

bulletin



The Credit Suisse Magazine since 1895 Issue 1 March/April 2010
International Edition

Neighbors

Where the US-Canadian Border Runs as a Black Line Right Through a Theater and Other Stories Of Neighbors – From the Microscopically Small to The Unimaginably Distant

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Many moons ago, my old schoolfellow Reto moved from a quiet village in eastern Switzerland to the bright lights of Zurich. He was lucky enough to find lodgings in a simple loft apartment right in the city center. The Saturday after moving in, he decided to introduce himself to his neighbors. But not until he had reached the third of the five floors did he have any luck. When the door of an apartment finally opened, it was by a man who eyed Reto with distinct suspicion. What did the young man want? – To introduce himself? – A new neighbor? The man's distrustful mien finally gave way to a roar of laughter. Chuckling, he muttered something about such an extraordinary thing not having happened to him in ages – and promptly slammed the door shut with no further ado. It was a bracing introduction to the anonymity of the big city for Reto. Over the next few years he would occasionally pass other distrustful faces as he walked up and down that stairwell. But he never had any name to put to any face.

Japan provides us with an example of just where this can lead. Every year, around 30,000 people die in complete isolation in the Land of the Rising Sun. What's more, the body then often lies unnoticed in the apartment for days or even weeks. This unofficial figure was calculated by Takumi Nakazawa, bulletin correspondent Susanne Steffen traveled to a Tokyo suburb to visit this sprightly pensioner, who has set up an organization to combat the harrowing problem of lonely life and death in the anonymity of the big city. Together with a team of more than 100 volunteers, Nakazawa runs a contact and emergency call center for potential victims and their relatives. He has also started up a neighborhood café where local people can forge neighborly contacts.

There are of course people who consciously seek out and value the anonymity of a big city – people who find contact with neighbors both onerous and suffocating. Of course, everyone has the right to their private space. But when people live together at very close quarters, there are a number of points of human crossover that need to be treated with a degree of mutual respect and tolerance. And it is important that tolerance not give way to total ignorance.

In this issue of bulletin we do not restrict ourselves solely to the intrapersonal aspect of neighborhood. We invite the reader to explore neighborly relations in the most diverse of dimensions. These include the microscopically small world of our closest neighbors, namely the bacteria that colonize the human body in their trillions, the lonely life and death of the elderly in Tokyo, the historic neighborhood communities of Graubünden (Grisons), a canton in south-eastern Switzerland, and the occasionally difficult coexistence of Canada and the US. We also embark on an imaginary voyage into outer space on a hunt for our galactic neighbors. At any rate, we hope to provide you with enough thought-provoking material for that next chat – with your neighbor, of course.

