi driver

**4:00 p.m., March 7**  
**Sanlitun Soho, Beijing (China)**

"I'm actually a scaffolder, but I was working in the elevator shaft today. The building is 37 stories tall, and it was a constant up and down. This job is very risky, certainly one of the most dangerous jobs there is. But I protect myself with a hard hat and a harness. You don't need to worry if you follow the safety regulations. Not even at high altitudes."

— She Qi Bin, 44, scaffolder



**10:01 p.m., February 23**  
**Casa Ensamble, Bogotá (Colombia)**

"Something can always go wrong in theater. Today, though, everything went perfectly. I didn't have stage fright, unlike some of the adult actors. Now I'm just tired, because we had two performances of the play today. It is called 'Habitación 3.3.3' and it's pretty crazy. In one scene, I have to shout at my mother; I didn't do a good job with that – it wasn't convincing. I would like to become a director one day. Do I have a role model? Yes, me."

— Martina Toro Perez, 10, actor, primary school student





**4:31 p.m., February 27**  
**Riff Raff Studio, Los Angeles (US)**

"I just jumped through a window in high heels and an evening dress. The trick is to break the glass with your elbows first, then your body follows. I cut myself a little bit doing this yesterday. But that's the way it should be: I get hurt, not the actor. I am always nervous before the stunts. I love that. It means that I am on fire, totally on the ball. In the moment of action, I can't feel a thing because of the adrenaline. Afterwards, I am excited and want more than anything to do it all over again."

—Heidi Pascoe, 36, stunt woman



**11:15 p.m., February 28  
Ataba fire station, Cairo (Egypt)**

"When we arrived at the fire, in a shoemaker's workshop, it had already spread throughout the entire house. It was extremely dangerous because of the chemicals in the workshop. We were able to save two people, but later we found six bodies. It will be a long time before I will be able to forget that sight. A firefighter can't be fearful. If you hesitate at the sight of flames, you will panic, and the situation will get out of control."

—*Essam Helal, 30, firefighter*

**3:07 p.m., March 1**  
**Gösslwand, Styria (Austria)**

"I began with a backward somersault, as an extra kick, because the jump from Gösslwand is not very difficult. There are about three seconds of free fall – the most wonderful moment in base jumping – followed by a minute with the parachute. I don't feel afraid; that only paralyzes a person. You need to have concentration and respect. For me, the risk is calculable. I don't do anything that I don't know I am capable of. This is the wrong sport for carelessness."

— Maria Steinmayr, 22, base jumper



**3:22 p.m., March 15**  
**Schloss Bümpiz, Berne (Switzerland)**

"There were no tears, but it was close. When Fabian said 'I do' to me, I could hear his mother also saying 'I do' ... That was strange, but very moving. We have been together for 12 years, off and on, so we know from experience that a relationship is never a sure thing. Our attitude toward marriage is pragmatic. Our decision to get married was a last minute one. Our child will be born soon, and that will be a big adventure."

*— Manuela Ruch, 33, flight attendant*





**1:17 a.m., March 1  
Cotai, Macau (China)**

"I will keep what I earned today for myself. I did pretty well. I played Omaha. It is more interesting than Texas hold'em. My strengths: I can read my opponents well; I usually notice when they are bluffing. I only take big risks when the game actually goes beyond my own financial means, but there is too much money at stake to walk away. But, in general, I am the kind of person who has control over his money – over winnings and losses."

—Sailesh Verma, 32, poker player

# Risk

## An Unreasonable Demand

We live in the safest world in history. Nevertheless, we see danger everywhere. This is exactly where our biggest risk lies: in losing courage.

By Wolf Lotter



WHAT IS THE BEST WAY TO MAKE CARS safe? By increasing the number of airbags and optimizing electronic driving aids? Californian economist Armen Alchian is looking in the opposite direction. He recommends removing seat belts and airbags, and replacing them with a dagger-like metal spike pointed at the driver's heart. The motto in a car like this is: If you brake suddenly, you lose your life in the worst case scenario. As a result, because every emergency stop is deadly, no one speeds anymore; everyone just putters along and the dangerous flow of traffic becomes a tranquil stream.

Alchian's mental game teaches us the logic of the balance of terror – something all too familiar from the Cold War. The nuclear cupboard was overflowing, and staying passive became a survival maxim. When any action ends in suicide, people do absolutely nothing to be on the safe side. Something might happen. Doing nothing makes sense in the case of

cars with daggers on the steering wheel and nuclear missiles. But otherwise? Particularly in times of crisis, which demand change and movement, inaction is suicide.

Inaction is typical for societies that have something to lose, like our Western culture built on consumption and wealth. German sociologist Ulrich Beck has dubbed this “the risk society.” It is a culture where fear is considered good form – as is abstinence.

When intellectuals, politicians and celebrities call for prohibitions and rules, they are considered as “responsible.” Are they not right in doing so? If you read blogs and newspapers or watch television, you get the impression that we have never lived in more dangerous times. Terror, war, the nuclear threat, climate catastrophe and poison in our food are proclaimed as potential hazards on a daily basis – and now you can add the financial and debt crisis to this list.

Hardly anyone speaks of a future anymore, much less of a good one. The risk society revolves around its own fears. It is self-sufficient.

As we all know, risks and opportunities are two sides of the same coin. You do not get one without the other. Risicare – the root of the word risk – was used by Italian seafarers to describe the method of navigating the shallows near the coast. Our industrious ancestors would never have let the threat of rocks discourage them from maritime trade. Risk is inherent, and we should deal with it pragmatically and rationally. Period.

In a society where people have something to lose, “no risk, no gain” applies only in certain circumstances. If you already have enough, you might not want to acquire more, and you will not want to risk anything. Maintaining the status quo is sufficient. Preservation is everything. This determines the character of entire societies and generations. >

Over the last four decades in which the risk society was formed, studies show that people's underlying trust in their fellow citizens has dramatically declined. In broad-based surveys in the mid-1960s, almost two-thirds of Americans still responded "yes" to the question of whether, generally speaking, they could trust others. Three decades later, less than 30 percent responded positively to this question. The risk society is a society of distrust. It discourages itself and robs others of their courage.

The rule of thumb is: Only by criticizing everything will everything turn out well. In "The Imperative of Responsibility" German-American philosopher Hans Jonas established that "to prioritize the bad over the good prognosis is to act responsibly with respect to future generations." By this doctrine, negative exaggerations have favorable results. This no longer has anything to do with criticism and constructive doubts. It is superstitious to believe that misfortune can be prevented when invoked long enough.

However, risk has nothing to do with fate. Risk researcher Otto-Peter Obermeier calls it "a rational response to an archaic feeling." People do not want to simply accept misfortune. They want to understand how it happened in order to prevent it happening again. The arbitrary nature of life is countered with reason, and Obermeier writes that, in this way, risk becomes a "concept based on empiricism and science derived from mythology-filled concept of fate." Risk is always calculated. It changes guiding principles. The old heroes, those warhorses so in vogue in ancient times until the end of the Middle Ages, are gradually replaced by the rational, pragmatic, logically thinking risk-conscious ones. Not heroes, but entrepreneurs now prevail – and they weigh up and distribute the risk of their projects onto many heads. Risk diversification has become typical of modern society, and we see it not only in insurance and the organization of communities. Even success is no longer a question of destiny.

This is good for people, but empty, too. There used to be more action. Citizens of the risk society are bored.

They yearn for danger; they artificially upset and excite themselves. It is a subtle form of protest against the culture of security. In the 50s, it was rock 'n' roll, followed by the Beatles, the Stones, youth culture and the hippies; the 1968 student movement; the punks and their antithesis, the yuppies; the fundamentalists; and everything else that stood up against the mainstream.

People need that rush – "rush" as in the slang word for when the drugs begin to affect the brain. And the high begins. Drugs are for people who are unable to bear reality, who perceive reality as lack-luster and boring. It does not always have to end with the needle. This also includes "adrenaline junkies," as athletes partake

# **The project of calculated risk was so successful that many today find it necessary to artificially create danger.**

ing in extreme sports call themselves. They seek dangers that hardly exist anymore in the modern world. In fact, the calculated risk project has been such a success that many today find it necessary to mourn the loss of danger and even produce it artificially. Modernity suffers because it offers people more wealth and security than any other era. And this is why people who avoid risk in their day-to-day lives will spend their weekends jumping from bridges on bungee cords or working their way up to nosebleed heights on mountain bikes. In the workplace, the top priority is risk avoidance, but the rush is obligatory for recreational activities.

Braking behavior and anxiety reign once again on Monday. One paralyzes, the other renders people stupid. In its Latin root, *angustia*, anxiety is equivalent in meaning to narrowness or constriction. Since the beginning of time, anxiety and fate have a mutually beneficial relationship. Anxiety is related to the incalculable and unknown, to everything that we are unable to change. Fear, on the other hand, is something different. It is related to something specific and real. Anxiety paralyzes, while fear leads to change.

Maybe the risk society of the old paradigm will soon be finished. It is unable to resolve the crises it helps to create, because they are essentially based in hesitation and trepidation, in indecision and obstacles. People seem to be well aware of this – as is evident in long-term studies such as the Credit Suisse Worry Barometer, where results regularly show that people are surprisingly optimistic. According to the latest survey, a majority of those surveyed believe that the economic situation is stable, and one-fifth of respondents think that things are improving.

A similar German study, *Die Ängste der Deutschen*” (German Fears), also found that people were quite op-

## Courage is the antidote to the crisis. People who show courage create optimism. This is precisely the drug that has become a scarce commodity in our society.

timistic in 2011, a year of crisis. This study's scientific consultant, political science professor at the University of Heidelberg, Dr. Manfred G. Schmidt, advises politicians to take a look at the results. According to Schmidt, people have developed a good sense of real problems and false risks. They should be taken seriously, Schmidt says; they should be “reassured.”

The point is this: to encourage, even when that seems to be an unreasonable demand to the believers of the old risk society, those who change nothing but criticize everything. Courage trumps anxiety and solves problems. Courage is the antidote to the crisis. Those who bolster courage, create optimism. This is precisely the drug that has become a scarce commodity in the risk society, so rare that most of us no longer know the use for optimism. It gives us the incentive to enjoy making decisions. In his book “Mut – Über sich hinauswachsen” (Courage – Rising above Yourself), Zurich psychologist Andreas Dick describes courage as “the realization, gained through wisdom and prudence, of what is right and what is wrong in a certain moment.”

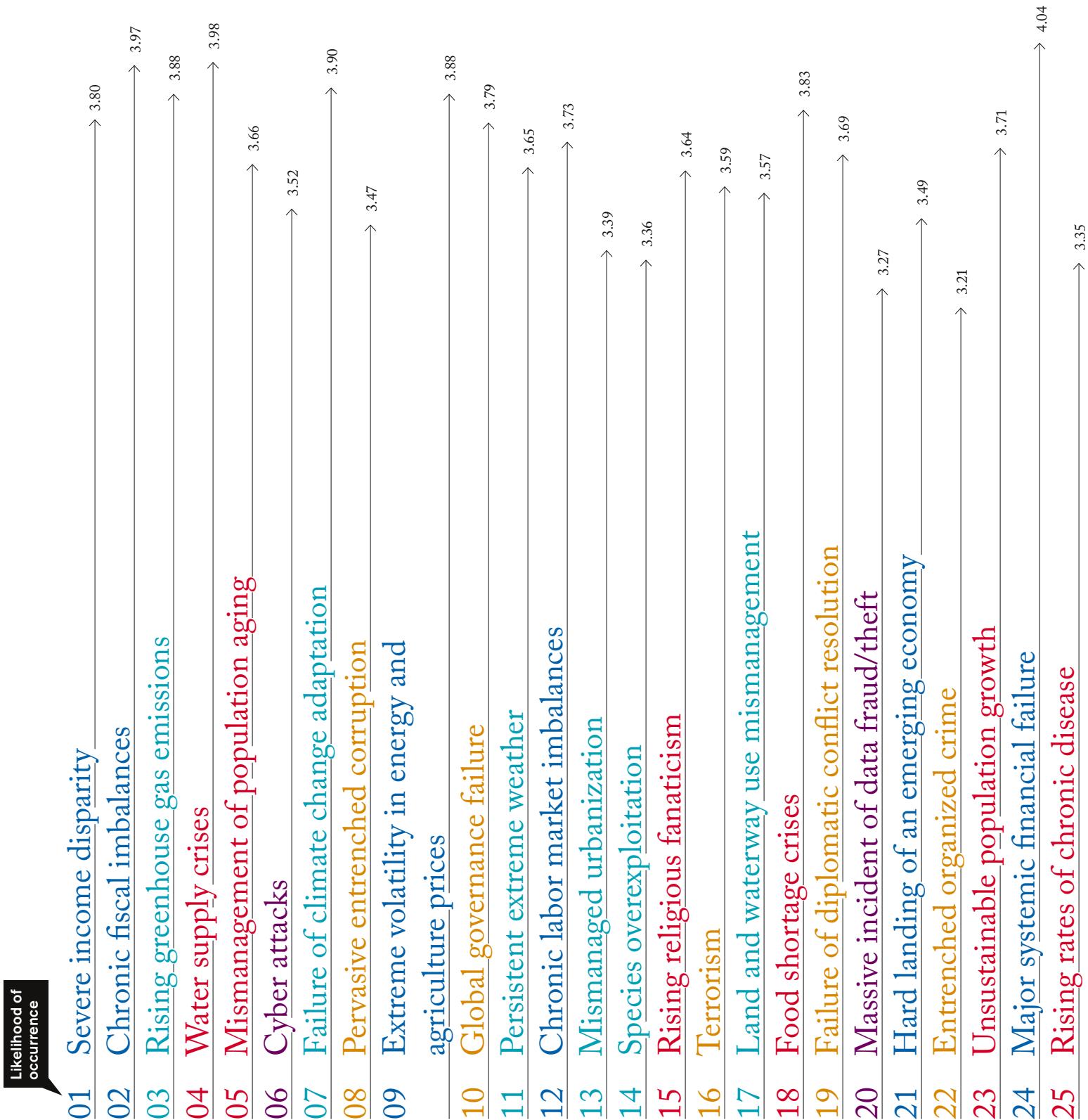
That is not a description of the feeling, but rather a plea for reason. We need insights like this – not the old heroes or

boring cowards who, as members of the risk society, prefer to dodge decisions because they intrude on their comfort zone.

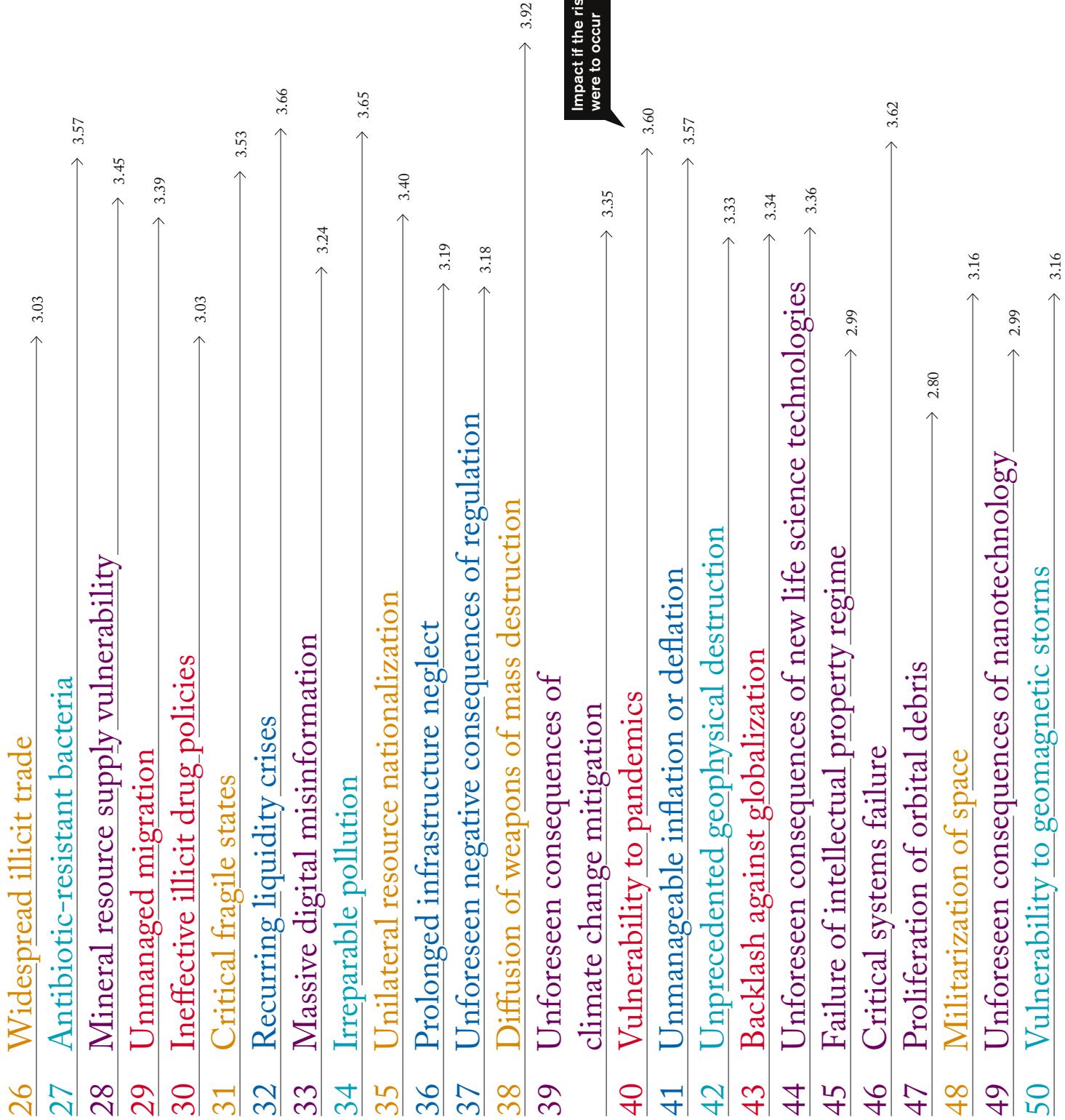
Admittedly, it is nothing new. It is what Immanuel Kant pointed out in his essay “What is Enlightenment” in 1784. Have courage to make use of your own reason. It is work and requires effort and, at times, it is an unreasonable demand. And the risk is great, because everything can change. But the chances are excellent that things will change for the better. □

**Wolf Lotter** is a journalist and author. He writes editorial articles on fundamental issues of the economy and society in the economic magazine brand eins. His new book “Zivilkapitalismus” (Civil Capitalism) will be published this fall by Pantheon/Random House.

**The 50 Global Risks** The world is a dangerous place. Over 1,000 experts have assessed the threats that are most likely to occur (ranking) and their potential impact (arrow length). At the top of the list for 2013 is income disparity.



Source: World Economic Forum



# Definitions of the 50 global risks

Economic Risks		Societal Risks	Geopolitical Risks
<b>01 Severe income disparity</b> Widening gaps between the poorest and richest citizens.	<b>42 Unprecedented geophysical destruction</b> Existing precautions and preparedness measures fail in the face of geophysical disasters of unparalleled magnitude such as earthquakes, volcanic activity, landslides or tsunamis.	<b>39 Unforeseen consequences of climate change mitigation</b> Attempts at geoengineering or renewable energy development result in new complex challenges.	<b>08 Pervasive entrenched corruption</b> The widespread and deep-rooted abuse of entrusted power for private gain.
<b>02 Chronic fiscal imbalances</b> Failure to redress excessive government debt obligations.	<b>04 Water supply crises</b> Decline in the quality and quantity of fresh water combine with increased competition among resource-intensive systems, such as food and energy production.	<b>44 Unforeseen consequences of new life science technologies</b> Advances in genetics and synthetic biology produce unintended consequences, mishaps or are used as weapons.	<b>37 Unforeseen negative consequences of regulation</b> Regulations which do not achieve the desired effect, and instead negatively impact industry structures, capital flows and market competition.
<b>09 Extreme volatility in energy and agriculture prices</b> Severe price fluctuations make critical commodities unaffordable, slow growth, provoke public protest and increase geopolitical tension.	<b>05 Mismanagement of population aging</b> Failure to address both the rising costs and social challenges associated with population aging.	<b>45 Failure of intellectual property regime</b> The loss of the international intellectual property regime as an effective system for stimulating innovation and investment.	<b>30 Ineffective illicit drug policies</b> Continued support for policies that do not abate illegal drug use but instead embolden criminal organizations, stigmatize drug users and exhaust public resources.
<b>12 Chronic labor market imbalances</b> A sustained high level of underemployment and unemployment that is structural rather than cyclical in nature.	<b>18 Food shortage crises</b> Inadequate or unreliable access to appropriate quantities and quality of food and nutrition.	<b>46 Critical systems failure</b> Single-point system vulnerabilities trigger cascading failure of critical information infrastructure and networks.	<b>49 Unforeseen consequences of nanotechnology</b> The manipulation of matter on an atomic and molecular level raises concerns about nanomaterial toxicity.
<b>21 Hard landing of an emerging economy</b> The abrupt slowdown of a critical emerging economy.	<b>23 Unsustainable population growth</b> Unsustainably low or high population growth rates and sizes, creating intense and rising pressure on resources, public institutions and social stability.	<b>47 Proliferation of orbital debris</b> Rapidly accumulating debris in high-traffic geocentric orbits jeopardizes critical satellite infrastructure.	
<b>24 Major systemic financial failure</b> A financial institution or currency regime of systemic importance collapses with implications throughout the global financial system.	<b>25 Rising rates of chronic disease</b> Increasing burden of illness and long-term costs of treatment threaten recent societal gains in life expectancy and quality.	<b>29 Unmanaged migration</b> Mass migration driven by resource scarcity, environmental degradation and lack of opportunity, security or social stability.	
<b>32 Recurring liquidity crises</b> Recurring shortages of financial resources from banks and capital markets.	<b>36 Prolonged infrastructure neglect</b> Chronic failure to adequately invest in, upgrade and secure infrastructure networks.	<b>30 Ineffective illicit drug policies</b> Continued support for policies that do not abate illegal drug use but instead embolden criminal organizations, stigmatize drug users and exhaust public resources.	
	<b>50 Vulnerability to geomagnetic storms</b> Critical communication and navigation systems disabled by effects from colossal solar flares.		



## 41 Unmanageable inflation or deflation

Failure to take adequate measures in relation to prices and wages in the event of extreme increases or drops in purchasing power.

### Environmental Risks

#### 03 Rising greenhouse gas emissions

Governments, businesses and consumers fail to reduce greenhouse gas emissions and expand carbon sinks.



#### 07 Failure of climate change adaptation

Governments and business fail to enforce or enact effective measures to protect populations and transition businesses impacted by climate change.

#### 11 Persistent extreme weather

Increasing damage linked to greater concentration of property in risk zones, urbanization or increased frequency of extreme weather events.

#### 22 Entrenched organized crime

Highly organized and very agile global networks committing criminal offenses.

#### 26 Widespread illicit trade

Unchecked spread of illegal trafficking of goods and people throughout the global economy.

#### 31 Critical fragile states

A weak state of high economic and geopolitical importance that faces strong likelihood of collapse.

#### 35 Unilateral resource nationalization

Unilateral moves by states to ban exports of key commodities, stockpile reserves and appropriate natural resources.

#### 38 Diffusion of weapons of mass destruction

The availability of nuclear, chemical, biological and radiological technologies and materials leads to crises.

10

#### Global governance failure

Weak or inadequate global institutions, agreements or networks, combined with competing national and political interests, impede attempts to cooperate on addressing global risks.

16

#### Terrorism

Individuals or a non-state group successfully inflict large-scale human or material damage.

19

#### Failure of diplomatic conflict resolution

The escalation of international disputes into armed conflicts.

40

#### Vulnerability to pandemics

Inadequate disease surveillance systems, failed international coordination and the lack of vaccine production capacity.

43

#### Backlash against globalization

Resistance to further increased cross-border mobility of labor, goods and capital.

### Technological Risks

#### 06 Cyber attacks

State-sponsored, state-affiliated, criminal or terrorist cyber attacks.

#### 20 Massive incident of data fraud/theft

Criminal or wrongful exploitation of private data on an unprecedented scale.

#### 28 Mineral resource supply vulnerability

Growing dependence of industries on minerals that are not widely sourced with long extraction-to-market time lag for new sources.

#### 33 Massive digital misinformation

Deliberately provocative, misleading or incomplete information disseminates rapidly and extensively with dangerous consequences.

### REPORT

The World Economic Forum (WEF) publishes an annual Global Risks Report. Over 1,000 experts from industry, the public sector and academia analyze 50 global risks in terms of how they will impact the world over the next 10 years. These results are from “Global Risks 2013,” the eighth edition of the report.



"Our financial instruments are now used around the world, which is one sign of their success," says Robert J. Shiller.

Photo: New York Stock Exchange.



Photo: Paolo Pellegrin / Magnum Photos

# Fear Should Not Prevent Innovation

Robert J. Shiller has predicted two crises, but his belief in the financial sector has not been shaken. The leading US economist on the risks of today's financial system, capitalism's good side and psychotherapies.

By Daniel Ammann and Simon Brunner

*You were one of the only economists in the world to predict the end to both the housing and the dot-com bubbles. Despite this fact, your new book is somewhat of a love letter to the financial sector. How do you reconcile the two?*

The word “finance” comes from the Latin “finis” – objective or goal. That’s what innovations in the financial sector are for. They motivate people to work together, efficiently and constructively, toward a common goal. A major part of the progress made throughout history has been due to the innovative capacity of the financial world.

*For example?*

The invention of the corporation allowed clever minds to establish a company together on the basis of an idea. And the company can continue to exist after the original owners have left. Or “limited liability,” a concept that came a little later. This guarantees that personal

>

risk is limited to the share invested in a company. That is fundamental. If a person were liable with all of his assets, every individual share could mean ruin. As a consequence, there would be virtually no capital in the markets.

*Not all financial innovations have such a positive impact.*

When they're first experimented with, many instruments are viewed with skepticism – including the idea of shared ownership in a corporation or limited liability. If the results were good, the instruments were quickly copied. That is the history of progress. Our financial instruments are now used around the world, which is one sign of their success.

*The British business magazine The Economist recently called you a Cassandra – someone who foresees disaster but finds no one willing to listen – as well as a Pangloss, Voltaire's radical optimist. There are many people today who are much more critical about the financial sector than you are.*

As Jesus said, "It is easier for a camel to go through the eye of a needle than for a rich man to enter the kingdom of God." The history of criticizing finance is a long one. Most of the world's religions value generosity as a human virtue. Finance, however, also recognizes the egotistical side of human nature. This presents potential for conflict.

*Is this the main cause of the current crisis?*  
The crisis is the result of different factors. Worst of all was the widespread perception in the US that housing prices could not fall. So there was no reason to worry about a speculative bubble, and the authorities and central banks did little. This is something that we can fix, and to some extent, have already done.

*In your opinion, have too many new regulations already been introduced?*  
Regulation is difficult to quantify. The prevailing political climate could actually lead to the suppression of innovation in the financial system because of the

fear of further crises – because we are no longer willing to take on risk. I think it's important that governments not simply issue regulations on their own, but that businesses participate in the process, for example, in the development of regulations by professional associations. They tend to view the problems a great deal more concretely than the people in Congress do.

*What are the risks that you currently recognize in this area?*

The crisis has been going on for a long time now – it began six years ago. Many economies are still struggling today. Similar to the current crisis, the Great Depression in the 30s began with a financial crisis and – as absurd as it sounds – things did not improve until the World War II, which acted as an economic stimulus. Many countries are currently caught up in their austerity policies and almost overdoing the cost cutting. We may well be experiencing an extended

**It is imperative that we remain an inclusive society, where every one of us has opportunity and a sense of belonging.**

period of low growth. I'm also concerned that inequality will grow even more over the next few years.

*What are the signs of this?*

Median household income in the US is already falling. That is a dramatic sign.

*You consider the social balance to be in danger?*

It is imperative that we remain an inclusive society, where every one of us has opportunity and a sense of belonging. Differences in wealth are better tolerated under those circumstances. A dramatic example: Joseph Stalin believed that he could use the anger of the

simple farmers against the kulaks, the wealthier farmers, to his advantage. But the simple farmers did not want to shoot the kulaks. Why? Some of them were their friends. Society has to remain mixed. Everyone has to be included in society.

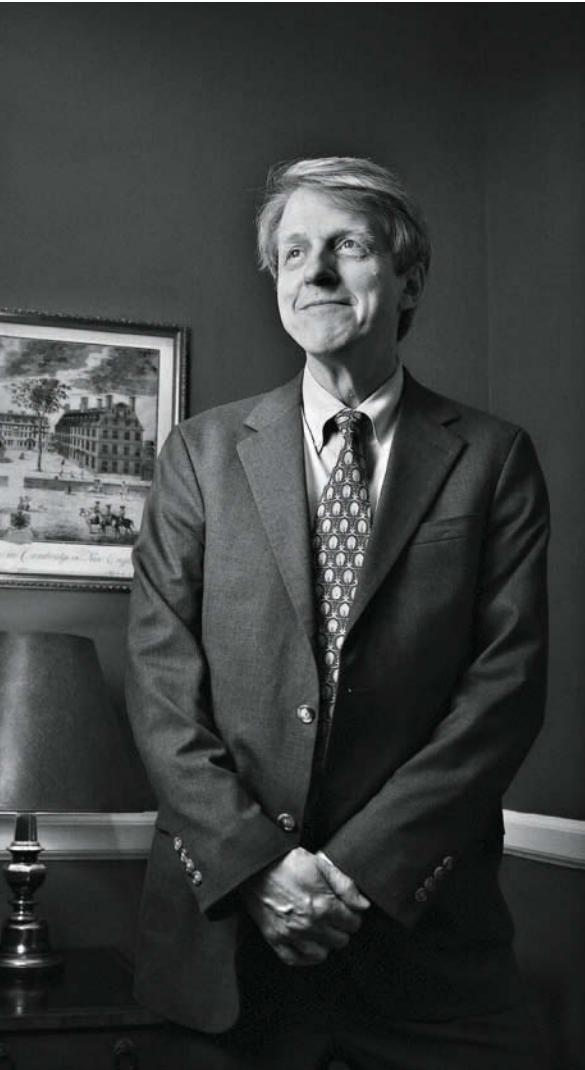
*You want to use financial instruments to contribute to a "good society," a better world. That sounds, diplomatically speaking, rather bold.*

Not at all. During the last two years, many innovations in the sector have served to support the "good society." Social impact bonds in the UK, for example. Let's take the Peterborough Prison in northern London, which has extremely high rate of recidivism. The non-profit organization Social Finance reached an agreement with the government for a payment of six million British pounds if recidivism declines to a clearly defined level within a certain period of time. Social Finance then issued a bond. Using the capital raised, measures were taken with the goal of reducing recidivism. If the goal is met, the six million will be distributed to investors. That is a private solution to a public problem. There are numerous other examples.

*Traditional theories of economics assume a rational, utility-maximizing person. One who is not necessarily interested in "good society."*

Decades ago, the economist Kenneth E. Boulding showed how far removed we are from homo oeconomicus. People are much more dependent upon each other than the pure utility function would indicate. Generosity also seems to be an inborn trait, as Ernst Fehr at the University of Zurich has shown. People are generous and kind to people who they perceive as such. We want a society that reflects the golden rule: "Do unto others as you would have them do unto you." Of course, people aren't always good, but when generosity is fostered, they become better. Financial instruments can help with this, too.





**Robert J. Shiller**, the 67-year-old economics professor at Yale University, is one of the 100 most-cited economists in the world. In addition to academic publications, he has written several books, the most well-known of these being "Irrational Exuberance." His latest book is "Finance and the Good Society."

*Your wife is a psychotherapist. How do your ideologies differ?*

She always thinks I need therapy (laughs). Seriously, my original understanding of economics has significantly changed and now includes more psychological components. We have been married for 36 years, we spend a great deal of time together, and we tend to read the same books. Right now, we are very interested in neuroscience, in particular in the sub-discipline of neuroeconomics. These approaches will shape our ideas in the coming decades.

*For example?*

Ernst Fehr, whom I just mentioned, scanned the brains of people playing an aggressive game. He found areas of the brain that are active during the feeling of schadenfreude. Many things are pre-programmed in our brains; we function much more automatically than we would like to think.

*Who is more successful financially: you or your wife?*

That would be me. My wife is a very generous, warm-hearted person. She is a therapist specialized in children. Most of her work is pro bono; one patient has been seeing her for 10 years. He can't afford it.

*Does that bother you?*

No. We earn enough money. My wife is doing something good for society, and I'm completely behind her.

*What is your own contribution to the "good society"?*

I have educated at least 3,000 finance students. I hope that they are doing their jobs well and responsibly. I have never preached "greed is good" like some colleagues. That existed even before Gordon Gecko, the prototypical representative of "Wall Street" in the film of the same name. I tell my students: "Follow your passion but be aware of your responsibilities in society."

*Your family is from Lithuania. How has that affected you?*

Not a lot. All four of my grandparents lived in Lithuania under the Russian czar. They emigrated when there were expropriations. My father was not very Lithuanian. He did not want me to learn his language. What for? But he wanted me to learn business. He was a businessman himself. Not a very successful one, but I must have inherited my capitalist spirit from him.

*You have been teaching at Yale University since the 80s. How have the students changed?*

I have the feeling that they have become more capitalistic. When I started, the

**I have never preached  
"greed is good."**

students were radically anti-business, and held demonstrations. That has to some extent reemerged lately. When banks come on campus to recruit students, there are sometimes protests again.

*What advice do you give students?*

I can only respond with a banality. They should be true to themselves and realize their dreams. I wrote books as a child – I enjoyed doing that. Daniel Kahneman, who won a Nobel Prize, recently stopped by and talked about how difficult it was for him to write a book. It is a hobby for me. When I watch television, I am bored. When I write, I am happy. That is my niche in this world. □

# What Would You Decide?

Intuition is good. But it is not always good enough.

In assessing risks, it can lead you astray.

Test your “gut instinct” by taking this quiz.

By Michael Siegrist

**01**

**A taxi was involved in an accident at night.**

Two cab companies, the Green and the Blue, operate in the city. You have the following information: I) 85 percent of the taxis are green and 15 percent are blue, and II) a witness identified the taxi as blue. The court tested the reliability of the witness under the same light conditions that existed at the time of the accident and concluded that the witness correctly identified each of the two colors 80 percent of the time and failed 20 percent of the time. What is the probability that the cab involved in the accident was blue?

- A. → Less than 50 percent
- B. → More than 50 percent
- C. → It is impossible to say

The correct answer is A. The probability is calculated as follows:  $(0.15 \times 0.80) / ((0.15 \times 0.80) + (0.85 \times 0.20)) = 0.41$  or 41 percent. When people are asked to solve this problem, devised by Amos Tversky and Daniel Kahneman, most of them disregard the base rate (only 15 percent of the taxis are blue). As a result, they overestimate the probability that the taxi is blue. In other words, we attach too much weight to the testimony of the witness. The problem can be solved much more easily by using natural frequencies. Let us assume that there are 1,000 taxis, 850 green and 150 blue, operating in the city. The witness will mistakenly identify 20 percent of the green taxis as blue. In other words, 170 green taxis will be classified as blue. Of the 150 blue taxis, 80 percent or 120, will be perceived as blue. This means that the witness will think that 290 taxis are blue, although only 120 actually are. The likelihood that a blue taxi was involved in the accident is therefore 120/190, or 41 percent.



**02**

**You have two jars in front of you.**

Jar A contains 50 white balls and 50 black balls. Jar B also contains 100 black and white balls, but you do not know how many of each. You are asked to reach in and take out a ball. If it is black, you will win 100 Swiss francs. Which jar do you choose?

- A. → Jar A
- B. → Jar B
- C. → It makes no difference

The probability of winning the 100 francs is the same in both cases, whether you choose Jar A or Jar B. People tend not to choose Jar B because of the ambiguity associated with it – that is, we do not know how many black balls it contains. Since the number of balls is somewhere between 0 and 100, the expected value would be 50 black balls. If we were to test this an infinite number of times, the chance of winning would be exactly 50 percent for both jars. Yet over 80 percent of test subjects regard Jar A as the safer choice.

## 03

**A — You are exposed to pathogen X**, which can cause a disease that leads to a quick and painless death within one week. The likelihood that you will contract this disease is exactly 0.1 percent. There is no cure. However, there is a vaccine that is certain to prevent you from developing the disease. Unfortunately, there is a limited supply of this vaccine, so it is sold to the highest bidder. How much would you be willing to pay to be vaccinated?

- A. —> 100 Swiss francs
- B. —> 1,000 Swiss francs
- C. —> 10,000 Swiss francs



**B — A professor at a university hospital is conducting research on pathogen X**, which can cause a disease that leads to a quick and painless death within one week. The likelihood of contracting this disease is exactly 0.1 percent. There is no vaccine against it. Thus the likelihood that someone participating in this experiment will die is exactly 0.1 percent. The 20 people asking for the

lowest amount of compensation are allowed to participate in the experiment. What is the minimum amount of compensation you would accept to take part in the experiment?

- A. —> 100 Swiss francs
- B. —> 1,000 Swiss francs
- C. —> 10,000 Swiss francs

American economist Richard Thaler proposed these scenarios. Nearly all of the participants in the study named a much higher amount in the second than in the first scenario, although the risk is the same in both cases. The question is how much a 0.1 percent risk of death is worth. A rational decision would result in choosing the same amount in both cases. Most people use their resources inappropriately because they attach greater weight to added risks than to reducing risks that already exist. Thus the number of people saved is not as high as it could be. Some parents are opposed to vaccinating their children, for example, because they pay more attention to the very small risk of side effects than to the vaccine's ability to reduce the risk of disease.

## 04

**Eight out of 1,000 people have cancer.** Of these eight people with cancer, seven will test positive for cancer. Of the 992 people who do not have cancer, 70 will test positive. How many people who test positive actually have cancer?

- A. —> 7 out of 77 people
- B. —> 7 out of 1,000 people
- C. —> 9 percent

The correct answers are A and C. This problem was formulated by German psychologist Gerd Gigerenzer. Instead of referring to probabilities ("X people out of Y"), he used frequencies ("X percent"). According to Gigerenzer, most people are able to solve this problem if it is expressed in terms of frequencies. It is indeed true that solving the problem is easier with frequencies rather than probabilities. However, a study conducted in Switzerland has shown that only 12 percent of participants drawn from the general population are able to answer correctly.



## 05

**A — An oil tanker has collided with a reef, spilling a large quantity of petroleum into the ocean.** As a result, more than 1,200 birds died. How serious is the effect of this event on the environment?

- A. → Not very serious
- B. → Unfortunate
- C. → Serious
- D. → Disastrous

**B — As a result of natural oil seepage on the ocean floor (through channels and cracks in the Earth's crust), a large quantity of petroleum is released into the ocean.** As a result, more than 1,200 birds died. How serious is the effect of this event on the environment?

- A. → Not very serious
- B. → Unfortunate
- C. → Serious
- D. → Disastrous

Since 1,200 birds have died in both scenarios, they are equally serious. Yet most people classify a disaster that results from human activity as worse than a natural disaster. Many other studies have produced the same result. Radioactivity produced by human beings, for example, is seen as worse than the same amount of radiation produced by naturally occurring radon.

## 06

**Linda is 31 years old and very bright.**

As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Indicate how likely the following statements are to be true (0 = completely unlikely to 100 = certain).

- A. → Linda is active in the feminist movement
- B. → Linda is a bank teller
- C. → Linda is a bank teller and is active in the feminist movement

The famous "Linda problem" was formulated by Amos Tversky and Daniel Kahneman. Most people believe that (C) is more likely than (A) or (B). Of course, that is not possible. Even if all bank tellers were active in the feminist movement, the likelihood of (C) would be no more than equal to that of (A) or (B). But intuition leads us to believe that (C) is more likely, because it seems to be a better fit with the person described. This phenomenon is caused by representativeness heuristic. Psychologists refer to it as the conjunction fallacy.

# Climbing Returns and Falling Meteorites

How investors can better calculate their risks.

By Simone Grüniger

WE TAKE RISKS EVERY DAY. WE HOPE that the decisions we make and the things we do work out well, but that is not always the case. Sometimes the chances of problems are higher, and sometimes they are lower. You are more likely to have a bicycle accident than to be hit by a fragment of a falling meteorite (such as the one in Chelyabinsk in the Urals in February). And some risks have worse consequences than others. Injuries sustained by a climber whose rope gives way are usually much more serious than those suffered by someone who slips while going for a walk.