Daniel Huber, bulletin Editor-in-Chief



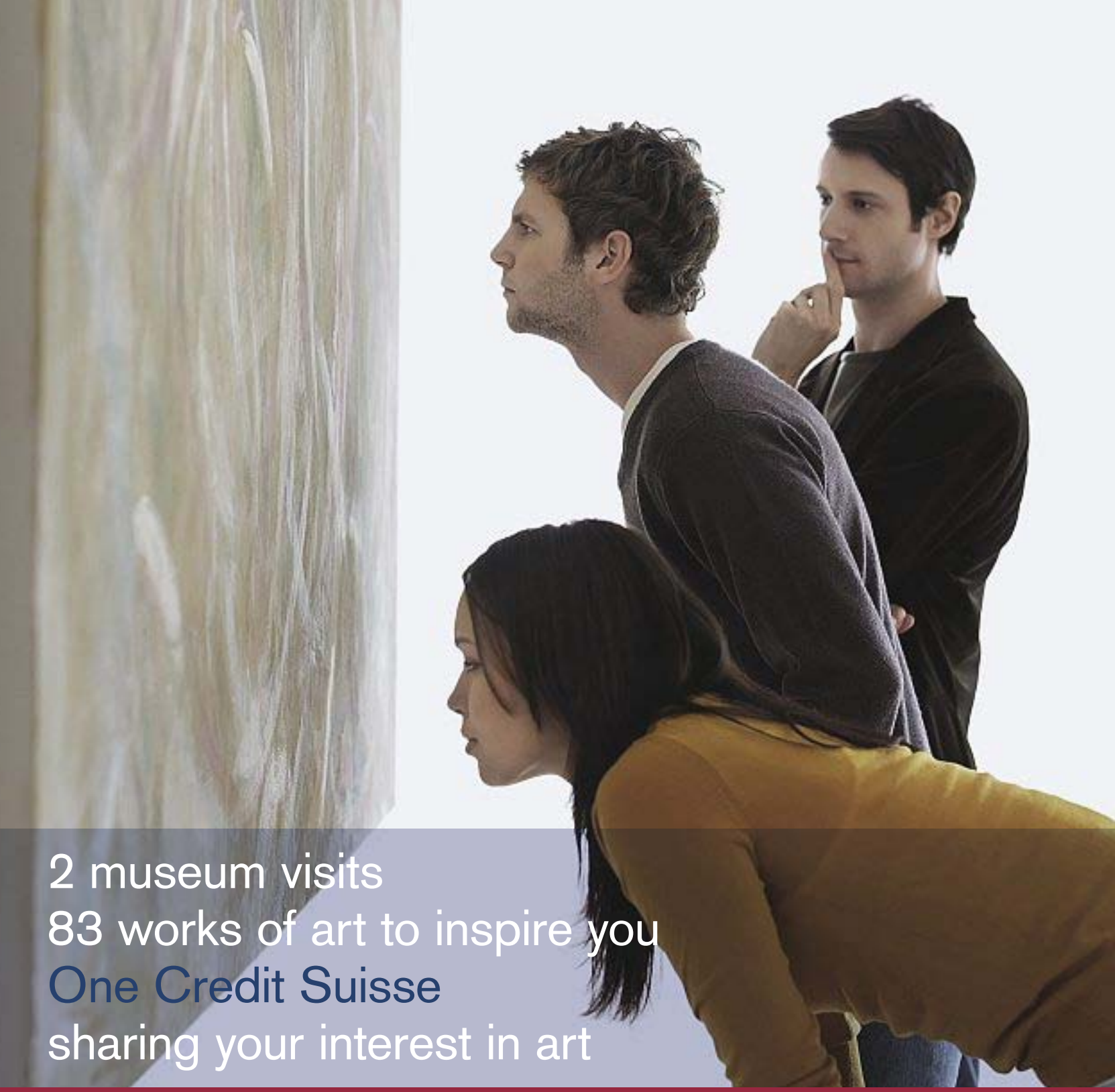
Gold Winner



Gold Winner



Award Recipient



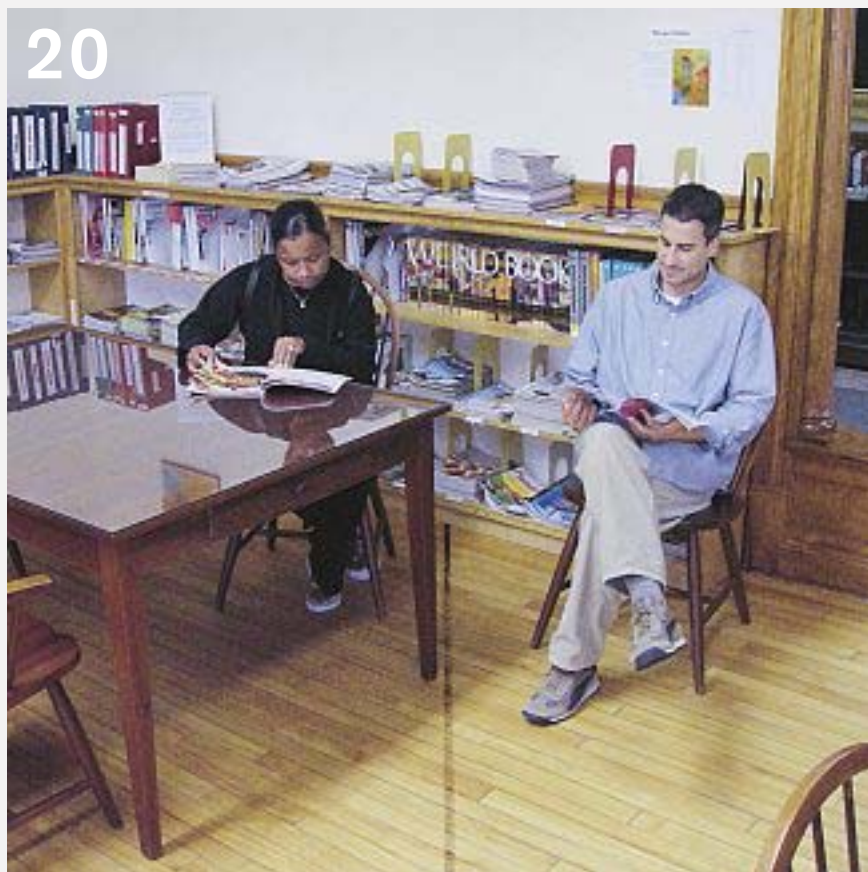
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Cover photo: Steffen Thalemann | Photo: Gerd Braune

Neighbors In the Haskell Free Library in Stanstead, the US and Canada can be said to sit at the same table. The black line on the floor of the reading room marks the border. The cover picture shows the theater on the first floor with librarian Nancy Rumery.

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Our Friendly Residents

No one can escape their closest neighbors of all: Some 500 trillion bacteria live on and in the human body. We should look after them.

Text: Mathias Plüss

One might think that man has shone the brightest of spotlights inside himself. The human genome has been decrypted, the brain scanned a thousand times over. We have dissected the pineal gland and shed light on our subconscious drives. No digestive enzyme, no capillary vessel and no auditory ossicle has escaped our notice.

And yet the last few years have revealed an important sphere of the human body that has so far remained almost wholly unknown to us: the life of microorganisms that goes on both inside and upon us. It would be a mistake to dismiss this aspect as a triviality – each fully grown human carries almost 2 kilograms of bacteria around with them, or more than the weight of their cerebral matter. Nor are we in any way dealing with “pests”: The majority of the microbes that live in and around us are useful creatures, known by their technical name as “commensal organisms” or simply commensals. They live off us, but without causing us any harm in the process.

Project to Map Our Bacterial Life

According to the latest estimates, every human being is host to around 500 trillion bacteria. This being a hundred times the number of cells in the body, or around a hundred and forty times the US government budget in dollars. At the same time, however, most bacteria are a hundred times smaller than human cells, and impossible to grow in a laboratory – which is precisely why we know so little about them. It was only as recently as 2007 that the Human Microbiome Project was launched, which – similar to the Human Genome Project – is seeking to map and decipher the entire bacterial life of the human organism. To achieve this aim, the project is relying on a new method. Scientists formerly had to first apply a sample of a part of the body to a nutritional culture to see what would grow as a result. Now, however, the genome of all bacteria contained in the sample can be directly investigated by machine. This is a quicker and more comprehensive approach, even if at the end there is sometimes confusion as to which gene belongs to which bacterium.

Accordingly, the initial results are still rather vague and provisional. It is estimated that the human body is colonized by several hundred or perhaps even several thousand different types of bacteria. A continual process of interaction takes place between these different types, as well as between the bacteria and the human body they

inhabit. Many researchers believe that man should not be viewed as an individual organism but as a genuine ecosystem – indeed, this theory further posits that there is actually an entire network of ecosystems blooming inside and upon us, each of which we are inextricably linked with. Why? Because the composition of “microflora” differs in every part of the human body. They also vary over time, and above all from person to person. Even today, no one knows whether there is a basic strain of bacterium types common to all mankind. “Our microbe communities,” opines American biologist Robert L. Dorit, “are substantially more multifaceted, more complex, more structured and more fascinating than was ever believed possible.”

As a rule, only five areas of the human body are sterile: the brain, the lungs, the abdominal cavity, the bladder and the blood. Everywhere else we are teeming with bacteria:

- Some 99 percent of human bacteria live in the **intestines**, which cover an impressive area of 400 square meters thanks to their invaginations and meandering courses. The greatest density of bacteria population is found in the colon, with up to a billion bacteria per gram of intestinal content. Around a third of the feces excreted from the body comprise bacteria. The whole system is one of give and take: The microbes receive free food, and in return produce valuable vitamins, help with sugar absorption and break down fibers that we would not otherwise be able to digest. In this respect, even the human appendix has a purpose: Many researchers believe it to be a kind of shelter from which the bacteria can recolonize the intestines after an attack of diarrhea, for example. At least 500 types of bacteria can settle in the intestines, though in all likelihood the number is much higher. Overweight people often have a significantly increased proportion of bacteria of the “firmicute” strain that helps to break down carbohydrates; this could be one explanation of obesity. That said, it is not clear which is the chicken and which the egg here: Are these people fat because they have more food-processing bacteria, or do they have more food-processing bacteria because they eat more?