Thus, risk has two dimensions: frequency and impact. In the case of both, risks can be effectively limited if you counteract them with suitable measures and assess them correctly. What is true for daily life is also true for financial investments. You make a decision (you purchase an investment) and hope for positive results (you would like to see a return). Potential returns are accompanied by exposure to risk, however. A "mishap" occurs when you incur high losses rather than the profit you hoped for.

## Traditional Theory Is Not Enough

How can you measure investment risk? Volatility has been the key element of traditional financial market theory. It is a measure of the fluctuations in yield from an investment around its average. The stronger and more frequently the price of a stock oscillates, the greater the range of fluctuation and the riskier the investment. Fluctuations in yield in both directions are taken into account. As is well known, investments can fluctuate both up and down.

Traditional theory does not do justice to the actual investments of typical investors, however. They are less con-

cerned about fluctuations in yields than they are about avoiding serious losses. In fact, investors usually cope well with small corrections in their assets, but slumps of 10 or even 20 percent start to make them nervous.

Complicating all this is the fact that traditional financial market theory assumes a normal distribution of returns, or a Gaussian bell curve. Small price fluctuations are more likely than large ones – and extreme cases are quite rare. These rare cases, when "the rope gives way" or "the meteor strikes," were barely taken into account in assessing risk. The recent past – especially when the markets crashed in 2001–02 and 2008 – has shown quite plainly that returns do not necessarily follow the logic of normal probability distribution.

In fact, extreme price fluctuations occur much more frequently than presumed by normal distribution. Nowadays there is talk of "fat tail distribution,"



Meteorite in the Ural Mountains: How often does something so rare happen?

where the ends, or tails, are more pronounced than originally conjectured. In addition, the distribution is often lopsided rather than even; losses can behave differently than profits. For this reason, asymmetrical distribution is being used more

and more in assembling portfolios, taking into account the higher probability of extreme losses.

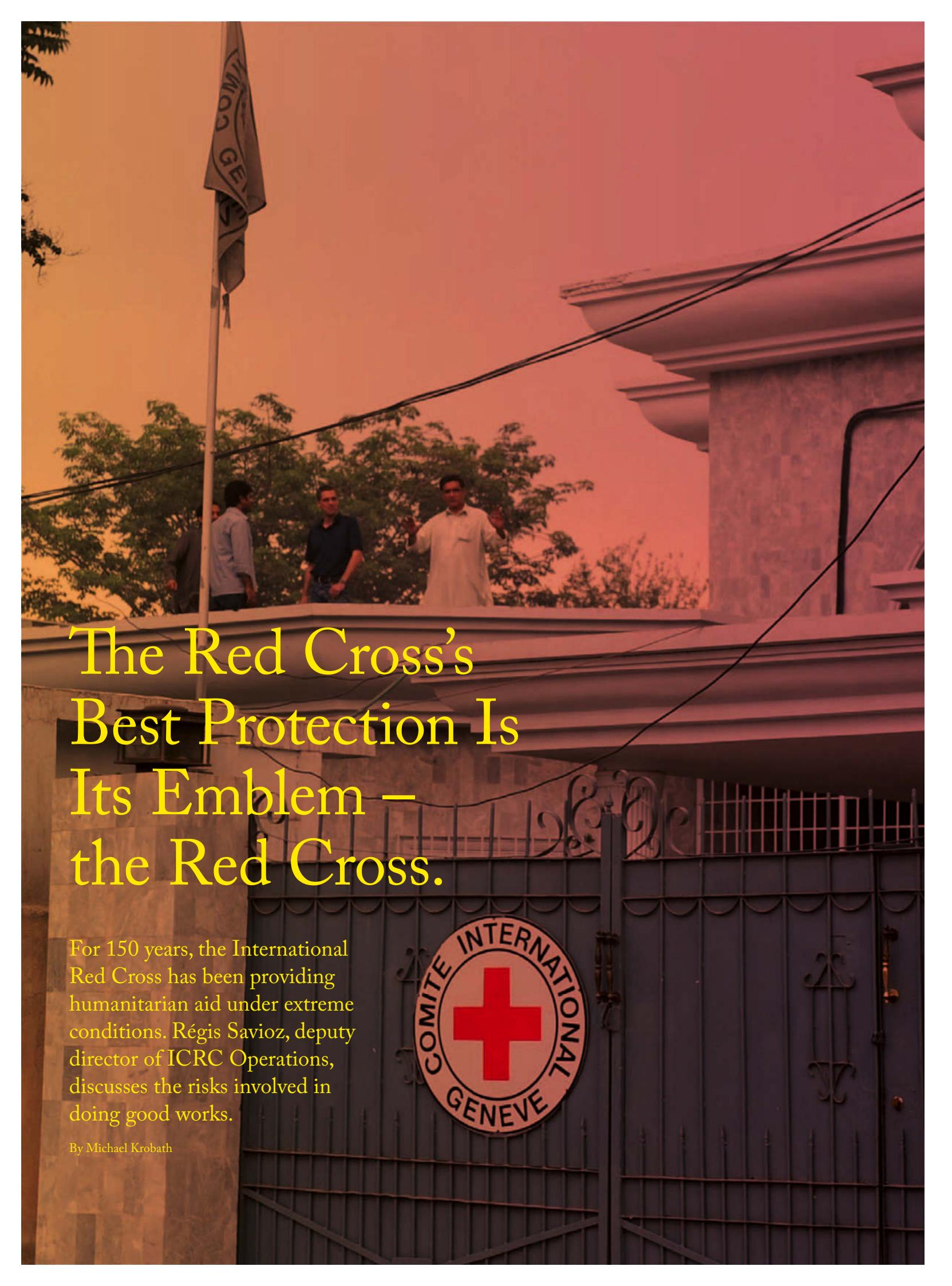
## Reaching for the Magnifying Glass

The degree of risk that is being sought is one that takes investors' risk aversion into account while considering extreme risks. Today greater emphasis is placed on modeling the risk of loss – expressed mathematically by the conditional value at risk (CVaR). CVaR specifies the average potential for loss in the case of extreme losses. It essentially examines the frequency of extreme events within a distribution more closely. It takes into account the probability of a meteor strike and reveals the expected damage.

The probability of extreme losses is not the same for all asset classes, of course. Blue chip government bonds have a much lower risk of loss than high-yield bonds. In minimizing risk for an investment portfolio, it is essential to model the risks of loss for each asset class. Optimization models can help create a portfolio that minimizes the risk of loss for a certain expected return.

In short, investors would like to avoid high losses. Volatility as a measure of risk is not optimal, because fluctuations in yields in both directions are taken into account. In addition, in the past there has been an assumption of a normal distribution of returns. This suggests that extreme losses very rarely occur, but this does not correspond with the experiences of the last few years. Alternative measures of risk such as the conditional value at risk make it possible to represent investors' risk aversion and the real market environment. And there's more good news: NASA is working on ways to prevent meteorite strikes. □

**Simone Grüniger** works in the Asset Allocation Advisory department in the CIO Office of Credit Suisse.



# The Red Cross's Best Protection Is Its Emblem – the Red Cross.

For 150 years, the International Red Cross has been providing humanitarian aid under extreme conditions. Régis Savioz, deputy director of ICRC Operations, discusses the risks involved in doing good works.

By Michael Krobath

**H**as the world become safer or more dangerous over the past few years?

Régis Savioz: From the perspective of the International Committee of the Red Cross (ICRC), there has been no decline in war or violent conflict. We continue to have a presence in over 250 locations in 80 countries, including some of the most conflict-ridden places in the world. It's clear that the world has become more complex.

#### In what way?

Conflicts are more fragmented than in the past, often involving huge numbers of adversaries: militant groups, the army, the government, the police, the armed forces of neighboring countries. Particularly challenging examples today include the civil wars in the Democratic Republic of the Congo and Syria, where the opposition is extremely divided. The great difficulty lies in getting to know all of these factions and gaining their acceptance, which requires enormous resources.

#### What are the greatest risks to ICRC delegates?

The greatest dangers – and this is often forgotten – are the “everyday” risks that exist in war zones as they do anywhere else, like disease and traffic accidents. Second, there is the danger of “being in the wrong place at the wrong time.” In countries like Afghanistan, Colombia

and Yemen, violence can break out at any moment. And third, we are seeing more and more attacks and kidnappings all over the world that are not politically motivated, but simply criminal acts. In the past few months alone there have been kidnappings in the Philippines, Sudan and Pakistan – where Khalil Dale, a nurse and ICRC worker, was abducted and brutally murdered last year.

#### Is the ICRC now less accepted in the Third World, and particularly in the Islamic conflict regions, as a neutral and purely humanitarian organization?

I wouldn't say so. Take Iraq, for example. While it is true that we had to leave for a time and continue our work from Amman, Jordan, we have since resumed all of our activities in the country. We are sanctioned by all of the parties in the conflict and maintain a presence throughout the country, from Mosul to Kirkuk. Today Iraq is our second-largest area of activity – which clearly demonstrates the acceptance the ICRC enjoys.

#### The largest area of ICRC operations is in Afghanistan. After NATO troops leave in 2014, the country will again be in danger of slipping into a bloody civil war. Will it become the most dangerous place in the world?

There are a number of possible scenarios for Afghanistan's future. Whatever happens, however, we don't believe that there is any such thing as the “most dangerous place.” Our focus is always on finding a balance between our mission of providing humanitarian aid for a country's people and the risk to our employees.

#### It's a dilemma to which former ICRC President Cornelio Sommaruga once gave this response: “The interests of the victims are more important than the safety of our delegates.” Is that still true?

Our mission is to stand by the victims of armed conflicts, to help and protect them. When weighing our risks, we must never forget that these people are often living under far more dangerous

conditions than we are when launching a mission in their countries. But of course we don't continue our humanitarian work at any price. If carrying out a mission is clearly going to result in more victims than not doing so, then it would be absurd to proceed.

#### What is the ICRC doing to minimize risks to its employees?

We have a very comprehensive and professional risk management system in place. First, we provide intensive training for our delegates, teaching them how to handle physical and psychological stress. We take a decentralized approach to risk assessment for specific crisis regions. This is primarily handled by our delegates on site. They are in the best position to conduct a realistic assessment because they are familiar with conditions on the ground. At our Geneva headquarters, we monitor the efforts of our local employees and assist them with additional information.

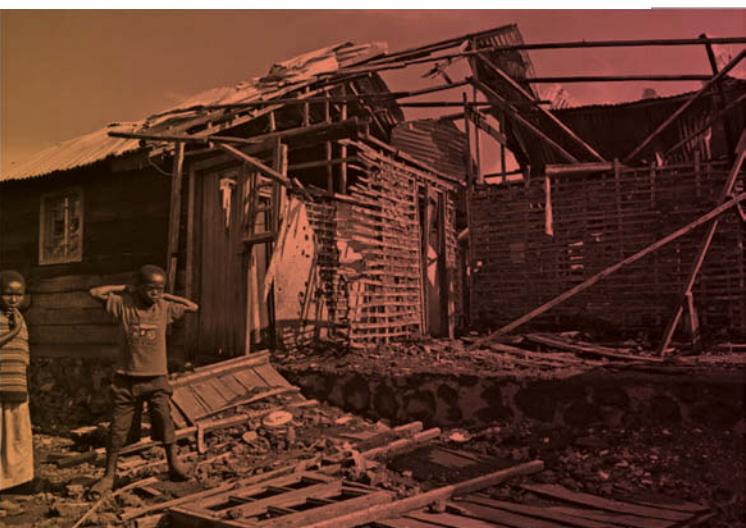
#### With dangers increasing, wouldn't it be a good idea to have armed soldiers protect your delegations, as the UN has long been doing?

Our best protection is our emblem – the red cross. It sets us apart and underscores our credibility. Armed soldiers might provide more protection in the short run, but that option would undermine our independence and our role as a humanitarian organization. Over the long term, we would probably be at even greater risk.

#### What's the most dangerous situation that you, personally, have ever experienced?

I've experienced a number of difficult incidents in the course of my missions. I was the delegation head in the Gaza Strip during the Second Intifada, when incessant fighting made it extremely difficult to get ambulances to the injured. The situation in northern Afghanistan was equally challenging. And in South Sudan – during the war, there was always the possibility that you might be in the wrong place at the wrong time. >

Left: The ICRC office in Peshawar, Pakistan, on May 12, 2012, two days after the kidnapping and murder of British worker Khalil Dale.



Clockwise from top left: ICRC employees talking with combatants in the Kivu region of the Democratic Republic of the Congo. An ICRC physician examines a boy who has just undergone an operation at a hospital in Goma (Democratic Republic of the Congo). A house destroyed in a bombing raid in Sake (Democratic Republic of the Congo). ICRC employees on their way to the Kandahar airport in Afghanistan.

***Does seeing so much of the dark side of life make you lose faith in humanity?***

There are days like that, of course. But I'm much more likely to think that we're not doing enough to help.

***Can you describe a particularly moving moment, something that you will never forget?***

There are many of them. These are the moments when it is obvious that our work is making a difference in the lives of people who need help. I was particularly touched by my visits to prisons in the most remote regions of Nepal. The people there had been wasting away for years in their cells, believing that the world had forgotten them. They were

astounded to see me. Another memorable incident occurred when I was a young delegate in Sudan and was able to reunite a mother and child who had been separated for two years. I'll never forget their faces.

***The ICRC is celebrating its 150th anniversary this year. What is its greatest accomplishment?***

An elderly man in the mountains of northern Afghanistan once said to me: "The flag of the Red Cross is the only one that has flown here continuously for the past decades." We provide humanitarian aid under extreme conditions, and we keep our promises – that's perhaps the most important thing. □



Régis Savioz has been with the ICRC since 1998 and is currently deputy director of ICRC Operations. He was previously assigned to a number of crisis regions, serving as head of delegation in the Gaza Strip, Afghanistan and the Ivory Coast, among other positions.

*In 2008, Credit Suisse was the first global bank to become a member of the ICRC Corporate Support Group, a group of donors whose membership includes Swiss businesses and foundations that support the ICRC in its mission.*

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# I Was the Residual Risk

It was expected to be a heart surgery without complications.  
It usually is. Our author turned out to be the exception.

Markus Schneider (text) and Gregory Gilbert-Lodge (illustration)

**AT FIRST, THEY SUSPECTED HEPATITIS B.** I was admitted to the hospital and placed under quarantine. After all, I could have infected others. Only a few hours later, doctors determined that it was not acute Hepatitis B, and I left the hospital with a different diagnosis. My aortic valve was not completely closed, probably a congenital condition. Had a doctor never noticed this before?

That was 25 years ago. Since then, specialists have tried to minimize the risks – by all means available to advanced medicine. My cardiac condition was monitored regularly. Everything that could be measured by ultrasound was measured by ultrasound, with a precision down to a 10th of a centimeter. Surgery would be necessary, no question about it; my cardiac muscle would not be able to handle the stress for a long period. But the doctors wanted to postpone the operation for as long as possible, to benefit from medical advances.

## Health Insurance With Reservations

I had nothing to fear. An operation like this is a daily occurrence in hospital. Even back then, and especially today. In Zurich alone, 100 mechanical aortic valves and 300 biological aortic valves from pigs are

transplanted in the university hospital and in Triemli Hospital each year.

The fact that this operation wasn't entirely risk free became evident when I tried to take out a small supplementary insurance policy from the health insurance company to be able to freely choose among hospitals across Switzerland. The insurance company had reservations about the heart surgery. When I changed my pension fund, the new company had a similarly defensive reaction. In the event of "disability or death as a result of the aortic valve insufficiency reported to us or its related complications," I would only be guaranteed the minimum in occupational pension benefits.

Six years ago, the time had come. My aorta had dilated at its root to the point that it could explode at any time. In the nuclear power industry, this would be referred to as a "meltdown." It was right before summer vacation, and my cardiac surgeon dryly recommended that I refrain from climbing any high mountains. If I wanted to take a walk, I should stick to the lakeshore.

Matter-of-factly and using only a few foreign words, he explained the complications which could not be ruled out as a result of the surgery. He lectured me for five minutes, even though these were details

that I really preferred not to know. At the end, I had to sign a piece of paper. At the word "stroke," I jolted back. "Yes," he explained, he had mentioned that previously. "But the risk is less than 1 percent."

In other words, a residual risk. I accepted it without batting an eye. At the University Hospital Zurich, they implanted a mechanical heart valve during four to five hours of open heart surgery. In addition, the doctors removed the upper part of my aorta, the root, which had dilated so dangerously, replacing it with a Gore-Tex tube.

## Suddenly an Emergency

The operation was a success. Seven days later, I was released into a rehabilitation clinic in the canton of Graubünden. But the first morning there, everything that could go wrong went wrong.

After an initial minor stroke, the flashing blue lights of the ambulance accompanied me to hospital. There, I had a major stroke. Now, it was an emergency, and in an emergency, risks are no longer weighed up. No advanced health care directives are sought out. In an emergency, everything runs like clockwork. The rescue efforts last as long as something can still be done. >



A helicopter flew me back to the university hospital in Zurich. My skull was opened as quickly as possible in order to drain the blood that had flooded the right side of my brain. The doctors wanted to do this as carefully as possible, so that none of the intact brain cells would be “caught.” Either way, the danger was immeasurable. I could have been paralyzed on one side or even had brain damage.

While waking from the anesthesia, the next residual risk became reality. I suffered an incredibly strong epileptic seizure. The intensive care staff reacted as tried and tested. They put me into an induced coma.

It now became apparent that even a double residual risk doesn’t mean it’s over. In modern medicine, every complication provides the impulse for the next action.

In the rehabilitation clinic in Baden, outside Zurich, where I had to recover simultaneously from a heart and a brain operation, a neurologist spoke a line that I will never forget: “From now on, we are going to use a zero-risk strategy.” What did he mean?

#### **Thick Blood, Thin Blood**

That meant that the doctors would measure blood viscosity, or blood thinning, as precisely as possible. With this, the neurologist hinted at what caused both of my strokes. Because of the mechanical heart valve, my blood has to be thinned for the rest of my life. That is done with medication, whose dosage was not yet “right” upon my admittance into the cardiac rehabilitation clinic. At first, the blood was “too thick,” which caused a brain embolism. Then the blood was “too thin,” causing a stroke.

Now, a blood sample was taken every day, sent to the lab and analyzed. Every day, my neurologist spoke with a professor in Germany, a “coagulation specialist,” in order to discuss the still inexplicably fluctuating values. Full of needle marks, the crook of my arm soon resembled that of a drug addict. The nurses even had trouble finding a vein.

Normally, this is purely routine. Regulating blood viscosity is something

every family doctor can do. It even works for me now. Every five weeks, the medical assistant takes a drop of blood from my finger, followed by a three-minute conversation with the doctor. The procedure, aptly called “Quick Test,” is used by thousands of elderly people to protect themselves from strokes.

But I face a second threat. I could suffer an epileptic seizure, as I did when waking up after brain surgery. I have had three seizures over the last four years. I

**“Strictly speaking,  
I should not even  
be allowed to take a  
bath at home  
without supervision.”**

don’t remember what happened. I collapsed at the spot where I was standing – on a train station’s platform, for example, or in the center of Zurich. And I awoke because the people around me reacted properly and called for an ambulance.

#### **Fighting Seizures With Discipline**

I now frequently text home just to let them know that everything is fine, or that I am doing well. And I always carry all of my identification with me in my wallet. My life is more disciplined than ever before. I don’t drink alcohol. I get plenty of sleep and don’t work too much. I never get behind the wheel any more. Much too dangerous (for others). I am not really allowed to swim, either. Too dangerous (for me), especially in a lake. Strictly speaking, I should not even take a bath at home without supervision. Rudi Dutschke, the leader of the 1968 student movement in Germany, actually drowned in his bathtub – due to an epileptic seizure that he suffered as a long-term consequence of a gunshot wound to the head.

And most of all, I take my medication virtuously. Even though it may not

be effective every time because the dosage cannot be determined precisely. In practice, it amounts to trial and error. Every seizure is an error that is avoided by increasing the dosage or by adding another substance.

#### **The Peak Has Yet to Be Reached**

Of course, we aren’t just waiting for the next epileptic seizure. That’s why I have to undergo an EEG to measure my brain activity every six months. My medication is readjusted according to the results: less of this, more of that. A method that is not irrelevant to me due to the side effects. “Antiepileptic medication can cause fatigue and irritation,” the drug package insert explained succinctly.

Six years after the cascade of complications, I am no longer performing at full capacity. I am partially disabled and depend on a pension. For my pension fund, this is not a result of the brain injury, but rather a long-term consequence of the aortic valve insufficiency, which saves them a few hundred francs pension every month.

I don’t take such a narrow view. I am thankful that I am still alive. And that I am still able to write these words. To sum it up: Advanced medicine has yet to reach its peak. The trial and error process is never ending. Zero risk is never humanly possible, but further advancements can be measured. The statistical life expectancy is growing like never before: by another additional month every year. A newborn baby boy in Switzerland currently has 80.1 years ahead of him, and a newborn baby girl 84.5 years. □



**Markus Schneider**, 52, is an economist, winner of the Georg von Holtzbrinck award for business journalism, and published author. He currently works significantly reduced hours for Schweizer Familie.



Mechanical Attraction  
[louiserard.ch](http://louiserard.ch)

Louis Erard  
SWISS MECHANICAL WATCHES





# Fish or Perish

Crab fishermen on the Bering Sea off the coast of Alaska have the most dangerous job in the world. Accidents are an everyday occurrence. Deaths are not unusual. Reality TV has made these everyday heroes into media stars.

By Stefan Krücken (text) and Corey Arnold (photos)



Above: 20-meter-high waves are not uncommon in the Bering Sea. Fishermen's trawlers withstand massive forces.

Right: The pots fishermen use to catch king crabs weigh several hundred kilos each.



The sea where they work is so cold that it can kill a man in less than five minutes. During an Arctic storm, waves can reach 10, 15 or even 20 meters at times. Winds called "williwaws" whip across the North Pacific at over 200 kilometers per hour. In the winter months, temperatures regularly dip below -30° C. Fishermen call it "black frost" when ocean spray freezes, encrusting a ship in a thick layer of ice. It is extremely dangerous. They use hammers to break it up and remove it so the trawlers won't capsize under several tons of ice in a wave trough.

Without warning, waves crashing over the deck can wash the men overboard. If a fisherman's foot gets tangled in a line, the steel crab pot at the other end will pull him down into the icy depths. They never know when something is going to tear loose from the deck and strike them. And these are just a few of the risks facing the crab fishermen of Alaska's Bering Sea every day they are out.



Statistically speaking, this is among the riskiest jobs in the world. The two industries at the very top of the list for workplace fatalities are the timber industry and commercial fishing. On average, loggers report 117 deaths annually per 100,000 employees. America's fishermen take second place reporting 71 deaths. But if you take Alaska's crab fishing industry by itself, the numbers are even more frightening. Crab fishermen average at least one death a week. Every season at least one trawler is completely lost at sea. When you add this up, Alaskan fishermen report 300 to 400 deaths per 100,000 employees every year. The injury rate is an unbelievable 98 percent. "Fish or perish" as French journalist Donatien Garnier wrote about a trip on a crab fishing boat, and he is right.

It is the prospect of quick money that drives these men. The white meat of the king crab that they hunt is a delicacy that gourmets all over the world will pay dearly for. It is very simple: When they catch crab, fishermen earn a lot. When they catch nothing, fishermen earn nothing. Even a simple deckhand makes close to 1,000 US dollars on a good day. Many are willing to risk it all for that kind of money, and they will work as long as it takes to get all of the crab pots back on board. Sometimes this can take up to three days without a break, in Arctic storms with waves several meters high. They work until no one is left standing. From rags to riches, from dishwasher to millionaire, the American dream is still possible here.

For many years, the drama played out behind the scenes in the dark. The home port, Dutch Harbor, is at the outermost edge of the map on the tiny Aleutian Island of Unalaska in the North Pacific Ocean, rugged, wild and lonely. Just getting there by plane can be an adventure. After several hours in the air, if the storm is too ferocious – and there is almost always a storm in this part of the world – the pilot may turn around and head back to Anchorage. Sometimes it will be days before the next plane can take off. Passengers waiting at the airport bear the adversity in stoic silence to avoid losing their place on the crowded passenger list. No one goes to Dutch Harbor on vacation. This is a place for strong laborers, fish processing plants, warehouses and fuel depots. And three bars and a hotel. This may be the last patch of the Wild West. A settlement of modern gold miners, out in the middle of the ocean. No other US harbor takes in more fish and crab, but almost no one had ever heard of it until TV brought it to the screen – and changed the fishermen's lives.



TV producer Thom Beers recognized the potential for a documentary series about

the fishermen's adventurous lives, and the series was soon showing on the Discovery Channel. The first season, which was broadcast in 2005, was an immediate hit. Eight seasons later, the captains of the most popular fishing boats, the Time Bandit, Northwestern and Cornelia Marie, are stars, appearing on talk shows in the US from Letterman to Leno. They have their own lines of merchandise and can only be reached through their agents. There are even computer games where you can be the captain of your own boat. More than 5 million viewers in the US tune in during prime time to watch the Deadliest Catch fleet set out; and these Alaskan adventures are broadcast in over 120 countries worldwide. The New York Times had high praise for the show: "Of all the reality shows, 'Deadliest Catch' is by far the realest." In the very first season, the Big Valley capsized and sank. There was only one survivor.

The fishermen's everyday lives are a constant battle against the elements, storms, waves and severe exhaustion. The work routine is tedious. Bait the trap, close the lid, attach the line and the marker buoy to the pot and into the ocean it goes. Once the traps are all laid out in a long row of buoys, the captain cruises back to the start and the crew pulls the pots back in. Steer up to the buoy, safety line over the winch, pull the line in until the trap surfaces, hook it to the crane, heave the pot on board, open the lid, sort the catch.

Viewers are far more interested in the interpersonal dramas. The things that happen when the fishermen work in close quarters under extreme pressure with no breaks. Conflict, stress, until fists are flying along with the crab. On American TV, where obscenities have to be bleeped out, some conversations sound more like birds chirping than people talking to each other. Four mounted cameras were installed so as not to miss anything, and a two-man cam-



Cameron Glendenning, director of photography for the TV documentary "Deadliest Catch."

era crew roams the trawlers with a portable camera to capture everything else. "Living on a crab boat is like being in prison, except that you might die there any minute," says Cameron Glendenning, 35, director of photography for the series and on board since the first season.

The reporters refer to themselves as being "embedded," as if they were reporting from a war zone. In fact, in some ways their jobs may be even more risky than those of the fishermen they are with all the time. While deckhands get three or four hours sleep, the film crew uses these breaks to check and repair equipment, charge batteries or take down notes. While the others are resting, the cameramen often head up to the bridge to film the skipper battling the elements.



Cameron Glendenning recalls one shift that lasted 73 hours without a break. "The adrenalin keeps you awake," he says. He avoids coffee, cigarettes and drugs. Glendenning is a small, wiry man who almost always wears a baseball cap. He has a tattoo on his arm. He grew up on the Florida coast where he often fished. The first time he went out on the wild Bering Sea, he desperately wanted to call his parents. The waves outside of Dutch Harbor were 10 meters high. At first Glendenning could not believe that the skipper would go out, and then there were the sounds coming from the steel in the ship. "I wanted to talk to my mom and dad one more time. Just in case, because I had a feeling that this might be the last call."



Not much of the camera equipment survives the fishing season. More than 80 pieces of equipment break every season. The cameramen climb masts and position



themselves on stacked crab pots. They stand between the men on deck to get the most spectacular shots. "The fishermen have two eyes and two hands at their disposal when there's an especially high wave or a sliding pot. We cameramen have to rely on only one eye and one hand," says Glendenning. Once, he had to rely on his fist, too.

People who come to Dutch Harbor usually have more than one reason to be here; some men are on the run, from the police, the government, from an ex-wife. "The guys are pretty crazy. On shore, they drink until they keel over; aboard, they fight. Almost everyone carries a gun," explains Glendenning. When one of the fishermen, a massive guy more than a head taller than Glendenning, was being aggressive and cursing him nonstop, and even threw a shoe at him, Glendenning punched him hard in the face. After the initial shock, his colleagues intervened. That was the last time anyone on board gave the cameraman trouble. He had earned their respect. Is he afraid sometimes? "Of course," says Glendenning, looking at us blankly. "You'd have to be a complete idiot not to be afraid out there."



Bad weather, heavy swells, the next row of pots – the same thing over and over again. This is not what makes this TV series so successful. It is all about sticking together. Being part of a group that overcomes adversity and never gives up, especially in a crisis. When a breaker sweeps three fishermen off a mountain of stacked crab pots, when a monster wave smashes in the bridge window or when a piece of equipment gives out in the middle of a storm, TV viewers shiver right along with the crew on board. In a world where so many are feeling lonelier all the time, the fishing boats depict a committed group of people holding together for the duration of an episode, or three quarters of an hour. >



One of the world's most dangerous professions:  
In a split second a wave can wash the deck crew  
overboard into the ice-cold sea.



Above: Fishermen separate fish from the crabs on the sorting table. Young crabs and females go back into the ocean.

Below: People who sail out into the Bering Sea know to expect anything and everything. The injury rate is 98 percent.

Icy wind, so what?  
Some people call Bering Sea fishermen  
“modern-day Vikings.”

Johnathan Hillstrand, captain of the Time Bandit (a skull adorns the boat's bow) and perhaps the wildest fisherman of all, compares the situation of deckhands with that of soldiers. When deployed, they have to be able to rely absolutely on their comrades. When things get really tough, their only hope is that the others can somehow bail them out. Teamwork is essential. They will not make it if the crew does not work as a team. This is what gives the show the important narrative arc that every series needs to hook its audience: How do people behave under these extreme conditions? Who will rise to the challenge? Who will fail? As a colleague. As a buddy. As a friend. Viewers want to know who will persevere in the storm of life.

Cameron Glendenning and the other cameramen must constantly be on the alert. They can not miss a moment, because no scenes can be repeated. There are no rehearsals, and almost nothing can be set up ahead of time. “I always try to think two steps ahead,” explains the cameraman. “But nature, the wind, the waves write the script.” Mortal peril is the status quo. Evening entertainment for a world in which everything is secure. But this is no game. The dangers are very real.

For his work, his courage and his groundbreaking imagery, Glendenning has won three Emmys, the Oscar of the TV world, the highest honor in television. The series has also changed his life, and he was prepared to go to the limits and beyond to make it happen. He believes that he himself is the greatest risk to his own safety. “I'll do anything to get a good shot. I want to create images that I can truly be proud of. And the longer I was underway on these boats, the greater the risks I took.” One time he was hanging from a mast when the ship began to roll heavily, and he barely managed to make it back down onto the deck. Afterward he swore to abide by the mantra the skippers

had tried to instill in him: “The Bering Sea leaves no room for mistakes.”



What drives him to keep coming back to Dutch Harbor and to keep climbing aboard these fishing boats? It is his profession, although cameramen are not paid quite as well as the fishermen they report on. But for Glendenning, it is about more than just the job and the adrenaline. “I discovered myself on board,” he says. By facing the greatest risks, he has learned what he is capable of. “Sometimes I feel that I've become a better person out on the Bering Sea. I've become aware of what is really important in life, and that knowledge has probably made me less arrogant, more humble.”



Glendenning recently became a father for the second time; he has a baby son and a daughter. Like any father who travels a lot for business, he finds separation difficult. A fishing season can last up to three months, depending on how full the trawler's tanks are. Three months away from home with his family worrying about him. He recently bought a life insurance policy with his family in mind. □

**Stefan Krücken** and his wife, Julia, head up Ankerherz Verlag Publishing ([www.ankerherz.de](http://www.ankerherz.de)) located near Hamburg, Germany. Ankerherz published the German editions of “Time Bandit” and “Northwestern” about the crab fishermen of the Bering Sea. Actors Henning Baum and Axel Prahl recorded them as audiobooks in German.

**Corey Arnold** is a photographer and commercial fisherman. When not at sea, he lives in Portland, Oregon.



# Give Credit to the Gamblers, Speculators and Courageous Proponents of the Enlightenment

Nowadays an insurance policy is available for almost all of life's uncertainties. But how did this come about? A look at the foundation of modern insurance.

By Niels Viggo Haueter

YOUNG NOBLEMEN IN 17TH AND 18TH century England generally enjoyed a good education, but they enjoyed the pleasures of life even more, especially gambling. Many of their fathers were rightly concerned, and a fair number of these sons were confronted with severe cuts to their allowances. But then one of them had an idea for how he could continue to enjoy gambling with his friends in spite of his limited means. The men formed associations in which the first one whose father died would pay off all their gambling debts from his inheritance. This made their creditors feel that they were likely to be paid.

But such speculation was not limited to the nobility. Back then "guarantees" (they were almost bets) were written for just about everything: the date when famous people would wed, when a siege might be lifted, on the likelihood of dying from excessive gin consumption. Above all, the custom of taking out several insurance policies for cargo ships, or one policy for an excessive amount, in the hope that they would sink was widespread. In 1774, the English government passed the Gambling Act, putting an end to this practice and initiating a long series of regulatory oversight measures.

But insurance did not spring up overnight; it arose from a wide variety of institutions and customs. Its development was

anything but linear, and its influences were diverse. The triumph of the Enlightenment and therefore of the sciences played as much a role as dramatic natural catastrophes. The expansion of global trade was an influencing factor as much as frivolous games of chance.

When the young noblemen started their games, there was already a long history of risk mitigation based on solidarity and sharing in fortunes. For millennia, it was common practice to distribute cargo among different ships, and the Genoans – once a leading trade power – established guilds in the Middle Ages to jointly insure ship transports. Other well-known and popular forms of early insurance include burial clubs, fire insurance and "friendly societies" or fraternal organizations, in England. They were often formed by a homogeneous group such as mineworkers, who would pay a small weekly contribution.

These models were based on a religious principle of solidarity, but faced many difficulties as a business model. Often, a large number of the insured died at the same time, such as in a mining accident, so the funds that had been collected were insufficient for the settlements of all surviving dependents. In addition, the premiums that were collected were invested poorly or not at all, and also had to cover operating costs. And finally, the illness-related death



INSURANCE  
MILESTONES

1654  
Discovery of probability theory by Blaise Pascal and Pierre de Fermat

1661  
Founding of the first modern insurance company, the Insurance Office for Houses (in the aftermath of the Great Fire of London in 1666)



rate among the lower social classes was particularly high. This was not yet a viable insurance system.

## The Power of Probability

Can nothing be done about fate? Is life unpredictable? For the Church, this was beyond all doubt. All people must die someday, and it is God who chooses the time. It was a sin to speculate on death or calculate when it would come. But this is exactly what happened in the aftermath of the Enlightenment. Scientists had been systematically researching the logic of the universe since the Renaissance, and a growing number of fields were permeated by rational thought, replacing the old ways of explaining things.

Mathematics played an important role, but once again it was the gamblers who provided the momentum for calculating probability – and this became the foundation of actuarial science in life insurance. In 1654, the Frenchman Chevalier de Méré wanted to find out what the probability was of rolling a six in a certain sequence. Mathematicians Blaise Pascal and Pierre de Fer-



**1842/1852**  
Founding of the first pure  
reinsurance company,  
Kölnische Rückversicherung

**1883**  
Otto von Bismarck's  
“Health Insurance Bill,”  
the first comprehensive  
social security insurance

**1906**  
San Francisco earthquake,  
the first mega-event in  
insurance history; also dem-  
onstrated how international  
the insurance industry had  
become

**1920s**  
Inflation and economic  
crisis force insurers  
to increasingly deal  
with monetary  
and financial risks

**1973**  
First proposal for rein-  
surance futures to the  
Chicago Board of Trade  
(CBOT), the world's  
oldest options and futures  
exchange

mat were able to use a number triangle to show the probability with an increasing number of dice.

This attempt at predicting the future and thereby challenging divine providence was in direct opposition to Church doctrine. Yet even the clergy were unable to completely ignore the logic of this model and other newly discovered laws. They co-opted them for their own purposes and attempted to use statistical and scientific logic to prove the existence of divine order. Ironically, the death tables they began to collect later became a key tool for life insurance providers.

Shortly after Pascal and de Fermat, mathematicians in Great Britain, Germany and Holland applied probability calculations to life insurance – but the insurers were not yet convinced of such methods. Life insurance continued to be based on speculation, and the invention of stock shares did its part there. In England, the stock boom in the late 17th and early 18th centuries saw many insurance companies being founded, dubious ones in particular, leading to risky speculation by businesses and investors.

### Life Becomes Predictable

Life insurance was put on a healthy foundation later on. The change came when mathematician James Dodson tried to

purchase a life insurance policy from the Amicable Life Assurance Society. He was refused due to his advanced age of 45, which angered him so much that he proposed a mathematical solution for more equitable life insurance. Premium payments were to be calculated as a percentage of life expectancy. This was a fundamental principle for the Equitable Life Assurance Society, founded in 1762, five years after Dobson's death.

English philosopher and preacher Richard Price later managed to develop a cost model on this basis. In 1774, he wrote a treatise for Equitable Assurance on calculating profitability in life insurance. It had been discovered that bookkeeping did not provide reliable conclusions on the current financial situation of a company. It was impossible to estimate how much the individual life insurance policies were worth, much less determine whether Equitable Assurance was profitable or not using the current premium structure. Price lived up to his name and calculated a new premium model based on current and expected mortality. From then on, life insurance no longer had to engage in speculation.

The market economy ideals emerging largely from Great Britain put pressure on the strict religious thinking in Southern Europe. Nevertheless, skepti-

cism toward science remained high. This started to change when a natural disaster cast doubt on the traditional interpretation of divine omnipotence. In 1755, an undersea earthquake off the coast of Portugal triggered a tsunami that destroyed almost the entire city of Lisbon. It was especially vexing that the red light district in particular was spared from destruction – but not the churches.

Many believed that if an omnipotent God wanted such a thing, then He could not be benevolent; and if He were benevolent, then He could not be omniscient. The theological problem of omnipotence raised its head again and paved the way for the ideals of the Enlightenment in the South – and thus the expansion of the ideas of insurance beyond Northern Europe. Additionally, the earthquake provided the impetus for seismology, which plays an important role for insurers.

### Rising From the Rubble and Ashes

Another catastrophe marked a turning point in the history of property insurance. In 1666, the center of London was destroyed by a massive fire. Almost nothing was insured at that time. For innovative business people, the reconstruction of the city was a financial boon. Nicholas Barbon, an economist, banker and early >



**1992-1998**  
Fourth merger and acquisition wave with focus on takeovers in the same industry sector

**2001**  
9/11 is the largest manmade insured event

**2008/09**  
Insurance sector proves itself crisis-resistant



provider of mortgages, earned a fortune in the rebuilding and then founded the first truly modern insurance company in 1681, the Insurance Office for Houses.

Barbon was an early proponent of free market theory and for him, it was the prospect of income from premiums rather than the solidarity that was enticing. It was also clear to him that the new business should be a joint stock company, the first in the industry. Although the company did not enjoy long-term success, using stock shares to raise debt capital for insurance would become an important advantage over the traditional mutual insurance associations. This ensured sufficient operating capital and allowed risk capital to be managed separately. Subsequently, a great number of insurance companies were founded. Some of these even had their own firehouses that, in case of fire, would attempt to save houses insured by that company first.

However, a great number of insurance companies were founded with purely speculative motives, and many of those failed by 1720 at the latest, when the South Sea Bubble burst and countless investors were driven to ruin. By contrast, the coffee house Edward Lloyd opened in 1688 fared rather well. Ship owners met there with colleagues, who over time came to underwrite each other's transport risks,

and Lloyd's became a market that brought brokers and customers together.

In 1776, Scottish economist Adam Smith, one of the most prominent promoters of this new economic thinking in Great Britain, published his book "The Wealth of Nations" in which he not only proposed free competition as a prerequisite for prosperity, but also discussed the personal responsibility of individuals. He praised insurance as a rational institution and elevated it to a moral obligation. He considered not insuring oneself as showing "thoughtless rashness and presumptuous contempt of the risk."

### Beyond the Borders

The onset of the Industrial Revolution and the expansion of colonies brought many new risks that had to be insured. English society's immense demand for sugar from the colonies was associated with problems previously unknown in the 18th century. Refining sugar products was extremely capital-intensive, and not just because of the many slaves needed. Aside from the dangers posed by sea transport, there was the risk of fire in the refining vats and rum distilling equipment.