- Around 600 types of bacteria make up the human **oral flora**. This moist area with guaranteed food supply is popular with protozoa such as mastigophorans and the amoeba *Entamoeba gingivalis*, a con-

sumer of bacteria that moves through the saliva at a maximum speed of 2.5 centimeters per hour. When oral hygiene is poor, the bacteria cluster themselves in deposits on the teeth and tongue, leading to dental cavities and halitosis. An investigation involving participants of the Pfahlbauer project organized in 2007 by the Swiss broadcaster Schweizer Fernsehen showed that the proportion of enamel-damaging bacteria decreases significantly if the individual takes no refined sugar for a period of four weeks.

■ As our **skin** covers an area of just 2 square meters, it naturally has less bacteria than the intestines – but instead has a greater variety of bacteria types. Key areas of biodiversity include the forearms, the hands, the index fingers and the backs of the knee. When it comes to sheer numbers, the moist parts of the body such as the armpits, the area between fingers and the rectal tags have the densest populations. Local and individual differences are enormous, however. A study into the forearms of six people, for example, found a total of 182 different types of bacteria, but only four of these types were common to all six individuals. “The moist and hairy armpits are not far from the smooth, dry forearms,” wrote American researcher Elizabeth A. Grice in the specialist journal *Science*, “but in environmental terms these areas differ as radically as the rainforest and the desert.” The bacteria on our skin feed on dandruff, hard fats and sweat – and their decomposition by-products are what give our bodies their individual smells. These bacteria also live in the pores of our skin, and it is from here that they recolonize the surface of the skin after we wash our hands, for example. Moreover, yeast fungi can be found on most people’s skin, while one area of our skin – our faces, no less – hosts around a thousand mites of two particular genera that reach at least a quarter millimeter in size.

■ The acidity of the **stomach** kills off almost all microorganisms, which is why it was long regarded as a sterile environment. Not until 1979 was the bacterium *Helicobacter pylori* discovered, which not only lives in the human stomach (and those of other animals) but is also widespread. This microbe is typically passed on within families, and has played its part in the whole of modern human history since the evolutionary exodus out of Africa. It is therefore helpful in reconstructing historical migration flows. Given their different origins, for example, the Buddhist and Muslim peoples of the Indian region of Ladakh have greatly differing variants of *Helicobacter pylori* in their stomachs, despite the fact that it is impossible to separate these two peoples genetically. It is only in recent years that scientists have become aware of the potential existence of many more microorganisms in the human stomach – for example, a member of the *Deinococcus* strain that was previously only believed to live in hot springs, nuclear power plant coolant and waste contaminated with arsenic was found in the stomach of a test patient.

For a long time, it was an open question as to why the body did not defend itself more vigorously against microbe colonization. When oral flora were first discovered toward the end of the 19th century, these bacilli colonies were considered a form of disease and given the name “intestinal blood poisoning.” Some doctors even recommended removing the large intestine as the best solution. It was only much later that the digestion-enhancing properties of bacteria were realized. However, it nonetheless remains true that bacteria can be dangerous. Many types of microorganism that live a benign existence in our intestines can turn into potentially lethal pathogens if they manage to break through the intestinal wall. Today, for example, it is believed that many more ailments could be caused by

bacteria and viruses than was previously believed – such as many types of cancer, multiple sclerosis, asthma, depression and even heart attacks.

But this is only half of the truth. The bacterial borderline between good and bad is continually in flux. If this is to be understood, we have to see man and all his resident microorganisms as a complex ecosystem that is in equilibrium when he is healthy. The immune system keeps our bacteria in check, the bacteria keep the immune system going, while the bacteria control one another – neither can dominate at the cost of the other to the point where the ecosystem tips over. This is why, for example, a healthy person can harbor tuberculosis bacteria within their bodies for decades without the disease ever manifesting itself.

Tolerating Dangerous Territorial Defenders

Many of our apparently useless or even potentially dangerous residents are tolerated because their presence prevents an even more dangerous counterpart from taking their place. The trick, according to biologist Richard Roberts, winner of the Nobel Prize in medicine, is for every environmental niche both in and on the body to be populated by the most innocuous germs. Because once germs are established, they defend their territory. For example, our skin flora take on the role of hygiene police and are permanently on the lookout for marauding newcomers. If we are too zealous in scrubbing away this security service, we can open ourselves up to the spread of fungi and harmful microbes, which in turn can lead to ringworm, dandruff and eczema. The use of broad-spectrum antibiotics can have a similar effect. If many niches are suddenly freed of bacteria, a previously unproblematic germ may become excessively widespread and thus dangerous. Experts warn us as a general rule not to interfere in our body’s own ecosystems other than in an emergency, until we have understood at least the rudiments of how they work. >



A scanning electron microscopic image of *Helicobacter pylori*. This helical-shaped gram-negative bacterium causes peptic ulcers, gastritis and duodenitis.

Figure 1

The Seething Mass of Life in Our Intestines

The microorganisms in our gastrointestinal tract produce vitamins, strengthen the immune system and prevent pathogens from establishing themselves. Detailed descriptions of our most important residents and their functions can be found at www.credit-suisse.ch/bulletin.

Candida albicans

Candida albicans is a yeast fungus. It can ferment sugar and produce alcohol among other things. This fungus is therefore fond of carbohydrates.