In 1782, an association of 84 sugar refinery owners founded Phoenix Assurance in London, the first truly significant global, modern insurance company

that saw long-term success. Their success was also due to capitalization via stock shares and the availability of debt capital that enabled rapid geographic expansion. One year after being founded, the company was already insuring refineries in St. Petersburg, Smyrna (now Izmir, Turkey), Lisbon and beyond within a short amount of time. It was also the first company to establish branch offices abroad, which substantially improved risk distribution.

Modern insurance began to gradually break down the traditional forms of mitigating risk such as burial clubs and fire insurance. The scientific basis of actuaries, the modern business form of a joint stock company and the geographic distribution of risk made the British insurance model an unbeatable business idea. It would conquer the world over the next few centuries. □

**Niels Viggo Haueter** is the Head of Corporate History at Swiss Re. The world's oldest existing reinsurance provider is celebrating its 150th anniversary this year. The company was founded in 1863 by Helvetia Insurance, Schweizerische Kreditanstalt (Credit Suisse) and the Commercial Bank of Basel to counter the dependence of Schweizer Assekuranz Insurance on foreign reinsurers.

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**Safety and Security – Sleeping  
Peacefully in Uncertain Times**

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# Sweet for Me, Bitter for You

Diabetes researchers see it as a health risk, for producers (and dentists) it is their livelihood, and the rest of us find it almost impossible to resist: seven perspectives on sugar.



**Anoop Misra, 54, chairman of the Center of Excellence for Diabetes, Obesity, Metabolic Diseases and Endocrinology, New Delhi, India.**

When it comes to diabetes, India is sitting on a ticking time bomb. This disease has become an epidemic – in some regions one in five people is diabetic. Sweets are a popular gift and are often associated with religious occasions. Personally, I prefer salty foods. But most Indians have a pronounced sweet tooth. We are bigger around the waist than Europeans, and have a higher percentage of body fat. Many people in India have a hump at the back of their neck or a double chin: deposits of excess fat.



**Johanna Spohrer, 14, high school student, Hamburg, Germany.**

I eat a lot of chocolate, gummy bears and M&M's. I like the brown ones best, maybe because they look like chocolate. Nutella is my absolute favorite food. My mom says I shouldn't eat so many sweets, and I guess she's right. When I exercise after eating a lot of sugar, I get really dizzy. My teeth aren't so great, but that's not because of sweets. Everybody gets a cavity or two.



**Andrés González Aguilera, 47, general manager of Cooperativa Manduvirá Ltda, Asunción, Paraguay.**

We established our cooperative 38 years ago. It has grown from 39 members in the beginning to 1,500 today. Harvesting sugar cane is more than just a job for us. We see fair trade products as a way to improve the quality of life of our small producers. With the help of Oikocredit, we're building an environmentally friendly plant to produce organic sugar. Initially, a lot of people said that we were crazy – like a puppy chasing the moon. But today we export to 18 countries.



**Dr. Zsuzsanna Juhasz, 59, dentist, Budapest, Hungary.**

Sugar feeds the oral bacteria that attack the teeth. If there were no sugar, there would be no plaque and no tooth decay. So sugar is the root of the problem. If you let plaque and caries go without treatment for an extended period, complications develop – which means tooth extractions, root canals and implants. Every year I treat 300 people for cavities. So sugar brings me a steady supply of customers.



**Jordi Butrón, 45, owner and chef of the dessert restaurant Espai Sucre, Barcelona, Spain.**

We process a ton of sugar every year. Everybody likes sugar. Adding sugar gives any food a more intense aroma and taste. Sugar is amazing – it goes with everything: sweet, salty, bitter or sour. Personally, I love our sweet-salty butter. You have to be careful, of course, since sugar can easily burn or crystallize. But otherwise? Sugar opens up a world of possibilities.



**Selma Illitz, 33, marketing manager for Wiener Zucker, Vienna, Austria.**

Advertising for sugar needs to appeal to people's emotions and evoke a pleasant, homey feeling, a sense of warmth and security. You want to remind people of happy moments, a birthday, a wedding cake. Tradition is important. The average Austrian household consumes nearly 8 kilograms of sugar every year. Our main target group is women over 25. We underscore the association of sugar with Austria; that's why we recently produced an ad featuring the famous Spanish Riding School, which has a long tradition in Vienna as well.



**Alf Stevens, 68, secretary of the Ethanol Producers Association of South Africa (EPASA), Johannesburg, South Africa.**

We extract bioethanol from sugar cane and other plant sources. It can be used as a substitute for gasoline in cars or even as a fuel for airplanes. No carbon is released during bioethanol production. But we're now facing some challenges: More and more South African land used for growing sugar cane to produce bioethanol is being taken over by the lumber industry. Irrigation is another problem. Millet, which thrives even during dry periods, is increasingly displacing sugar.

Compiled by  
Anna Miller and Dennis Bühler.

#### "WHITE GOLD"

Sugar cane was first cultivated on plantations in the Middle Ages, but in the beginning sugar was a luxury reserved for members of the upper class.

—  
Sugar is sometimes called "white gold."

—  
The first sugar cubes were made in Austria in the mid-19th century. Before long industrial production took over.

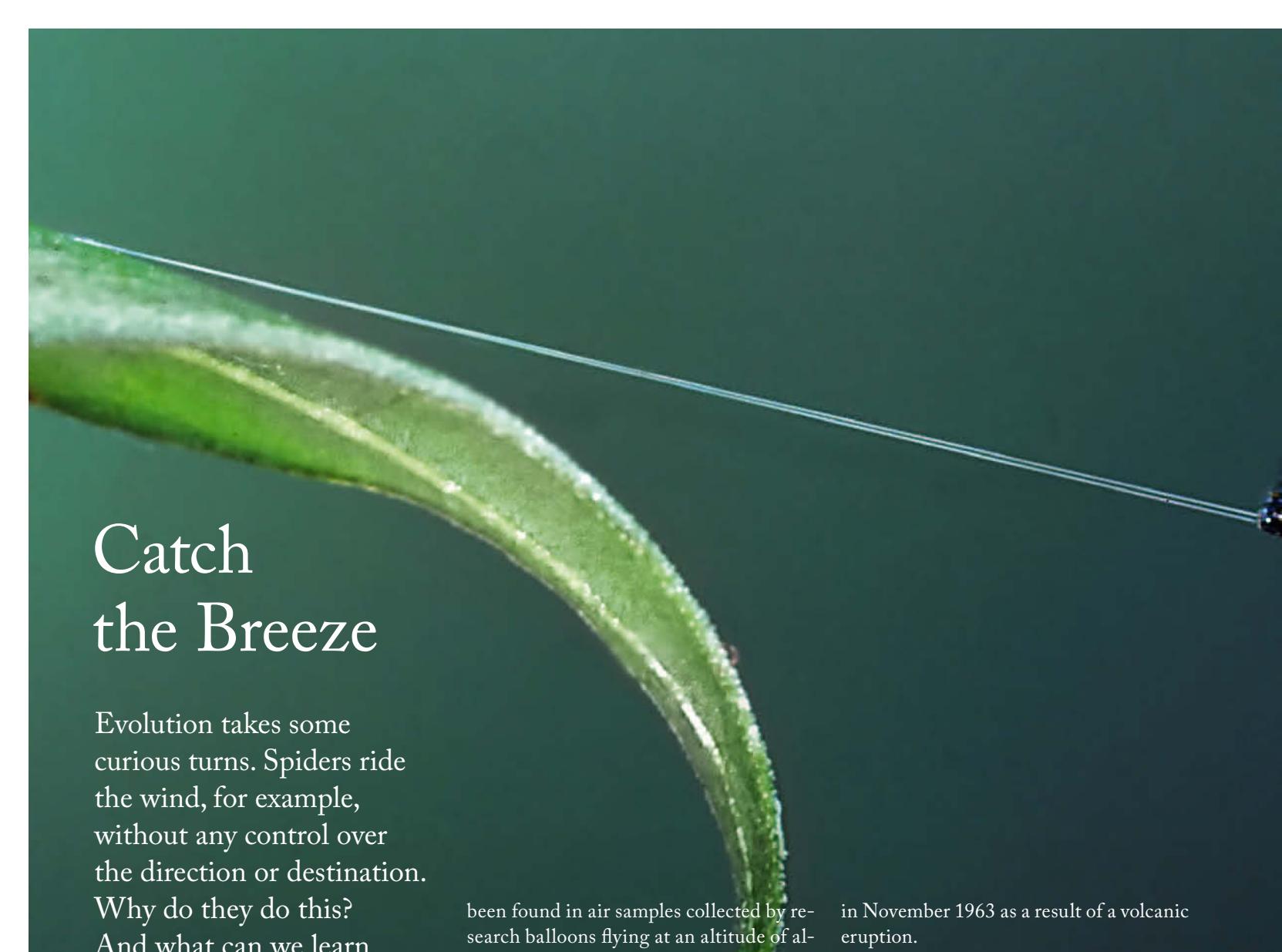
Sugar is both a staple and a luxury food. It has no expiration date.

—  
Today the world's most important sugar-producing countries are Brazil, India and China; the top producers in Europe are France, Germany and Poland.

—  
The largest factory for the production of cane sugar is located in Sudan. Switzerland has sugar factories in

Aarberg (canton of Bern) and Frauenfeld (canton of Thurgau).

—  
Worldwide, nearly 170 million tons of sugar was produced in 2011. Some 80 percent of sugar is not sold directly to end consumers, but to candy and beverage companies, bakeries and the pharmaceutical industry.



# Catch the Breeze

Evolution takes some curious turns. Spiders ride the wind, for example, without any control over the direction or destination. Why do they do this? And what can we learn from it?

By Hanna Kokko

IMAGINE A BEAUTIFUL SUMMER DAY on a meadow, with a light breeze. Also, imagine that you are somehow, magically, able to resist the temptation to check your e-mail on your smartphone, just for long enough to notice a small spider spinning silk. So far, this is unremarkable: that is what spiders do to catch prey.

But look closer: Instead of arranging it into a web, as we might have expected, the spider simply lets the lightweight thread dangle in the air. The spider then appears to stand on tiptoes, with its bottom end as high up in the air as it can manage. Soon enough, the thread is long enough that the breeze carries it, and the spider along with it, high in the air. This is called ballooning and many spiders do it.

Ballooning spiders can go very far. Spiders attached to threads of silk have

been found in air samples collected by research balloons flying at an altitude of almost 5 kilometers. Despite the capacity of spiders to go without eating for days on end, the flying habits of spiders sound mind-bogglingly risky, not least because they lack any control of the direction. It is obviously hard to get data on how many die before they reach anything resembling suitable habitat, but the best case scenario of a nice new meadow with lots of prey, not too few mates, and not too much competition is certainly not guaranteed.

## Out Into the World

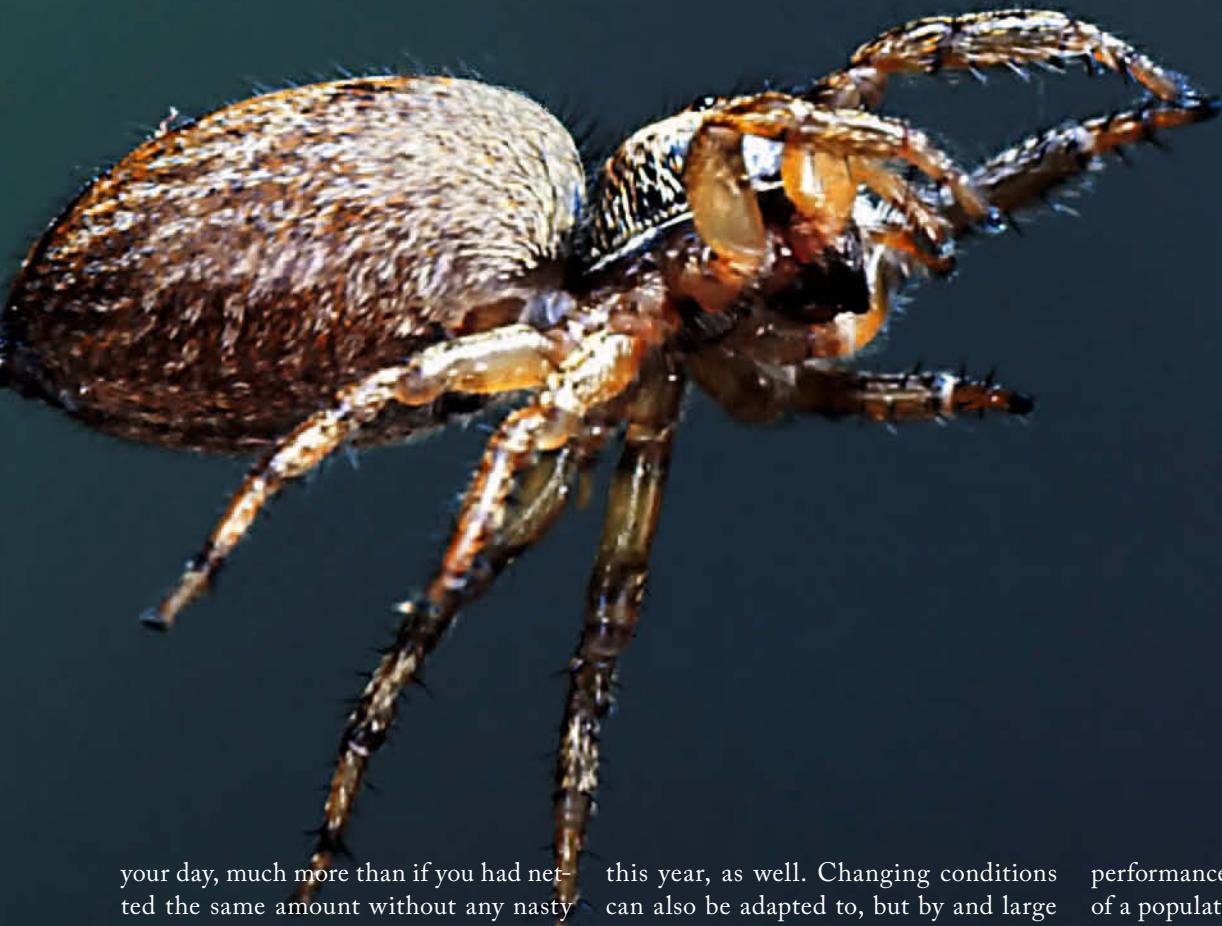
But then, staying put is risky, too. If individuals of a hypothetical species never moved at all, they would not only compete fiercely for resources with their own siblings, but the chances are that the local habitat would not be suitable for millions of years. Too much site-tenacity is not evolutionarily advantageous. Therefore biologists are not surprised when they witness certain degrees of bravery. No wonder, then, that the Icelandic island of Surtsey attracted its first resident spiders soon after the island itself was born

in November 1963 as a result of a volcanic eruption.

And what about us humans? The Nobel laureate Daniel Kahneman recently popularized a plethora of errors and biases inherent in our own decision-making in his book “Thinking, Fast and Slow.” Our attitudes to risk are a weird mix of misjudgments. On the one hand we react much more negatively to losses than we feel happy about gains – which produces risk aversion. On the other hand, we often optimistically extrapolate from current trends as if they really could carry on forever. Sometimes the latter tendencies win, and the list of outcomes is familiar: the Dutch tulip mania in the 17th century, Britain’s South Sea Bubble in the 18th century, the dot-com bubble and countless recent examples.

## Good Days and Bad

How can we be simultaneously so risk-averse and yet so risk-seeking? Our two sides can coexist quite comfortably. Consider a day during which you first make gains and then experience two minor losses. You will feel unduly negative about



your day, much more than if you had netted the same amount without any nasty losses. Silly outcomes, bubbles included, are not that surprising, when we are, emotionally, better at counting events (Plus! Plus! Plus! Minus! What a terrible day!) than keeping track of the total sum, and when our desire to learn is about minimizing the number of bad outcomes and maximizing the ones that make us smile.

When we learn what tends to work, we rarely stop to think whether it is justified to keep assuming that past performance is an indication of the rules of the game in the future, too.

Perhaps – who knows – this could have something to do with evolution’s workings. Spiders have never encountered future environments, yet they have simply evolved to do whatever used to work in the past. All else being equal, the more often new volcanic islands (or some less geologically spectacular new opportunities) emerge, the more optimistic the spiders. Evolution extrapolates. It, too, assumes that the rules have not changed since we last checked. It proceeds as if recent winds and habitat availabilities were the norm

this year, as well. Changing conditions can also be adapted to, but by and large only if they occur with high predictability. The migration of birds, triggered by shortening day length, is a good example.

Intriguingly, though, risk takes a different meaning for an individual than for a group of individuals. Take the term bet-hedging, for example. Loosely speaking, one hedges ones bets to avoid the worst possible outcome. If you optimistically put all your eggs in one (stock market) basket, and that stock crashes, you starve to death. Spider ballooning does not at first sound like a bet-hedger’s work. As an individual, you are doing something phenomenally risky. However, what is the alternative? Always staying put? It is actually this option that amounts to literally laying all your eggs in one basket (i.e. the place of your own birth).

A population is better off if some offspring do well and others die than if all survive, only to be bulldozed to build a new parking lot. Mathematically, there is a weird trick: Increasing variance in the success of offspring can lead to reduced variance – in other words, more reliable

performance – of the evolutionary success of a population.

### The Big Picture

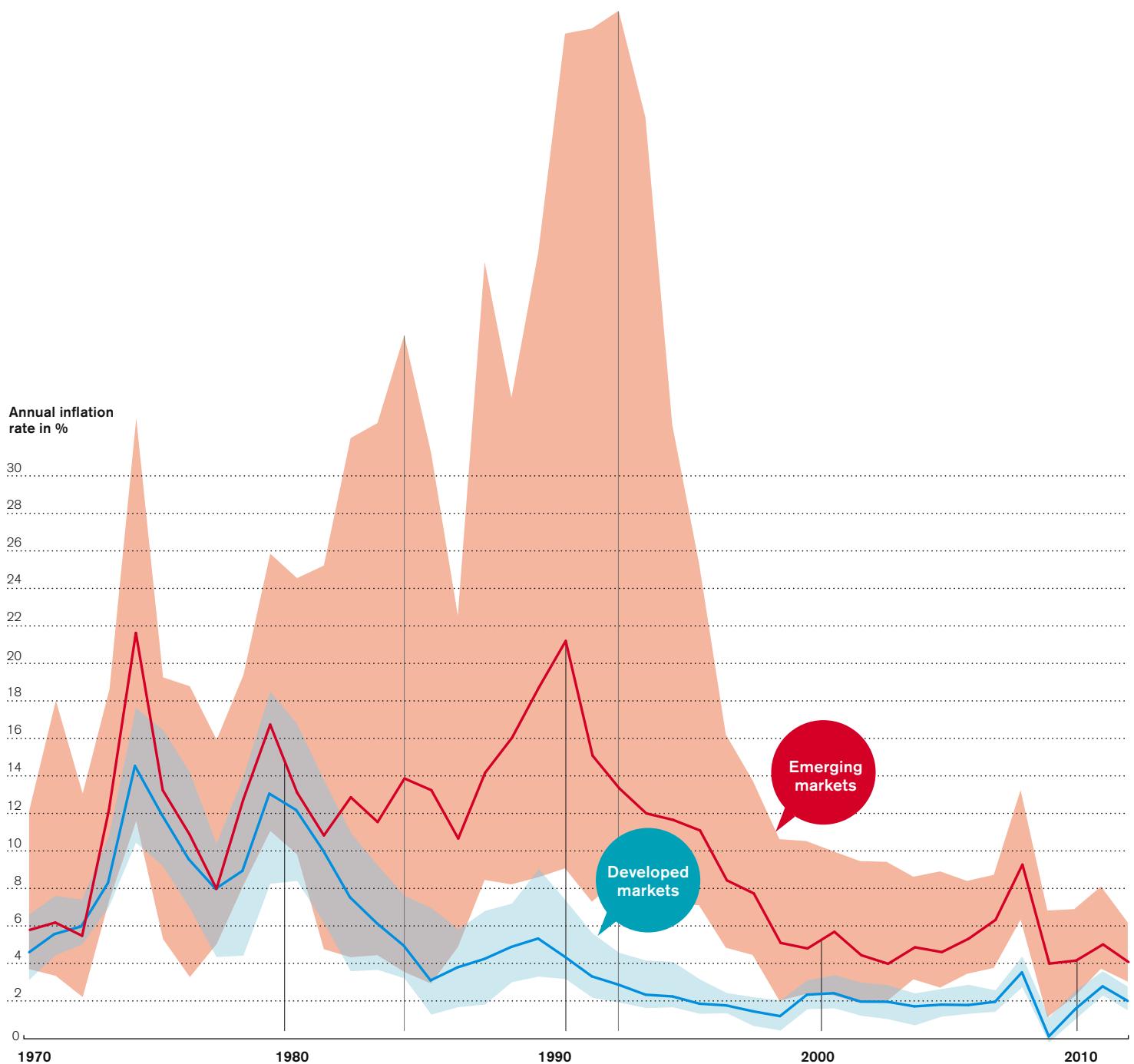
What can we learn from evolution? First, we are good at repeating what seemed to work yesterday and the day before, but tend to ignore signs that the rules of the game are changing – sometimes as a result of our collective actions. Second, we tend to focus on isolated events and often lose the overall picture. Third, risk is good. Not necessarily for the individual risk taker, but for the long-term success of a species. □

**Hanna Kokko** is an evolutionary biologist originally from Finland. She lives in Canberra, Australia, and is a professor at Australian National University and an Australian Laureate Fellow.

# Is Inflation Threatening Us?

The growing money supply is feeding fears of devaluation. Are these fears justified?

By Claude Maurer



The solid lines indicate the median inflation rate for both groups of countries.

The shaded areas extend from the upper to the lower quartile for each group.

Source: Datastream

**A**s the dawn breaks each day across the economic skies, fears about inflation set in. At fault is the enormous swell in the money supply caused by repeated central bank interventions since the financial crisis. A flood of money is, in fact, one of the most important drivers of inflation. Monetarist Milton Friedman's statement that, in the medium-term, inflation is always a monetary phenomenon still holds true. Theoretically, prices rise if the supply of money in circulation is greater than the real supply of goods and services.

However, an expansion of the money supply alone does not mean that this money will also make it into the economic cycle, that it will actually circulate. In past years, the monetary aggregates reflecting the actual purchasing power of the economy, or bank deposits by the public, have hardly risen. In other words, the velocity of circulation of the central bank funds has dropped significantly. To put it another way, the flood of money provided by the central banks to the commercial banks to "feed" them through the crisis – and thus to stave off a worsening of the credit squeeze or even a depression – was hoarded. It never reached the economic cycle.

This helps to explain why, despite the growing money supply, central banks have continued to perform impeccably in terms of maintaining price stability – at least when the rate of price increase is measured against the consumer price index (see chart).

### "Inflating Away" Is Difficult

Various different processes have to be set in motion in order for an inflated money supply to actually lead to inflation. The commercial banks obviously have to stop hoarding the central bank funds and extend them in the form of loans. Kicked off in this manner, a credit boom would be one potential trigger for a frequently observed, traditional inflation driver: excessive demand.

In light of the still ailing financial system, it is rather unlikely that commercial banks will extend an excessive amount of loans in the near future. Quite the contrary. They will continue to hoard the cheap central bank money. On the other hand, it is more likely that countries could attempt to "inflate away" their national debts. Major voices are already

calling for tolerance of a higher rate of inflation so that the real value of existing debt will decline and thus become more manageable.

But in today's integrated world of finance, inflating away is easier said than done. The financial markets are forewarned and nervous. At the first signs of an attempt to inflate away, they would immediately call for higher interest rates, thereby preventing inflation. This type of debt reduction will only succeed when the financial system can be compelled to forgo higher interest rates.

However, such financial repression would only be realizable on a major scale if countries abolished such foundations as legal certainty or the right of ownership. In other words, far-reaching political decisions would be necessary for the risk of inflation to become uncontrollable. In fact, most of the more than 50 cases of hyperinflation between 1920 and 2008 are attributable to extreme political events

### The flood of money provided by the central banks never reached the economic cycle.

such as the collapse of states. Of course, such a negative collapse scenario can currently be imagined, in particular for the Eurozone, although Credit Suisse Economic Research considers the probability of its occurrence to be low.

The wage-price spiral is another inflation driver. In the expectation of rising prices, employees demand higher wages, and companies increase prices in an attempt to compensate for the anticipated higher personnel costs. Thus, expectations are a significant catalyst for this inflationary process.

In addition, it becomes clear that inflation can develop primarily in an environment lacking in competition. Only under these circumstances can companies actually increase prices and employees get higher wages. Globalization and the greater competition that accompanies it have, in the past, structurally reduced the conditions for this; the risk of a wage-price spiral has declined accordingly. As long as global competition is not suffocated by a wave of protectionism – and

indications of this are few – a spiral like this is unlikely to gain traction.

The central banks play a key role in taming the danger of inflation. As long as their policies are credible, expectations of price increases will fail to take root. The Swiss National Bank shows that there is currently confidence in monetary policy geared toward price stability.

### Credibility Is Not a Law of Nature

An indicator calculated by Credit Suisse Economic Research for Switzerland serves as a measurement of credibility. The indicator is defined as fluctuating on a scale of 0 (low credibility) to 1 (high credibility). The credibility of a central bank, however, is not governed by the law of nature, and is instead dependent on both endogenous factors – particularly the performance of a central bank – as well as on structural factors. The most crucial structural factor is independence. Numerous empirical studies prove that independent central banks achieve low rates of inflation, and this is not done at the expense of economic growth. The independence of the central bank can, of course, be politically rescinded. Just as globalization can be reversed or the financial system theoretically be forced to purchase national debt. The decisive factor is whether or not the political process is headed in this direction. And this, in turn, depends on the preferences of the deciding political forces.

So, take a moment and enjoy the dawn breaking across the economic skies, as the risk of inflation still appears to be low. Aging majorities in the developed markets will ultimately opt for stability, especially because inflation would erode the wealth they have accumulated. The same applies for most emerging market economies, where large sections of the population have suffered greatly under inflation in past decades. □

**Claude Maurer** is the Head of Swiss Macroeconomic Research at Credit Suisse.

# Switzerland on the Edge

In comparison to almost every other country, Switzerland and its residents are doing extraordinarily well. Small country, small problems? It's not that simple. A six-point diagnosis.

By Oliver Adler and Sara Carnazzi Weber



The only noteworthy natural resource in the Alps is water: Stein Lake and Stein Glacier at Susten Pass.

## 1 — The World's Plaything, Prone to Blackmail?

Recently, Switzerland has been under more pressure from other countries than almost any time since World War II. Not only do their US and European friends appear to have forgotten the Swiss, they have virtually abandoned them. And what is more, they are piling on the pressure. They are demanding the elimination of bank client confidentiality – and a great deal of money as well. What are the reasons for this? The end of the Cold War weakened certain special arrangements that had been accorded in particular to the Swiss financial center. In addition, the global financial and fiscal crisis awakened financial greed

and further increased pressure on Switzerland. Does this pose a fundamental threat to Switzerland, either economically or politically? Hardly. After all, there is not much benefit for neighboring countries if Switzerland's economy is permanently weakened. Switzerland will have to adjust. It definitely does have some room for negotiation – even in the new environment.

## 2 — At the Mercy of the World Economy?

If you measure riches in terms of natural resources, Switzerland is as poor as a church mouse. It does not really have any noteworthy natural resources other than

hydroelectric power (and fresh air). Poor soil and a cool climate make for subsistence-level agriculture at best. So it is not surprising that Switzerland was one of the poorer countries in Europe well into the 19th century. People did not immigrate to achieve prosperity, they emigrated. Why did this situation change so dramatically? Success came with the rapid industrialization that began in the middle of the 19th century. The country's intensive participation in the global economy – rather than a defense of the status quo – has since ensured success. Exported goods now account for about 35 percent of gross domestic product. The figure increases to more than 50 percent when services are included. Both percentages have grown in

the last two decades. Instead of producing cheap, mass-produced goods, Swiss industry has always focused more on specialty and niche products, primarily chemicals and pharmaceuticals, machines, clocks/watches and precision instruments, in addition to food and specialized financial services. In an ever-expanding global market and with ever-finer work division of labor, specialization is the key to success. A high level of investments – including investments in education – is essential to securing the country's leading positions. The more invested, the higher the wages and the greater the prosperity.

### 3 – Too Many Foreigners?

As a percentage of the overall population, Switzerland now has more immigrants than the US, the immigration destination par excellence. More than one-fifth of all residents are citizens of another country and about one-third have a recent history of immigration, either as immigrants themselves or as first or second-generation descendants of immigrants. The multicultural society has long been a reality. In the 1950s, Italian immigrants seemed foreign, but now "secondos," as they are known, are seen as Swiss. The integration has been less successful in the eyes of the general public, however. Popular initiatives against immigration are an expression of this discomfiture. Politicians can be tempted to exploit this rather than curbing social conflicts. The development of the last few years especially shows, however, that the Swiss economy benefits from the growth-promoting effects of immigration, in particular that of highly skilled workers.

### 4 – (Too) Big Banks?

Along with world-leading industrial concerns and insurance companies, Switzerland has two of the world's biggest banks. Size is not seen as much of a risk for the former, but there is unease concerning the latter. Why is that? In traditional banking, savings deposits are loaned to indi-

viduals and companies at higher interest rates over a longer period. It is difficult for banks to reduce their (illiquid) credits, but savers can withdraw their (liquid) funds at any time. In order to counter this "flight risk," governments introduced guarantees for deposits (and other creditors). The catch is that this guarantee can lead bankers into engaging in excessively risky business. If it goes well, they earn a lot, but if things go awry, the bank has to be rescued by the government to prevent a financial and economic crisis. This moral hazard can be defused, either by forbidding banks from engaging in risky business, or requiring them to maintain sufficient capital. There is a different path – the "Swiss finish." For banks and their reputations (and not just in Switzerland), it is important to be done with the debate about the implicit state guarantee. Taxpayers should no longer feel that they will have to step into the breach due to the banks' errors. And smaller banks are not immune to the moral hazard problem either.

### 5 – Real Estate: From a Bubble to a Crisis?

Real estate prices in Switzerland have continued to rise for years. Driven by low interest rates and massive immigration, the price of single family dwellings has increased by about 50 percent since the turn of the millennium, and condominiums by almost 80 percent. This overheating of the market, which began in the larger urban centers, is continuing to spread. The increasing disconnect between prices and incomes hints at the formation of a bubble. Is Switzerland heading for another real estate crisis? For the time being, the risk seems limited. Real estate crises are characterized by a particular sequence of economic developments: high debt on the part of owners, sudden and rapid increases in interest rates, falling prices for real estate, a general recession, all followed by banks sharply curtailing new loans. Higher interest rates appear very unlikely in the next one to two years, and the economy is, if anything, gaining momentum. So it is

all the more important that the authorities and banks limit the growth of mortgage debt as a preventive measure. In this way, demand for real estate can be eased, while gradually deflating the price bubble.

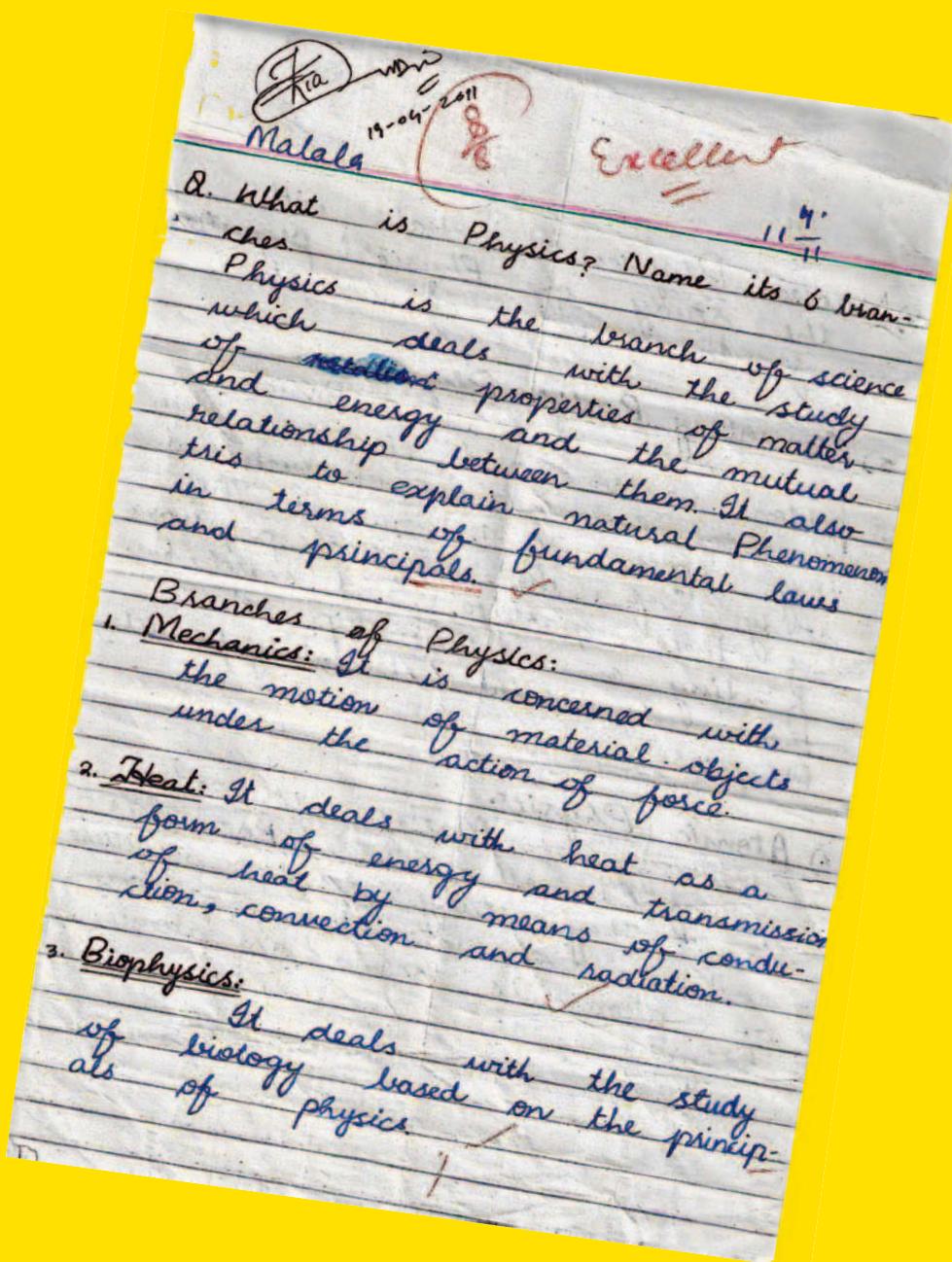
### 6 – Too Much Democracy?

Churchill said that democracy is the best of all (bad) political systems, and is vastly preferable to the worst, a dictatorship. But can there be too much of a good thing? Two criticisms have been leveled at Switzerland's direct democracy. It is inefficient because it takes too long to make political decisions, and it is potentially dangerous, because decisions made by "uninformed" voters could harm the country or some of its people. Because of the system of popular voting by referendum and the need to a secure majority of the cantons, some decisions that, in retrospect, appear overdue are slow in coming, such as women's suffrage, introduced in 1971, and Switzerland's entry into the United Nations in 2002. The social and economic costs of these delays are difficult to assess. It is also unclear whether Swiss voters have made "damaging" decisions more often than they occur in democracies where government experts (as in the UK and France) or professional lawmakers (as in the US) have greater decision-making power. Deciding not to join the European Economic Area may have been harmful, although Switzerland's financially policy is nevertheless fairly stable – probably because the people who pay directly determine spending and taxes. A debt limit was added to the Swiss constitution, however, to achieve this stability. Every democracy needs its checks and balances. □

**Oliver Adler** is Head of Economic Research at Credit Suisse and **Sara Carnazzi Weber** is Head of Macroeconomic and Policy Research.

# Somebody Has to Do It

Reminders of women who took up a cause.  
A tip of the hat to the pioneering spirit,  
pluck and daring of the world's women.



1. Her courage was a lesson for others.

2. Still a shining example.





3. She could soar like  
no one else.

4. In the name of the  
(White) Rose.



5. Living in the fast lane.





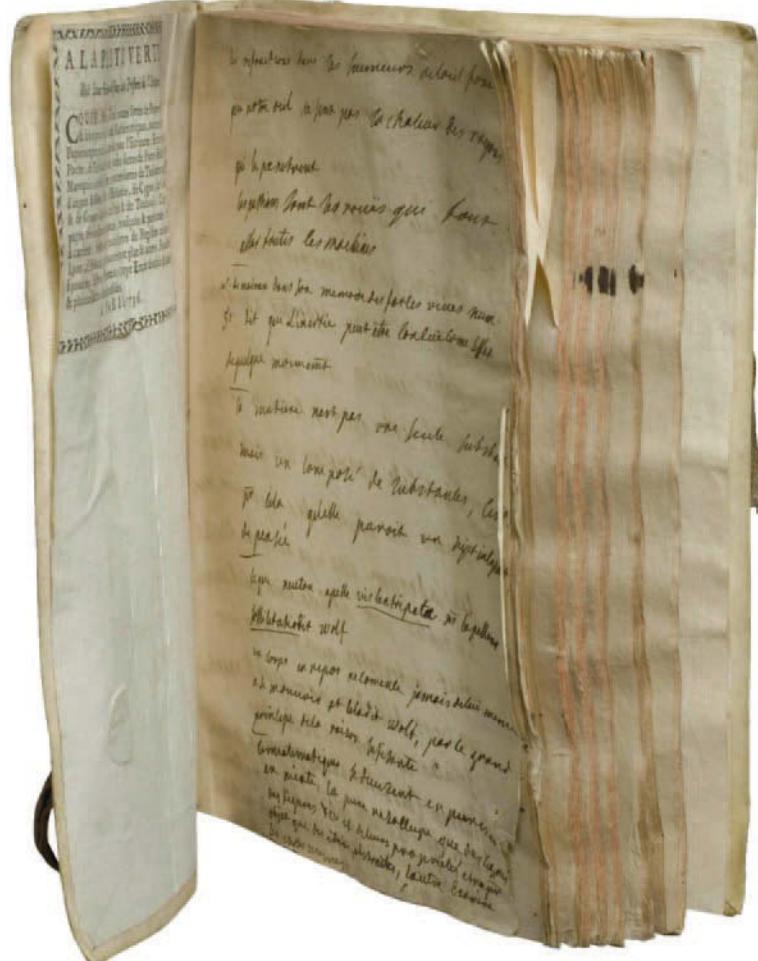
6. She used her handbag  
to make a point.



7. More than lip service.



8. Lived a  
(radio)active life.



9. Multi-talented –  
but not a man.



10. By refusing to  
get up, she stood  
up for a cause.



11. They fought for  
their rights.

1.

**Malala Yousoufzai**

 There is no minimum age for heroism. Malala Yousafzai, living in a remote region of Pakistan, wrote a blog defending the right of girls to attend school. Now 15 years old, she comes from Mingora, a lovely mountain village near the Afghan border. Her home region, which was once described by Queen Elizabeth as the "Switzerland" of the former empire, had been taken over by the Taliban, who banned listening to music and refused to allow girls to attend school. Malala slipped her posts about the Taliban's reign of terror to a BBC reporter, who published them online. On October 9, 2012, as she was riding home from school, a Taliban gunman stopped her bus, shouting, "Which one of you is Malala? Step forward or I'll shoot all of you." She was identified, and he shot her in the head and neck. Seriously injured, Malala survived. In an ironic twist, she was flown to Queen Elizabeth Hospital in Birmingham for treatment. She is the youngest person ever to be nominated for the Nobel Peace Prize.

2.

**Joan of Arc**

 A peasant girl, warrior, folk heroine, heretic – Joan of Arc was an exceptional young woman. And she made her mark in just 19 short years between her birth (around 1412) and when she was burned at the stake (1431). It was said that Joan, called the Maid of Orléans, had more determination and courage than even the strongest men. She fought for the French people in their battle against England, but also for women – at least according to

many feminists. The far-right Front National party has laid claim to France's patron saint as a "true patriot," while Catholics venerate Joan, who was canonized in 1920, as an inspiring religious figure. Joan of Arc has been immortalized in countless books, artworks, films, plays and musical compositions, and the debate about the significance of her life continues to this day. Her many diverse admirers recently agreed on one thing, however: They were all outraged when a historian claimed to have found proof that Joan of Arc was a man.

3.