Staphylococci

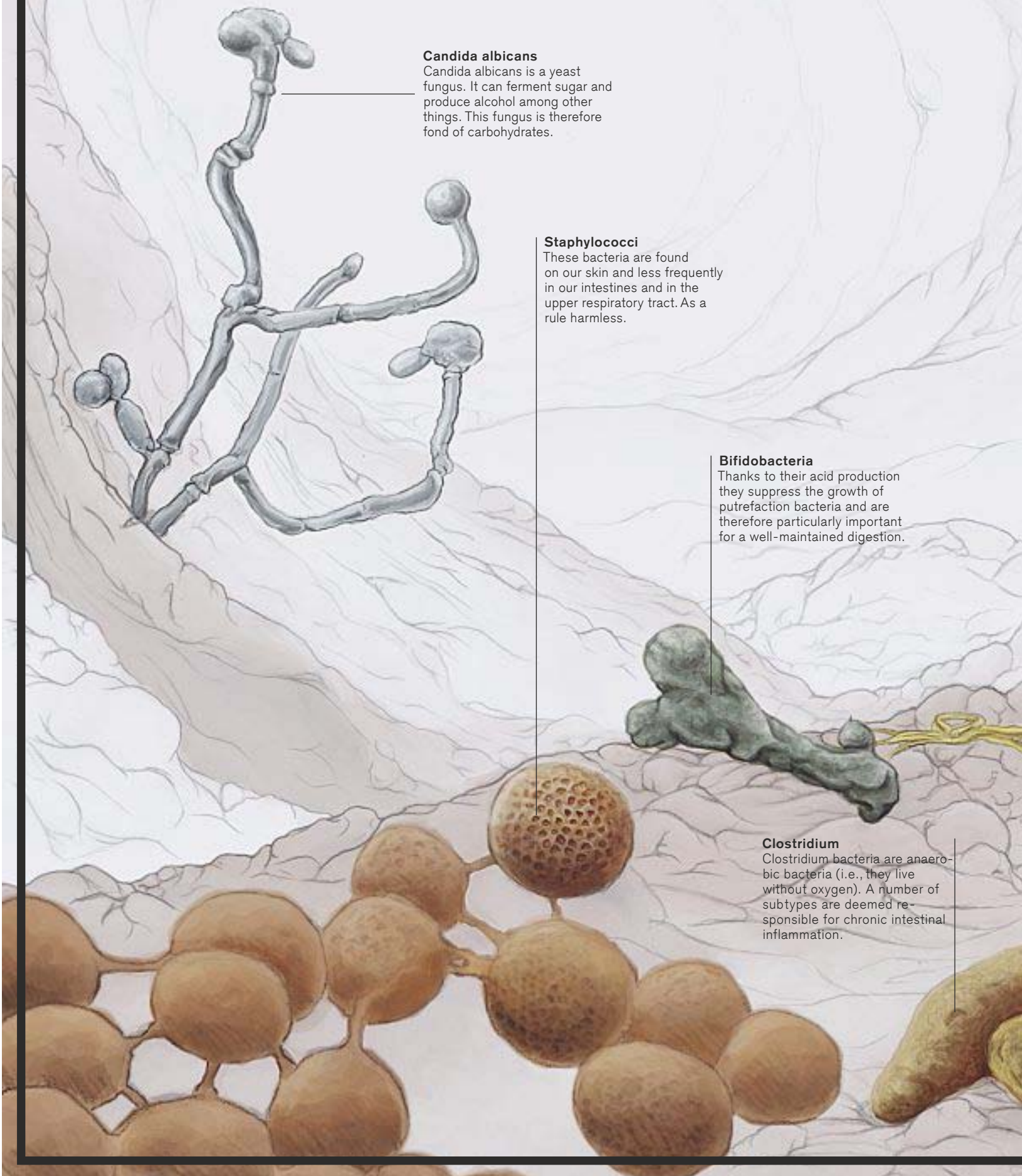
These bacteria are found on our skin and less frequently in our intestines and in the upper respiratory tract. As a rule harmless.

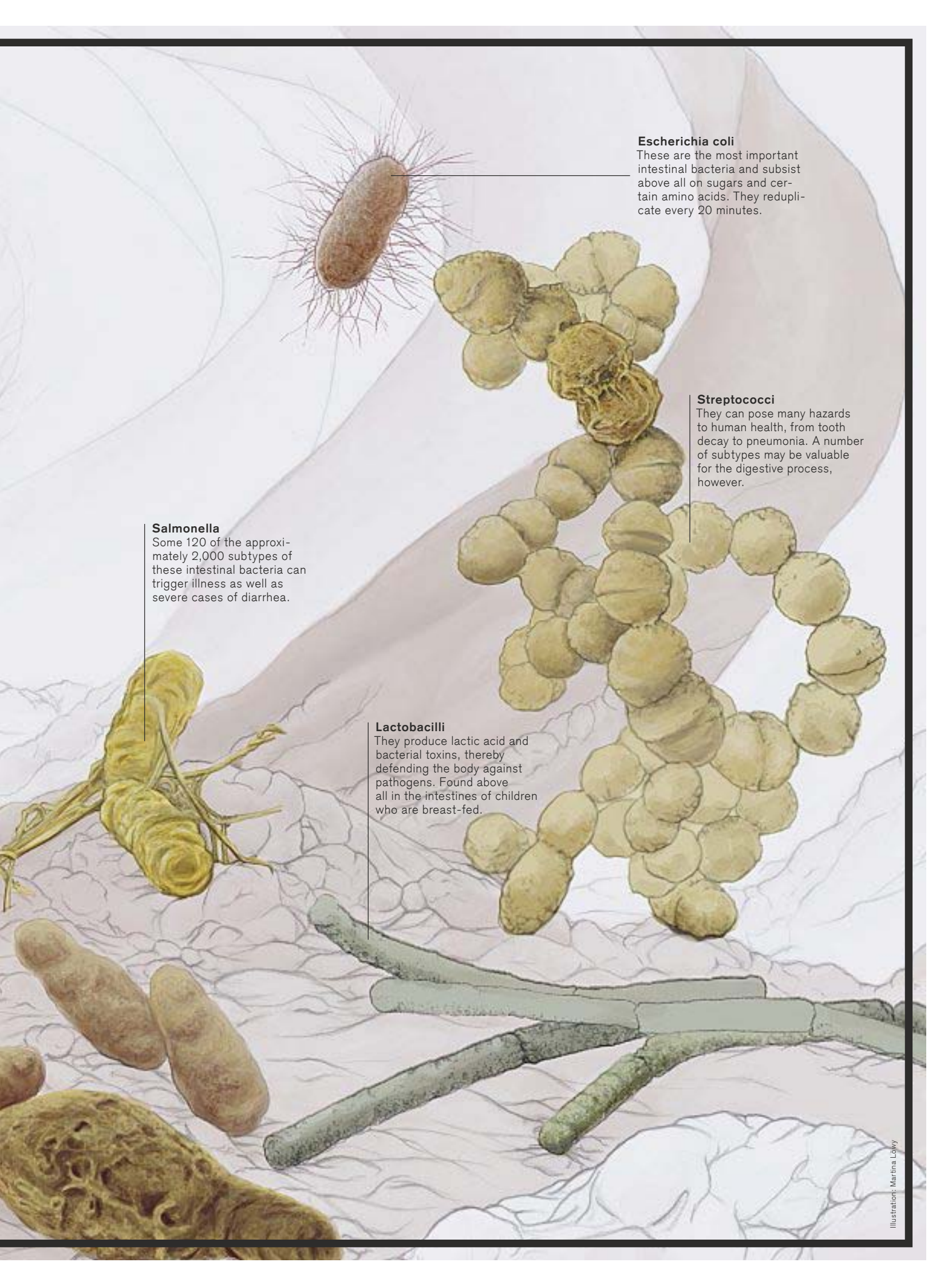
Bifidobacteria

Thanks to their acid production they suppress the growth of putrefaction bacteria and are therefore particularly important for a well-maintained digestion.

Clostridium

Clostridium bacteria are anaerobic bacteria (i.e., they live without oxygen). A number of subtypes are deemed responsible for chronic intestinal inflammation.





Escherichia coli

These are the most important intestinal bacteria and subsist above all on sugars and certain amino acids. They reduplicate every 20 minutes.

Streptococci

They can pose many hazards to human health, from tooth decay to pneumonia. A number of subtypes may be valuable for the digestive process, however.

Salmonella

Some 120 of the approximately 2,000 subtypes of these intestinal bacteria can trigger illness as well as severe cases of diarrhea.

Lactobacilli

They produce lactic acid and bacterial toxins, thereby defending the body against pathogens. Found above all in the intestines of children who are breast-fed.



Radiation-resistant bacteria. Colored scanning electron micrograph (SEM) of four *Deinococcus radiodurans* bacteria forming a tetrad. This extremophile bacteria can withstand extremes in radiation, low temperature, dehydration, vacuum and acidity. It can survive up to 3,000 times the radiation dose that would normally kill a human. It is thought that high levels of manganese help protect DNA repair proteins within the bacteria.

The earlier mentioned stomach bacterium *Helicobacter pylori* also represents a vivid example of the Janus-like nature of many microbes. Its discovery was a milestone, because scientists realized that this was the main trigger of stomach cancer (and not “stress,” which was always formerly cited as the cause). Since this knowledge entered the medical canon, antibiotics have been a potential method for counteracting this bacterium. Indeed, while stomach cancer was still the most lethal form of cancer in the US a hundred years ago, its prevalence has since declined by 80 percent. Less than 5 percent of children in the Western world are still carriers of *Helicobacter pylori* nowadays. By contrast, for thousands of years the standard rate for humanity was an occurrence of almost 100 percent, a situation that nowadays is only found in one or two developing countries.

So far, so good. However, microbiologist Martin Blaser of New York University has now established that the decline of stomach cancer has its flipside: Since the 1970s, a particularly aggressive form of esophageal cancer has begun to spread in developed countries. In the US, this type of cancer is displaying the highest rate of increase. Blaser attributes this to the disappearance of *Helicobacter pylori*, which among other traits has the effect of regulating the stomach's acidity levels. In its absence, man is increasingly prone to acid reflux and as a consequence esophageal cancer. And not only that: This natural stomach inhabitant would also be a valuable asset in the fight against asthma, hay fever and even obesity. Children with *Helicobacter pylori* have a 40 percent lower risk of suffering from asthma than those without it. Indeed, Blaser believes that this bacterium would in all probability have more positive than negative repercussions for most people. So much so that in his view it could even be administered in a targeted way to children so as to protect them from asthma. After all, it could always be eliminated at a later stage with antibiotics to ward off the danger of stomach cancer.

The immune system of children quite clearly relies on a certain quantity of bacteria to get it up and running. If the immune system is underemployed, it starts hunting down the wrong types of bacteria – hence the risk of asthma and allergies. And indeed, we have probably done it a disservice with modern-day standards of hygiene. “Good parents should let their children eat dirt,” says Blaser provocatively. Bacteria are simply part and parcel of human life. Babies are preserved in a sterile environment in the uterus, but are then first colonized by the mother's vaginal and fecal bacteria in the birth canal and later receive important bacteria from the mother's milk. Life is not possible without bacteria – or at any rate no healthy life: In experiments involving rats brought up in sterile conditions, neither the rodents' gastric nor immune systems developed properly; when the creatures were then exposed to germs at a later stage they suffered dangerous infections.

Exaggerated standards of hygiene and the far too widespread use of antibiotics are threatening to destroy a natural equilibrium built up over thousands of years. “Man and his bacteria are unquestionably a single unit,” says Richard Roberts. We should make sure that it remains that way. <

Further reading:

Jörg Blech. “Leben auf dem Menschen: Die Geschichte unserer Besiedler”. rororo, 2006. (“Life on Man: The History of Our Colonizers” [not available in English])

Living in Isolation Despite Neighbors All Around

In the major metropolises of the modern world, neighborly relationships are becoming increasingly rare and giving way to mute anonymity. In Tokiwadaira, a suburb of Tokyo, a residents' committee is fighting against the isolation of the elderly to ensure that their hardship and frequently even their deaths do not go unnoticed.

Text: Susanne Steffen

It's already late, and Takumi Nakazawa is about to settle down for the evening when the telephone rings. "There have been so many flies in front of my neighbor's window recently," explains the elderly woman at the other end of the line. She is also concerned that there is a funny smell. This triggers alarm bells in Nakazawa. The 75-year-old immediately sets off to the apartment in question. When no amount of ringing or knocking elicits any response, he calls the police. They break down the door, only to be greeted by a great black swarm of flies. The corpse is found by Nakazawa in the bathtub. An investigator reckons that the man has been dead at least two weeks. "It's a terrible sight, but the stench is altogether worse," says Nakazawa in a matter-of-fact way. By now he has almost become used to such scenes.

Over the last decade he has seen many cases of "kodokushi," the term for dying alone in Japanese. Since 2004 Nakazawa has run Japan's first ever Center for the Prevention of Death in Isolation in Tokiwadaira, just outside the 12-million-strong metropolis of Tokyo. He and his team of more than 100 volunteers field emergency calls and inquiries from concerned neighbors and relatives, registering the contact data of friends, families and doctors of elderly people – most of whom live on their own – so as to respond quickly in the event of emergency. Nakazawa proudly pulls several thick ring binders out of the safe in his office. "These contain the personal data of almost 900 people who have already registered," he explains. In particular, the service has been gratefully accepted by many elderly residents of the low-rise Tokiwadaira tenement blocks that also house Nakazawa's office.