**Amelia Earhart**



When she first experienced public acclaim, she dismissed it as undeserved. That was in 1928, when Amelia Earhart was celebrated as the first woman to have crossed the Atlantic by plane – in the passenger's seat. She knew that her rightful place was somewhere else: in the cockpit. Four years later, she piloted a solo flight across the Atlantic, making her the female counterpart of Charles Lindbergh. While she set numerous records as an aviator, her life was not lived in the clouds. She was active in the pacifist movement and became an idol for many American girls. Women can do anything men can do – that was her belief, and she was living proof that it was true. To celebrate her 40th birthday, Amelia Earhart set her sights on another goal: She wanted to be the first person to circumnavigate the globe at the equator in a twin engine monoplane. She never arrived at her destination. Even today there are occasional reports that pieces of her plane's wreckage, bones or articles of clothing have been found. The fashion she fa-

vored is often seen in magazines or on the streets; the "queen of the air" had a distinctive style: a flight jacket, leather boots and narrow trousers. The look is considered retro today, but the message is anything but.

4.

**Sophie Scholl**



She believed in the power of words, and that was what eventually led to her tragic death. On February 22, 1943, when she was only 21, Sophie Scholl was put to death by a Nazi executioner. As a young girl, she had been fascinated by the Nazis' totalitarian ideology. She voluntarily joined the girls' organization Bund Deutscher Mädel and steeled herself with challenges no less daunting than those faced by the boys in the Hitler Youth. But it was when Sophie, a committed Christian, turned against the Nazi regime that she truly demonstrated her courage – secretly, yet in public. With her brother, Hans, and other members of the resistance group "The White Rose," she distributed leaflets opposing the Nazi regime, at enormous personal risk. While distributing their sixth leaflet, she and the other members of the group were turned in by a worker at the University of Munich. Four days later, her life ended at the guillotine. Her courage to stand up for her convictions lives on in the streets, town squares and schools named after Sophie and Hans Scholl, and most of all in people's minds and hearts.

days. Wearing loud, psychedelic clothing, demonstrating for peace, showing little concern for a regular job or personal hygiene – these things did not always provoke a positive response. Janis Joplin was predestined to live a life off the beaten track: Even in school she was considered "weird." She was an outsider; as a 20-year-old college student at the University of Texas in Austin, she was voted the "ugliest man on campus" in 1963. Her classmates had their fun, but Janis Joplin had her voice: a true force of nature! Oh Lord, how can a white blues-rock singer sound so authentic? Janis Joplin knew how. Her best-known song asked: "Oh Lord, won't you buy me a Mercedes-Benz?" She herself drove a brightly painted Porsche convertible. As a woman who symbolized the hippie era, she was a pioneer of the rebellious "sex, drugs and rock 'n' roll" era. As well as one of its first victims. In 1970, she died of a heroin overdose in Los Angeles, at the age of 27. A shoe manufacturer found it "hip" in 2013 to name a sandal after her, priced at 248 euros. Oh, Lord!

5.

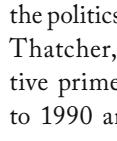
**Janis Joplin**



Before there were today's hipsters, there were the hippies. Being a hippie took considerable chutzpah in the early 1960s. Wearing loud, psychedelic clothing, demonstrating for peace, showing little concern for a regular job or personal hygiene – these things did not always provoke a positive response. Janis Joplin was predestined to live a life off the beaten track: Even in school she was considered "weird." She was an outsider; as a 20-year-old college student at the University of Texas in Austin, she was voted the "ugliest man on campus" in 1963. Her classmates had their fun, but Janis Joplin had her voice: a true force of nature! Oh Lord, how can a white blues-rock singer sound so authentic? Janis Joplin knew how. Her best-known song asked: "Oh Lord, won't you buy me a Mercedes-Benz?" She herself drove a brightly painted Porsche convertible. As a woman who symbolized the hippie era, she was a pioneer of the rebellious "sex, drugs and rock 'n' roll" era. As well as one of its first victims. In 1970, she died of a heroin overdose in Los Angeles, at the age of 27. A shoe manufacturer found it "hip" in 2013 to name a sandal after her, priced at 248 euros. Oh, Lord!

6.

**Margaret Thatcher**



If you have an "-ism" named after you, you have definitely made your mark, for better or worse. "Thatcherism" refers to the politics and style of Margaret Thatcher, Britain's conservative prime minister from 1979 to 1990 and the first and only woman to have held that position to date. Her legacy remains controversial today. Some see her as the savior of the nation, others as the cause of the downfall of British society. She is known as the "Iron Lady," and also inspired the term "handbagging," referring to her determination to push through her agenda. At

important meetings she would set down her handbag, and everyone knew: She means business. A handbag as a weapon – what man can match that?

## 7. Estée Lauder



She may not have changed the world, but she has done a lot for the faces of millions of women, making them fresher, more charming, more beautiful – any objective observer will surely agree. Whether she delivered on the promise of eternal youth in such product names as “Revitalizing Supreme Global Anti-Aging Eye Balm” is an open question. Estée Lauder, the elegant cosmetics queen, dedicated herself to making life more aesthetically pleasing. Inspired by her uncle, a pharmacist, she mixed together her first skin cream; later her products were made in high-tech laboratories. But it was her business sense that paved the way for the international success of the Estée Lauder brand: She was the first to hand out free samples to her customers (a marketing tool that countless other companies later adopted with much success), and she let women try out her creams, perfumes and lipsticks in the store. She also targeted the high-end segment of the market – her products cost several times as much as those of her competitors. It was a strategy that paid off over the years: When Estée Lauder died in New York in 2004 at the age of 97, she was one of the world’s wealthiest women.

## 8. Marie Curie



If Hollywood had as much interest in scientists as it does in extraterrestrials, surely a

movie would have been made about Marie Curie’s life since the last one in 1943. A brief overview of her turbulent life, which she devoted entirely to three causes: 1) science, 2) humanity and 3) love.

1) Denied admission to the University of Warsaw; worked as a teacher to finance her first attempts at research; first female professor at the Sorbonne; coined the word “radioactive;” discovered the elements polonium and radium; the only woman of four people to receive more than one Nobel Prize, and one of the only two people to win it in different disciplines (physics and chemistry); died in 1934, probably as a result of exposure to radioactive elements.

2) Treated wounded soldiers in World War I; developed a mobile X-ray vehicle for use at the front; worked for the League of Nations.

3) Widowed at an early age when her husband and fellow scientist, Pierre Curie, was run over by a truck; suffered from depression; her affair with a married man caused a scandal; she was the cause of a duel; she experienced hostility as a Jew, a foreigner and a proponent of women’s rights.

Epilogue: Her daughter Ève became a writer and NATO advisor; daughter Irène was a chemist and also won the Nobel Prize; granddaughter Hélène married the grandson of Paul Langevin, the man with whom Marie Curie had had an affair.

## 9. Émilie du Châtellet



Voltaire, her sometime lover, called her “divine”; but her life was firmly grounded in the real world. Émilie du Châtellet was an active, modern woman in 18th-century France. After

dutifully marking time in an arranged marriage to the Marquis Florent-Claude du Chastellet-Lomont and bearing him three children, she left home to live the life she truly wanted. She became a mathematician, physicist, philosopher, translator and advocate for women’s rights. Her translation of Isaac Newton’s “Philosophiæ Naturalis Principia Mathematica,” published along with her commentary, is considered her crowning achievement. She was instrumental in spreading the word about Newton’s scientific insights throughout Europe. But back to Voltaire: Émilie du Châtelet lived and worked with Voltaire for several years at the Château de Cirey, which became a gathering place for literary figures and philosophers. After her death, he wrote: “She was a great man whose only fault was being a woman.”

## 10. Rosa Parks



It is considered bad manners to refuse to give up your seat, and rightly so. In the case of black seamstress Rosa Parks, however, remaining seated made her a heroine. On December 1, 1955, she refused to give a white man her seat on a bus in Montgomery, Alabama, as required by law in the segregated South. At that time 42 years old, she was arrested and sentenced to a fine of 10 dollars in addition to court costs of 4 dollars. Her courageous decision not to get up, an example of how seeming passivity can be more effective than any action, made her an icon of the civil rights movement. Today that bus can be seen at the Henry Ford Museum in Dearborn, Michigan.

## 11. Suffragettes



There are many women who deserve accolades in the fight for gender equality: Olympe de Gouges, Clara Zetkin, Betty Friedan, Alice Schwarzer... and let us not forget the suffragettes, the British and American women of the early 20th century who shook the foundations of their male-dominated world by fighting for women’s rights. Their primary goal was women’s suffrage, and their methods included everything from demonstrations to smoking in public to hunger strikes. While they began by preaching nonviolent resistance, later on there were incidents of arson and bombings. It was violence of a different kind, however, that eventually paved the way for their success. Women were needed in the workforce after the devastation of World War I, and as a result women gained greater acceptance in every sector of life. In the home countries of the suffragettes, women attained the right to vote in 1919/20 (US) and 1928 (Britain); as we know, it took a little longer in Switzerland (1990, in the canton of Appenzell Innerrhoden).

Bulletin editorial staff

# The Last Great Adventure!

There is no limit to the competition for ever more extreme and ludicrous records. Common sense falls by the wayside.

By

*James Hamilton-Paterson*

IF WE TAKE THE WORD “ADVENTURE” IN ITS ORIGINAL sense of an unusual event or happening, then most of us have had one, even if it merely refers to one’s first, tremulous kiss. But in past centuries the word was increasingly associated with exploration and travels to parts of the planet then unknown (unknown, that is, to Europeans: they were usually well known to their indigenous inhabitants). The luckier of these travelers returned with stories of marvels, of streets paved with gold or natives covered from head to foot in fish scales.

From the Age of Enlightenment onwards, science and the scientific method increased in importance. Expeditions like those of Alexander von Humboldt and Charles Darwin were travels undertaken on behalf of knowledge: to discover, describe and bring back specimens of exotic plants and animals. In terms of the extraordinary risks and hardships involved, such travels were adventures in themselves. But science, not “adventure,” was always the primary goal. As an English child born during World War II, I grew up with my father’s boyhood collection of adventure stories. These were mostly based on travelers’ tales during the reigns of Queen Victoria and King Edward VII when Britain still disposed of a vast empire. Lion hunts in Africa, tiger hunts in India, man-eating crocodiles, deadly snakes and crafty witch doctors abounded.

Since then, the technological advances accelerated by two world wars have changed everything. First aircraft and then satellites have mapped the world’s dry land to the nearest meter, while radio and finally smartphones have provided instant communication. These have dealt a death blow to the profession of the lone explorer in my own lifetime. When I first went to Brazil in the 1960s there were still blanks on the map of the Amazon region. They are no longer there.

Of course, returning travelers can still entertain family and friends with tales and photographs of their adventures. Yet today, like so much else, the category of “adventure” has been ruthlessly commercialized. In the last 20 years the boundary between it and extreme sports has blurred, further contaminated by that cliché of American business-speak, “a challenge.” The result is the celebrity adventurer, complete with advance publicity, deals with TV companies and publishers, and film clips posted on YouTube. At most, a withered fig leaf of scientific or charitable intent covers the nakedness of the ego trip.

### Feats of Daring

A perfect example of this is currently underway: the first-ever crossing of Antarctica during that continent’s winter. The expedition is being led by the man whom the Guinness Book of Records describes as “the world’s greatest living explorer,” as though this were still a recognized, everyday profession. He is Sir Ranulph Fiennes, a veteran of many self-imposed exertions. These include trudging across both poles and in 2009 climbing Mount Everest at the age of 65. He had already climbed the north face of the Eiger in central Switzerland. In 2003 he ran seven marathons on seven continents in seven days. Previously he had made the first open-boat voyage through the Northwest Passage from west to east; had navigated the White Nile in a hovercraft; had suffered frostbite on his left hand during a failed attempt to walk to the North Pole and afterwards cut off his own necrotic fingertips with a fretsaw.

He had been planning to decamp again, this time for his “last great adventure,” as he artlessly describes the expedition. But he suffered such bad frostbite while preparing for the expedition that participating was no longer an option. “I am disappointed,” he announced, “but I am now focusing on supporting the team from afar.” The group began their hike through Antarctica in March, assuming nothing got in the way. They could be gone for as long as a year. They are using ground-penetrating radar to reveal crevasses beneath the snow and will be accompanied by two tractors powered by aviation fuel (because diesel turns to the consistency of glue well before the expected temperatures of -70 degrees Celsius and below are reached). These are hauling two large containers carrying the expedition’s stores and doubling as living quarters. The team will be beyond help if anything goes wrong. The “last great adventure” could well turn out to be just that if things go badly for the party.

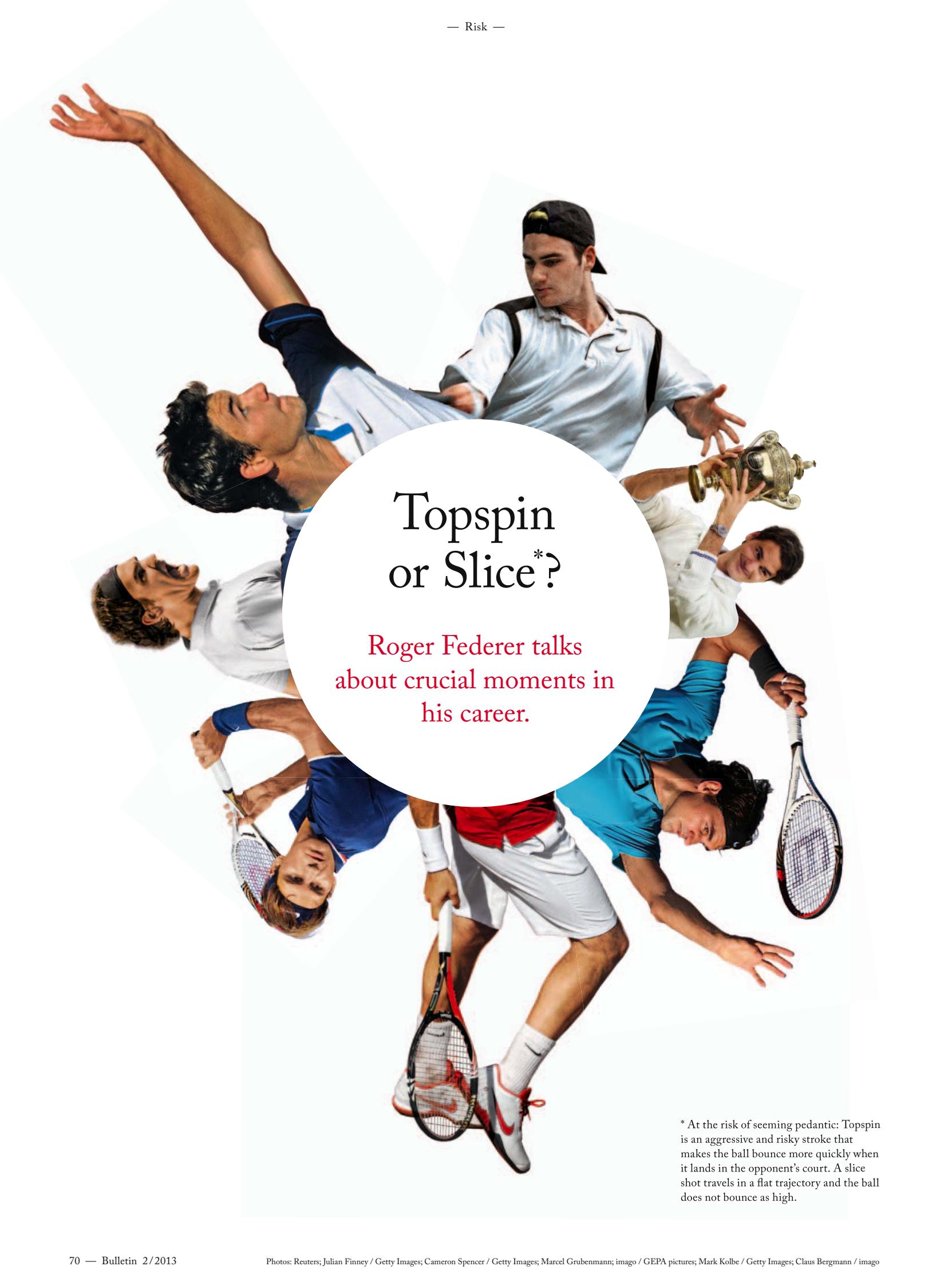
### Apparent Benefactors, Actual Egoists

So why is he doing it? Certainly not for science. The reason he gives seems hardly less cogent than George Mallory’s famous alleged reason for climbing Mount Everest: “Because it’s there.” “If I don’t do it,” Sir Ranulph has said, “the Norwegians will.” The face-saver for what otherwise seems to be an act of supreme egotism is, of course, charity – that sacred trope that is itself ripe for closer scrutiny. In Sir Ranulph’s case the expedition’s official beneficiary is a blindness charity: Seeing is Believing. The meaning of the original Latin word *caritas* has migrated from “high price, esteem or affection,” through almsgiving, to fund-raising with moral menaces.

It is true that Sir Ranulph, like many before him and including myself, is a writer; and generally speaking written accounts of adventures in books manage to retain something of the personal and even of the private. But when private exploits are accompanied by blaring publicity, TV hook-ups via satellite and all manner of sponsorship deals, they become something else entirely. I wish the expedition team the best of luck, but I personally would die rather than face those cameras.

I’m afraid we can all look forward to a future in which attempts are made to become the first grandmother to climb Mount Everest in the nude, and heavily-sponsored quadriplegics race each other across the Pacific on pedalos. Meanwhile, as thoughtful people have always known, the real adventure takes place as much in the head as elsewhere, from that first kiss to the last. □

**James Hamilton-Paterson**, born in London in 1941, is an English writer and poet. He lives in Austria. His latest book, “Under the Radar,” will be published in May by Faber and Faber.



# Topspin or Slice\*?

Roger Federer talks  
about crucial moments in  
his career.

\* At the risk of seeming pedantic: Topspin is an aggressive and risky stroke that makes the ball bounce more quickly when it lands in the opponent's court. A slice shot travels in a flat trajectory and the ball does not bounce as high.

### What Career Should I Choose?

I was very young – only 14 years old – when I was faced with the question of my future career. I had to decide whether or not to go to Switzerland’s national tennis center at Ecublens to focus on preparing for a professional career. It was not a risky decision, but it was a difficult one. It meant more than just changing schools; I’d have to leave my home and friends to live with a family in Ecublens that spoke only French. But if tennis hadn’t worked out, I could always have returned home. That’s why it wasn’t really a risky decision. I had a safety net.

### A Magic Stroke

When you play tennis, you’re constantly having to make decisions. Topspin or slice? Down the line or crosscourt? Baseline or net? And sometimes you have to take a risk. I’ll never forget an epic match against Nadal in the 2008 Wimbledon finals. In the fourth set it was match point for Nadal, and he was attacking my backhand. Although I was behind in the game and standing two meters behind the line, I was able to hit a backhand shot down the line that turned the game around. I still lost, but it’s hard to imagine a more exciting match, and it made history.

### Battling Nerves

One day, at the beginning of my career, I asked myself why I’d always get so nervous when things weren’t going well in the backcourt. I needed more confidence in my baseline game. I decided to make a conscious effort to stay calm. I wouldn’t let myself get rattled, and instead of moving forward I’d keep playing from the baseline. That was a big change in my approach, and it definitely helped me improve. The first time it showed results was probably at the 2003 Masters in Houston, when I beat Roddick and Agassi in the semifinals and finals.

### A Difficult Decision

In 2003, I had my best season on the tour up to that point – with victories at Wimbledon and the Masters in Houston – but when it was over I decided to part ways

with my coach, Peter Lundgren. It was a decision that surprised a lot of people. I had long had the sense that it wasn’t working out with the two of us. He wasn’t giving me anything new to improve my game. Although my success seemed to indicate that I was on the right track, I wanted to see even more improvement. That meant making a change. Looking back, that tough decision marked a big step forward in my career. During that time I developed from a boy into a man who could take responsibility for himself. Taking over a year to find a new coach wasn’t part of my plan, but I learned a great deal in that year.