From Family Area to Suburb for Oldsters

The local public housing association built this community from scratch in the 1960s to make more residential space available to the continually growing army of Tokyo office workers. Back then, some 20,000 people – most of them young families with small children – moved to this so-called dormitory with its 5,300 apartments. Nakazawa, his wife and their two children were among the first residents. Today more than a third of the population is over 65, and many of the community's kindergartens and schools have already



Founded the Center for Prevention of Death in Isolation in 2004: Takumi Nakazawa with one of the more than 100 helpers.

closed their doors permanently. An increasing number of residents live on their own. "Plenty of marriages break up, and many older residents have now lost their partners," explains Nakazawa. Virtually no one understands the fears and hardships of residents as well as Nakazawa does. For almost 50 years now, he has sat on various local residents' committees, which in Japan typically act as intermediaries between the local council and residents, negotiating the issue of rent increases with the housing association and acting as principal contact partner for any problems that residents might have. Most of the problems revolve around the correct sorting of rubbish or some grievance with the local housing association.

But one case nine years ago rocked the quiet world of Tokiwadaira: For no less than three years, a 69-year-old man had lain >

Figure 2

Big-City Numbers

Tokyo is the pulsating financial, industrial, commercial, educational and cultural center of Japan. Depending on the definition applied, the city is home to between 8 (the actual city area comprising 23 districts) and 35 million people (the entire urban metropolis). The Tokyo Prefecture itself encompasses 12.5 million residents. The figures below are taken from a variety of annual statistics (see sources).

31,810 Suicides

99.3% Japanese

7,800,000 Daily commuters

0.6% Koreans

0.1% Other

2,101 Men dying in isolation

2,900,000,000 Subway passengers every year

12,576,601 Residents

99% Shintoists/Buddhists

11,000,000 t Leftover food annually

2,744 People per square kilometer

3,800 Homeless

1% Christians

40,000 Cranes

60,000 Restaurants

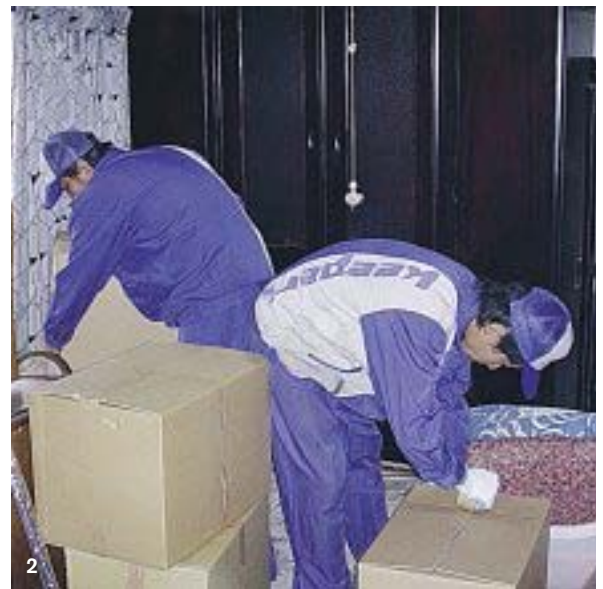
2,444,145 Single households

5,747,460 Households in Tokyo

971 Women dying in isolation

253,000 Divorces

714,000 Weddings



1 The Tokiwadaira district is a typical 1960s neighborhood just outside Tokyo. More than a third of residents are over 65. **2** Two employees of the company Keepers emptying an apartment.

dead in the kitchen of his two-bedroom apartment. All that was left of him was his skeleton. No one had noticed the death, and neither family nor neighbors had missed the man. Only when the victim's rent payments ceased – because the account from which the standing order was paid ran out of funds – did an administrator from the local housing association instigate inquiries. “We were all shocked,” recalls Nakazawa. “We were completely at a loss, asking ourselves how something like this could happen in our area.” At some point normality returned to Tokiwadaira. Then a year later Nakazawa heard a rumor that a 50-year-old resident of the community was lying dead in his apartment. He immediately called all the neighbors that he could reach. An elderly lady from the apartment opposite told him she'd seen flies at the window and had noticed a sinister smell. In addition, she hadn't seen the man in question for a long time. The landlady on the floor below likewise thought that there was an unpleasant stench. This time Nakazawa decided to take matters into his own hands. He tracked down the man's estranged wife and asked her to find out what had happened to her husband. Together with the police she found her husband sitting at his table in the apartment – having been dead at least four months. The floor was strewn with nothing but empty instant noodle cups and bottles of cheap rice wine.

Newspaper-Delivery Workers as Early Warning System

The woman later recounted that she had moved out with her children because her husband had resorted to beating her after he had lost his job and been unable to find work. “The isolation of the deceased moved me deeply,” recalls Nakazawa. “It showed that this fate really can befall anyone if we don't act to prevent it,” he adds. Shortly afterward Nakazawa advertised his own company telephone number as an emergency number in the community newspaper. Later he approached newspaper-delivery workers and asked them to report to him if they saw newspapers piling up in front of an apartment. Then he founded the Center for the Prevention of Death in Isolation, a project that gained the support of not just voluntary staff from the residents' committee, but also from the city council. The latter even

went so far as to provide him with an office, and in response to a request from Nakazawa began investigating how widespread the problem was. Every year, around 100 people die in domestic isolation in this city of 500,000 inhabitants. The corpses remain undisturbed for days – and sometimes even weeks or months – before being discovered.

Although there are no concrete figures available, Nakazawa estimates that around 30,000 people in Japan pass away in isolation every year. Investigations in Tokiwadaira revealed that men fall victim to this fate more frequently than women. In Nakazawa's view, this is down to the fact that men who have spent their entire professional lives in the vertical hierarchy of companies often have problems integrating into the hierarchy-free “horizontal” structure of a residential community. All the cases researched by Nakazawa revealed similar features: The victim had no friends, avoided contact with neighbors, never said hello, and had never learnt to cook, clean up or do laundry. Neighbors and even family members would often tell Nakazawa that the victim had been behaving oddly, making them loath to approach him.

“The problem is particularly bad in large apartment communities like ours,” says Nakazawa. Many people had moved into the community because they were looking for anonymity. And Nakazawa has now developed his own theory on this problem: “In our society of affluence and superabundance, we no longer need neighbors,” he says. In his view, neighborly relations remain intact in developing countries where people don't have it so easy from an economic perspective and are reliant on one another for help. He believes that economic prosperity and individualistic forms of upbringing in the post-war era are what lie behind the self-centered nature of people in industrialized nations.