### Fatherhood and Tennis

When you’ve been in a relationship for a long time, it’s only natural to begin thinking about starting a family. And that’s how it was for my wife, Mirka, and me. But I didn’t know – and I don’t know even today – how long I would still be able or would want to play tennis. It soon became clear to us that we’d eventually be taking our children with us on the World Tour. It wasn’t easy to find the right time to have a child. Since we knew that it would be very difficult during the 2008 Olympics, we had to wait for a while. Then things went surprisingly quickly. While Mirka was pregnant I experienced some of the greatest successes of my career: I had my first victory at the French Open, and then I won at Wimbledon for the sixth time, which also meant setting a new record of 15 Grand Slam titles. Not long afterward our twins were born, on July 23, 2009. What a year!

### Dangerous Fans?

I’ve been on the Pro Tour for nearly 15 years and travel a lot, but I’ve never been in a situation that was truly dangerous. That holds true for my contact with fans, too. Sometimes they can get very excited and agitated, but so far they’ve never been a threat. I don’t take any particular precautions. I like to drive whenever I can, even in countries like England and Australia where they drive on the left side of the road. So far I’ve always been lucky, and – knock on wood – let’s hope that doesn’t change.

### Illness

Although it doesn’t happen often, mono-nucleosis has prevented some tennis players from returning to the Pro Tour. So it was an illness that made me somewhat anxious. It all began with bouts of nausea, and I’d find myself feeling exhausted and weak. But I kept on playing for a while longer, until I simply couldn’t. Not long afterward I got the diagnosis. After that I began to recover quite quickly and was soon able to return to the tour, but it affected my game for about a year.

### No Longer No. 1

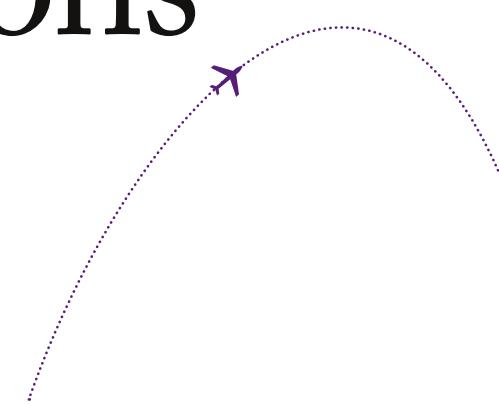
When things weren’t going so well for me two years ago, while Nadal, Djokovic and Murray were getting better and better, the press wasted no time in writing me off. I couldn’t let it get me down; I had to focus on my goals. I stopped reading articles about myself. When I made it back up to the top, it wasn’t with a feeling that I had “proved something” to my critics. I wasn’t motivated by a desire to show everyone that I could do it. I did it for myself, my family, my team and the fans who believe in me. And for them, I want to continue playing tennis at the highest levels for as long as possible. □

Recorded by Daniel Huber



Bowei Gai, 28, during a brief layover in San Francisco.

# 29 Destinations 36 Cities 1 Mission.



Every beginning involves risk – Bowei Gai knows that very well. With a number of Silicon Valley startups under his belt, he is touring the world to discover the stories of other startup communities.

By Steffan Heuer (text) and Douglas Adesko (photo)

**B**owei Gai tosses a handful of business cards on the table. “Fresh from the printer. Pretty cool, don’t you think?” His business card only has his name and a single word below it: Founder. That’s what young entrepreneurs call themselves nowadays. The card does not even include a telephone number. But on the back is a photo of Gai, 28, with his arms outspread,

the skyline of Sydney behind him and his laptop at his feet. The snapshot was taken just last week, while Gai was traveling in Australia to find out everything he could about the startup scene in the land down under.

The picture tells what this young man is all about, better than any number of words: drive, optimism, boundless curiosity. With his latest venture, the serial

entrepreneur from San Francisco has become an overnight authority on the startup culture and its successes. The project: to research, write and post a World Startup Report online. By September, he plans to visit 36 cities in 29 countries, meeting with 100 to 150 members of startup communities and listening to their stories at event after event. Who is founding what? Who provides the venture capital? >

What bureaucratic and cultural obstacles do the entrepreneurs face?

"I want to do a lot more traveling before I commit to starting another company myself and investing five years of my life, hopefully to build a billion dollar enterprise," Gai says during a brief stop in San Francisco before heading to South America. "But I'm not interested in traveling just for the sake of travel. The idea is to meet other startup founders and share what I learn along the way. When you do good things, somehow good things come back to you," he says. "That's the karma principle of Silicon Valley."

### No Money and Bad Grades

Gai considers his mission – to "document and connect the world startup community" – as unexpected as the fact that the companies he launched brought in enough money to fund the year-long adventure. The son of Chinese immigrants, he came to the US when he was seven years old. "Back in China, I was the shyest kid you could ever imagine. I did my best to be invisible, and I would never speak to a stranger. That mindset doesn't get you very far in the US. Somewhere between high school and college, I decided to open my mouth." Gai recalls, "It was a dramatic change."

He compares his transformation to a computer whose preinstalled operating system has been enhanced with a variety of software add-ons. "Trips you take,

people you meet, books you read – it all changes your view of things." In particular, he credits his college years at Carnegie Mellon University in Pittsburgh, where he remembers spending long nights in the dormitory concocting business ideas. "Mostly we had a lot of ambition, but not the faintest idea of how to write good software or build a startup. But you learn something every time."

Above all, Gai gained the self-confidence to approach the biggest names in Silicon Valley and ask for a job. Though fresh from a master's program in computer science, "I had really bad grades. Companies like Apple or HP wouldn't even look at my application." So he spoke with one manager after another who had attended the same university he did. "I didn't bring much to the table; my family has no money, no connections and I had no experience at all."

His persistence paid off. After an internship in the New Business Creation department at computer giant HP, Gai was hired at Apple. "Once I got there, they told me, 'We actually lied to you. You're not going to work on the MacMini, but on a new secret project called Apple TV.' And later I was part of the team that developed the iPhone. Talk about beginner's luck – it doesn't get any better than that."

Gai also has his own formula about luck. The odds for everyone are about 1 percent, he calculates, so you only have to try 100 times to score a hit. "Unfortunately, most people give up before that." From the springboard of Silicon Valley, he catapulted himself into the startup scene. Snapture Labs, his first company, developed a prize-winning camera application for the iPhone. His second hit was CardMunch, an app that digitizes business cards with just a quick photo on your smartphone, saving them as contacts in your address book. The idea attracted LinkedIn, the world's largest professional network, which bought Gai's company and hired him in January 2011.

His next idea had nothing to do with multiplying his assets. With plans to go back to China for a month, Gai wanted to make his stay as productive as possible, so

### • India



**"The startup scene is young and irrepressible. They have to do a lot of inventing from scratch, because the infrastructure is so poor, from electricity and the Internet to simple logistics."**

he asked other entrepreneurs in his virtual network for local contacts. Within days, he had hundreds of responses from people who set up appointments with journalists, entrepreneurs, venture capitalists and business angels. "I'm not a reporter, and I'm not a good writer. I simply bought myself a ticket to China and wanted to make the most of it," says Gai, marveling at the origins of his China Startup Report.

Back in California, he uploaded the report to the web late one night as a way of thanking everyone who had helped him. When he woke up the next morning, he found that the tech scene from San Francisco to Shanghai had discovered his 26-slide presentation. Even in China, it spread like wildfire. "Probably because I toured the country from the viewpoint of an outsider from Silicon Valley and was brutally honest."

So far, Gai's report about the boom in China has been viewed more than 100,000 times at slideshare.net. Introducing readers in entertaining fashion to the success stories of Internet giants such as Tencent, Baidu and Taobao, all largely unknown in the West, he evidently struck a nerve. "These are companies that think

Bowei Gai on the startup culture in some of the countries he has visited:

### • Lithuania

**"Since the country regained its independence in the 1990s, there's an incredible spirit of optimism. A record three hundred people attended our startup weekend."**

and act like startups but do business in the tens of billions. Taobao alone is responsible for 2 percent of China's GDP. Even I was astonished by what's happening in China," says Gai. He sums up the startup scene there succinctly: "Ambitious. Incredibly ambitious."

#### • What Founders Really Want to Know

That proved to be the launching pad for future research trips. Entrepreneurs from all over the world sent messages urging him to check out other countries, from India to Brazil. The young go-getter lasted barely a year at LinkedIn before deciding in November 2012 to take a creative sabbatical for the World Startup Report. "Financially, it was a great move, because when they took over CardMunch, LinkedIn shares were worth 19 dollars," recalls Gai, who was paid largely in stock. In March 2013, the shares were listed at 180 dollars. "But at the end of the day it's only assets on paper. What's really valuable is the attention and the credibility you gain. All of a sudden, people start really listening to what you say."

#### • Australia



**"A rich, beautiful, highly developed country that so far gives its startups too little support. When people can earn a lot of money in traditional jobs, entrepreneurs tend to go abroad instead of taking risks at home. That may be true in Switzerland as well, though I haven't been there yet."**

## US • (Silicon Valley)

**"Still the best place in the world to turn a new idea into a business success in a hurry. The people who do that take off, and they pull in good people. That's not going to change in the next 10 or 20 years."**

And so Gai once more turned to his contacts in the startup community for help planning his travels. Volunteers put together the route; volunteers organized events from Colombia to Nepal. The first stops were eye-openers to him, revealing how much he didn't know. "Silicon Valley is still the best place in the world to turn a new idea into a business success in a hurry. The people who do that take off, and they pull in good people. That's not going to change in the next 10 or 20 years. But there are lots of other exciting places for entrepreneurs, and they're catching up fast."

Over the year, Gai will share his insights and opinions in a series of free online reports. Each presentation will be short and to the point: "Who wants to read page after page of statistics? Not me." Gai would rather concentrate on what entrepreneurs really want to know – just as he did in the China Startup Report. He sees his scouting activity as a good complement to other projects such as the Startup Genome. That team is also tracking the startup phenomenon, but it relies more on formulas and databases. "What I want is simply to light a fire under as many people as possible. Motivate them to upload a better description of the startup scene in their country. All of us, every founder in every country, can gain from that," says Gai with modesty. "Every day, I have the urge to start another com-

pany, this time a really big one. But first I need to learn more about entrepreneurs all over the world – how they think and how they work." □

## China



**"Entrepreneurs come from nowhere and build huge companies overnight, companies that we in the West know nothing or far too little about."**

**Steffan Heuer**, a journalist and author living in San Francisco, is a longtime observer of the startup scene in Silicon Valley. His reports and analyses appear in the German business monthly brand eins, in The Economist's Tech Quarterly, and in Technology Review Deutschland, the German version of the MIT Tech Review.

# R = P x S

Risk (R) is calculated based on the probability (P) of the expected loss (S) – this is a classic and concise formula. Here we present a similarly concise collection of facts: lots of numbers instead of words.

## Traffic

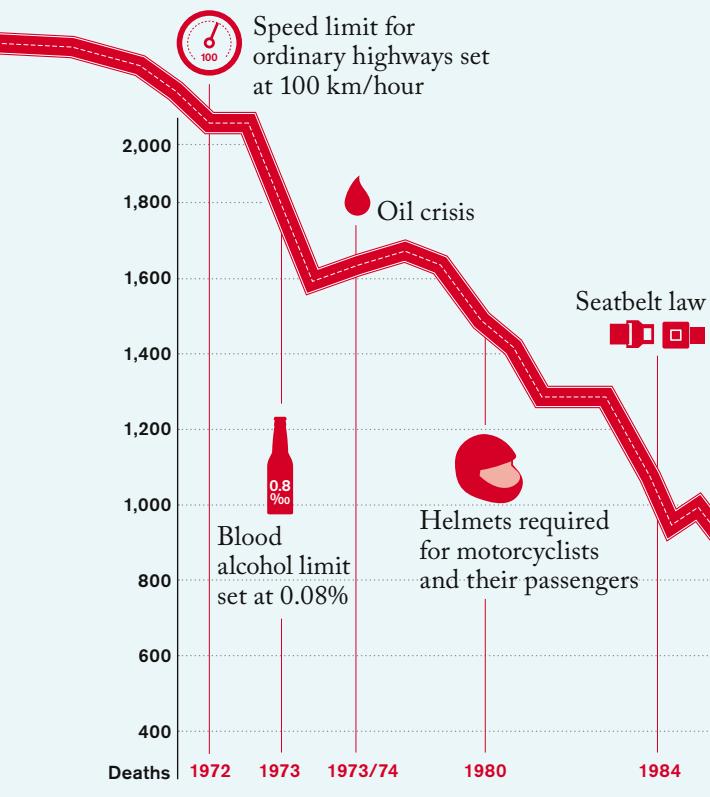
### A Clever Invention

In 1920, Arthur Hughes Parrot and Harold Round were issued US Patent **1,331,359** for the air cushions they invented to protect passengers on aircrafts. These cushions were the forerunners of the airbags we have in our cars today.



### Less Is More

Why are our streets safer?  
*Trends in the number of traffic deaths in Germany.*



### A Dangerous Place

**1, 2, 3, 4, 5, , 7, 8, 9, 10, 11, ...**

Every six seconds someone, somewhere in the world, dies or is injured in traffic. That adds up to 1.2 million deaths and 50 million injuries every year.

### Danger Is a Good Thing



Dutch road traffic engineer **Hans Monderman** (1945–2008) believed that to make streets safer, you had to make them more dangerous. He championed the concept of “shared space” with equal rights for pedestrians, motorists and cyclists, and removed traffic lights and signs.

### They Are Out!



The European Union has banned **290 airlines** from operating in its territory, including all carriers from 20 countries including Afghanistan, Kyrgyzstan and Sudan.

### Part II



Half of all accidents involving pedestrians occur after reaching the second half of the street – in other words, as the pedestrian is leaving a traffic island or, when there is no island, after crossing one lane of traffic.

## Love

### Wedding Capital

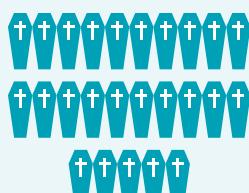
Number of weddings in Las Vegas, 1909–2012.



### Love Can Be Dangerous



**34 million**  
people worldwide  
are infected  
with the HIV virus.



**25 million**  
people have died  
of AIDS.



**7 million**  
people with HIV  
have no access  
to the antiretroviral  
drugs needed  
to keep the disease  
in check.

### Diamonds Are Forever



In 2012, the Swiss jeweler Shawish unveiled the first ring entirely made of a single diamond. Its estimated price exceeds 60 million Swiss francs. Its insured value is unknown.

### Lopsided Emotions

Russia



Women



Men

Japan



Women



Men

Percentage of people who say that they are in love.

### Where They Fell in Love

**+45° 26' 31.09"**  
**+10° 59' 54.05"**

This is where the most famous star-crossed lovers in world literature are believed to have lived, the geographic coordinates of the house at Via Cappello 27 in Verona where Juliet Capulet (supposedly) lived with her family. Romeo Montague's family is said to have lived a scant 300 meters away.

### Good News for Greetings



You are much less likely to spread a cold virus by kissing than by shaking hands.

### Marry Me! (On Second Thought...)

At New York's Yankee Stadium, at least **1** person proposes marriage during every baseball game. At least **5** times a year, the proposal is quickly withdrawn, at the same location.

### The Bill Comes Due



**1.7 billion**  
US dollars

When media mogul Rupert Murdoch separated from his wife, Anna, part of his fortune went with her. It is believed to have been the most expensive divorce in history.

## Internet

### Searches With Unintended Consequences

"Bearshare"



46%

"Screensaver"



42%

"Digital Music"



19%

"Porn"



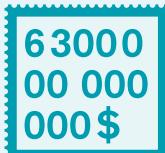
9%

Percentage of dangerous links (malware) that appear when you enter these search terms. More and more risky links show up every day.



The phrase "No risk no fun" is found in many different contexts; a Google search produces nearly 1 million hits. The web address norisk-nofun.ch takes you to a playground construction company. But the address norisknofun.net is still available for purchase.

### You've Got Mail



6.3 trillion dollars is the amount that would be spent on stamps in the US if people sent as many letters as they send e-mails.

### A Fatal Tweet



A few words and that was all it took. American student Connor Riley (@theconnor) tweeted:

"Cisco just offered me a job! Now I have to weigh the utility of a fatty paycheck against the daily commute to San José and hating the work." No sooner had she sent out the tweet than Cisco took back its job offer.

### Social or Antisocial?

What is the greatest danger of social media? A survey of 141 companies in the US and Europe.

**Confidential information is disclosed to outsiders**

**Negative comments about the company**

**Personal data becomes public**

**Fraud**

**Outdated information**

I Win!

Chance  
104,000,000



Risk  
90,900,000

The term that has the most hits on the Internet according to googlefight.com.

### Too Much of a Bad Thing



A can of Spam Classic, the canned meat that was introduced to the market in 1937, contains

**1,080**  
calories

Its brand name is a shortened version of "spiced pork and ham." Because British comedy group Monty Python mentioned spam over 120 times in one of their sketches, the word later came to be used to refer to unsolicited bulk e-mail.

**50 billion**  
US dollars

This is the estimated economic damage caused annually by spam worldwide.

### Warning to Parents



One-third of the risks to children come from video portals, followed by websites, social networks and games.

## Culture

### War Games



The strategy game "Risk," invented in 1957 by French film director Albert Lamorisse, is one of the world's best-known board games. The computer version is all about battle, too.

### Can You Hear Me Now?



Number of decibels orchestra musicians are exposed to.

Trombone 95



Clarinet 92



Horn 92



Tuba 92



Flute, piccolo 91



Percussion 91



Violin 89



Viola 89



Harp 89



Bassoon 89



Cello 87



Oboe 86



Double bass 85



Conductor 83



Road traffic 80



Disco 110

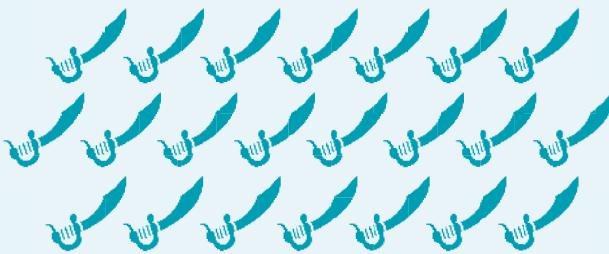


### Money Lisa



Leonardo Da Vinci's "Mona Lisa" is believed to be the world's most heavily insured work of art. In 1962, when it was shipped from the Louvre in Paris to Washington, DC, it was insured for 100 million dollars.

### Pretty Sharp!



On February 13, 2011, in Mumbai, India, Kishan Valaiah Ayula broke the world record by swallowing

**22 swords**

Compiled by the Bulletin editorial staff. Sources: WHO, Europa.eu; mz-web.de; Swiss Pedestrian Association/Traffic Department, City of Zurich; Save the Children; care2.com; gesundheit.com; Clark County, Nevada; World Health Organization (WHO); Shawish; thisismoney.co.uk; Wikipedia; ijustmadelove.com; McAfee; Grant Thornton; googlefight.com; Huffington Post; Kaspersky Lab; Antispameurope; Federal Office for Information Security (Germany); me-magazine.info; EU Kids Online; Guinness World Records; University of California, San Francisco; Moneycab; Suva.

### Smoke Signals

In the 134 most popular films in the United States in 2011, nearly

**1,900**

scenes showed smoking or included a reference to tobacco.

### Not so Clever

Tommaso Ramundo received a suspended sentence of

**4 1/2**  
months

in prison after cheating on the Swiss TV quiz show "Risiko" on January 5, 1998. Clever: He got hold of the answers in advance.

Not so clever:  
He mixed them up on the show and was found out.

### World Music

**"Kunscht isch il gäng it risk"**

A translation of "Kunscht isch gäng es Risiko" from the song "Eskimo" by the Bernese singer and songwriter Mani Matter into English through the automatic online translation service Babelfish.

# Life Is a Balancing Act



Jörn Kaspahl is a Hamburg-based illustrator. His work has appeared in publications such as The New Yorker, Monocle, GQ, Wired and Der Spiegel.

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CARRERA  
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HYBRID  
WARRANTY

[toyota-hybrid.ch](http://toyota-hybrid.ch)

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Auris Hybrid Luna 1,8 VVT-i Hybrid Synergy Drive®, 100 kW (136 HP), 5-door, average fuel consumption 3,8 l/100 km, average CO<sub>2</sub>-emissions 87 g/km, energy efficiency classification A. Average CO<sub>2</sub>-emissions of all car models registered in Switzerland: 153 g/km. Vehicle shown: Auris Hybrid Sol 1,8 VVT-i Hybrid Synergy Drive®, 100 kW (136 HP), 5-door.