Company Specializing in Disposal of Isolated Victims' Estates

“Moved to heaven” is the corporate motto of Keepers, Taichi Yoshida's moving company. Some 270 times a year, his company is entrusted with sorting out the estate of those who die in isolation, and in most cases this also means disposing of it. In almost every case, his

employees have to rummage around in litter-strewn apartments full of flies and cockroaches in an attempt to find things worthy of inheritance. If the corpse of the deceased person has remained in the apartment for more than four weeks, the stink of putrefaction becomes lodged so deep in floors and walls that the apartment has to be completely renovated from scratch. “Families often don’t want anything from the estate,” explains the 45-year-old company founder. “They don’t have a clue what to do with things inherited from relatives they barely knew.” His company has lately started offering services to the living too, so that their estate can be distributed according to their wishes after their death, or simply disposed of as the case may be. They are mainly motivated by not wanting to cause any bother for their families – with whom they often no longer have any contact – after their death. Indeed, as Yoshida explains: “Some of them don’t even want their relatives to be informed of their death. Many of them genuinely cannot bear the thought of relatives who have become strangers to them poking around in their personal things.”

The company’s business is booming, and Yoshida now has branches of his company throughout Japan. But even if he is pleased about this commercial success, Yoshida would much rather have an empty order book. He has also produced an animated cartoon film about the isolated deceased he has come across over the course of his career, which is distributed free of charge at community centers throughout the country. In addition, he gives talks about his work and warns about the degrading kind of death that awaits lonely people. Sometimes during these talks he recounts the story of the man who was not found for a full month after his death in an utterly filthy apartment. Just before his death the man had managed to paint the individual letters of the words “hang on” in a jerky scrawl on his fridge. “I ask people to imagine what it would be like if they had been dead for a week in their own apartment and had yet to be discovered by the outside world. Anyone who finds this thought intolerable should be looking to improve relations with their fellow beings,” says Yoshida.

Relearning the Art of Being a Good Neighbor

“Good morning!” cries out residents’ committee chairman Nakazawa to his colleagues at full volume. “Good morning!” comes back the equally hearty reply. Every committee meeting begins with the same communal greeting. “We have to relearn the art of greeting one another,” explains Nakazawa. As he sees it, by greeting our neighbors we enter into a relationship with them. In the ideal scenario this would represent the start of our return to a society in which neighbors provide one another with mutual support. “Our society is getting increasingly old. This inevitably means that more and more people will end up living alone. The group of people potentially subject to death in isolation is growing with every day,” warns Nakazawa. Japan is one of the most rapidly aging societies in the world. Even now, more than 20 percent of the population is over 65. In 25 years or so, one person in three will be over 65. By 2030 the number of elderly people living alone will have doubled. For many people, having good relations with their neighbors could even prove a form of life insurance. Although all the emergency calls triggered by family members so far have only led to the discovery of a corpse, action by concerned neighbors has actually saved the life of the victim in a third of all cases. Take, for example, the woman who called up Nakazawa because her elderly neighbor had left the television on at full volume

for hours on end. Nakazawa found the woman in a serious condition but still alive, and was able to call an ambulance for her. Slowly but surely his efforts are paying off. “To start with, we had 12 to 13 deaths in isolation every year in our community, now it’s less than 10,” says Nakazawa, evidently encouraged. Moreover, the victims in question are being found more quickly – for the most part now within three days.

“Death is a mirror of life,” reckons Nakazawa, “and those who have lived a full life do not die alone.” He therefore believes that the best prevention against a death in isolation is assistance in leading a happy life. To give lonely people in Tokiwadaira the chance to forge new contacts, Nakazawa and his volunteers have founded a private café. The waitresses help new arrivals with their initial fears of contact. “There is nothing more beautiful than the happy faces of our customers when they say to us how good it feels to talk to a living human being again instead of sitting in front of the television,” enthuses 64-year-old Hisae Shirakawa, who waitresses in the Iki Iki Salon five days a week. Many customers now come on a daily basis. Customers who were once very lonely regularly tell her of their plans for group outings, and occasionally elderly people who were once isolated hold neighborhood parties in the Salon. Tokiwadaira is now viewed throughout Japan as a model example of good neighborhood. Representatives of communities all over the country have traveled here to obtain information about Nakazawa’s project at first hand. Nakazawa is particularly proud of the fact that the settlement consisting of low-rise concrete tenements is once again among the city’s most popular areas – thanks to its good neighborly relations. <



Volunteer waitresses run the Iki Iki Salon in Tokiwadaira, a place where neighborly contacts can be fostered.

Bündner Neighborhoods

No other canton in Switzerland can match the canton of Graubünden for cultural diversity. “The Land of 150 Valleys” is also the only canton that is home to three Swiss languages. None of these language groups has ever looked to dominate, however: Distinguishing features other than language have always been of greater political importance. Instead, sections of valleys (or indeed whole valleys) formed their own “Gerichtsgemeinden” – or judicial communities – consisting of several neighborhoods.

Text: Florian Hitz

Roughly speaking, the three languages of the canton of Graubünden break down geographically into Italian in the southern valleys, Rhaeto-Romansch in the mountainous interior and German in Nordbünden, the northerly part of the canton. But there are no clear boundaries. Particularly as many nonnative German-speaking folk migrated from the Valais (Wallis) and settled in the southern valleys. Accordingly, distinguishing features other than language have always been much more important in Graubünden. When political associations started to be established in the late Middle Ages, the process did not revolve around language borders. Instead, wider communities were formed in the individual valleys or in sections of valleys. And for obvious reasons: The territory of this region is highly “compartmentalized” to say the least. The Swiss actor and cabaret artist Zarlì Carigiet used to ask this very question in a song: “Graubünden, the land of 150 valleys – is it an advantage, or is it an error?” Though as the words in question were stripped of dialect they were no doubt foisted on him by Swiss lowlanders.

And so in Graubünden a unique system developed at valley or at microregional level: the “Gerichtsgemeinde,” or “judicial community.” The leaders of such communities – known as “Landammänner,” “Mistrals” or “Podestà” – first exercised what in medieval times was known as “niedere Gerichtsbarkeit” (lower jurisdiction) and then also “hohe Gerichtsbarkeit” (higher jurisdiction). In the premodern era this was the most important form of sovereign authority. Indeed, every Bündner judicial community was proud of having its own galls – a symbol conducive to respect for local power, albeit a rather grim one. Little changed until the middle of the 19th century (Disposition of Territory Act and Penal Code of 1851; Cantonal Constitution and Code of Criminal Procedure of 1854). Only then did the Bündner judicial communities lose their sovereign power over life and death. They were replaced by 39 district courts and one cantonal court. At the same time, the judicial communities were also replaced as political entities by 237 “neighborhoods.” These were essentially the same as today’s political municipalities or parishes – the only difference nowadays being a reduction in their number to 203 as a result of mergers over the years.

Essentially these neighborhoods were no different to the previous village and church communities that had organized and controlled

the local economy since time immemorial. As early as the Middle Ages, it was the neighborhood assemblies – consisting of the heads of the village families – who passed judgment on the use of common resources, i.e., pastures, water and forest. These resources constituted common property insofar as they belonged to the community. But who precisely – which community member, which neighbor – should be allotted which portion for his own use, and what should he do to earn it? When, to what extent and for how long should even private resources be subject to public use? Under what circumstances might it be possible to privatize public resources? How was a fair solution arrived at? And how might the overuse of resources be prevented?

Sophisticated Mechanism for Use of the Alps

Where the use of alpine resources was concerned – notably the alpine meadows – the communities developed the “wintering” rule: Every farmer should be allowed to “summer” as many cows as he himself had nurtured through the winter. The number of “alpine impacts” or “cow rights” was geared around the amount of hay and the amount of valley meadow space owned by the farmer in question. In short, it revolved around his assets. Consequently, small farmers were not allowed to lease cattle from outside for summer grazing, nor could their own rights of use be rented out to others.

A number of scientific disciplines, from anthropology and sociology through to economics and geoecology, have flagged up this historic model and celebrated it: Finally the thorny problem of “common resources” had been solved. By applying traditional wisdom of this nature, the issues of sustainability, logical apportionment and homeostatic balance could be simultaneously addressed. Scientists are keen to flag up in particular – if not exclusively – the community of Törbel in the Valais, which has been the object of particularly close examination. But the wintering rule applied equally in the Bündner neighborhoods, though it is only fair to point out at this juncture that this kind of rule probably applied in all alpine communities. Village solidarity had its limits. However, not all local residents were fully entitled “neighbors” or citizens of the community. Some people had neither voting rights nor usage rights since they were either “Beisasen” or “Hintersassen” – recent settlers or lower-class residents who

were not accorded full civic rights. Up until the 16th century it was still possible to buy one's way into community citizenship; those who married into the community paid a reduced tax. But before long the neighborhoods closed ranks completely. From then on, anyone who even brought up the idea of an outside male being given citizenship by naturalization would immediately lose their own citizenship rights. This punitive provision found its way into neighborhood law in a variety of ways.

Collaboration, War and Atonement

There was nonetheless a degree of institutional collaboration between the different neighborhoods. Several neighborhoods would come together to form a judicial community. Each neighborhood contributed their representative to the council, which at the same time formed the jury panel. Every neighborhood representative therefore held the weighty title of juror.

Political cooperation was also common between the judicial communities themselves. In the 15th century three large associations of communities grew up and became known as the "Bünde" – leagues – that in turn ultimately merged to form a single higher body. From the 16th century onward the Three Leagues formed their own Free State, which was essentially a republic (i.e., "free" of any monarch). The government institutions of the Three Leagues remained rudimentary, however. The most important decision-making tool was the referendum: Every edict – encompassing not only laws but also simple administration decisions – was submitted to the judicial communities. The actual voting process was then typically held in the neighborhoods themselves. In the 1860s, this historic Bündner form of referendum was rediscovered and adopted at a wider Swiss level by the "Democratic Movement." From there it finally found its way (in modified form) into the Federal Constitution of 1874.

The provisions of the Bündner "Bundesbriefe" – Federal Charters – revolved above all around the preservation of law, peace and order through a process of arbitration. A fine example of this kind of arbitration was applied to the "Stätzer Conflict" between the neighborhoods of Churwalden and Obervaz. In an exception to the rule, this was a conflict between peoples of different language groups: The Churwaldner were German-speaking "Walser," the Obervazer "Welsche," i.e., Romansch. In addition, the conflicting parties belonged to different leagues: the Churwaldner to the League of the Ten Jurisdictions, the Obervazer to the League of God's House.

The "Stätzer Conflict" was a protracted and bitter farming feud. The dispute was essentially over ownership of Alp Stätz on the Stätzerhorn, which forms part of the Dreibündenstein mountain chain. Territorial lines were drawn up, but then breached. The conflict culminated in slaughter on both sides: In 1847 the Obervazer killed 12 Churwaldner, while for their part the Churwaldner killed just one Obervazer. The following year, an arbitration court of the Three Leagues met in the town hall of Chur and sentenced the offenders to the payment of damages to the families of the slain, as well as a pilgrimage. The latter was designated as a form of atonement, but the word for this in German is "Versöhnung," which also carries the meaning of reconciliation: Twelve Obervazer and one Churwaldner were to embark on a joint and peaceful pilgrimage to Rome. If the parties so wished, however, they could opt to attend that year's "Engelweihe" (Feast of Angels) at Einsiedeln Abbey instead. Either way, official certification that they had completed their pilgrimage had to be obtained at their final destination. <

The Bündner Neighborhood

In the Rhaeto-Romansch language, "community" and "neighborhood" are essentially the same word even today: "vischnaunca" and "vschinaunca." In Italian, the historic term "vicinia" means the same thing.

Neighbors or community citizens (Romansch: "vischins" and "vaschins," Italian: "vicini") were entitled to use community resources. Above all, this included access to both the lower-lying and higher mountain pastures. In addition, a general right of grazing on private meadows applied in both the spring and fall: "Gemeinatzung," or common feeding.

These rights also entailed obligations, however: Neighbors were obliged to participate in communal work, or "lavor cumina," to work on behalf of the community by performing tasks such as maintaining community meadows, building and maintaining roads and paths, reinforcing the banks of streams, etc.

Neighborhood laws were enshrined in village ordinances and community charters ("tschantamaints" and "ordinamenti") that set out all the key provisions: how many cows could be stationed on which hill-sides; the level of a herdsman's pay; the size, age and color of breeding bulls; the mechanism for wood procurement, the organization of fire and water defenses; measurements and weights.

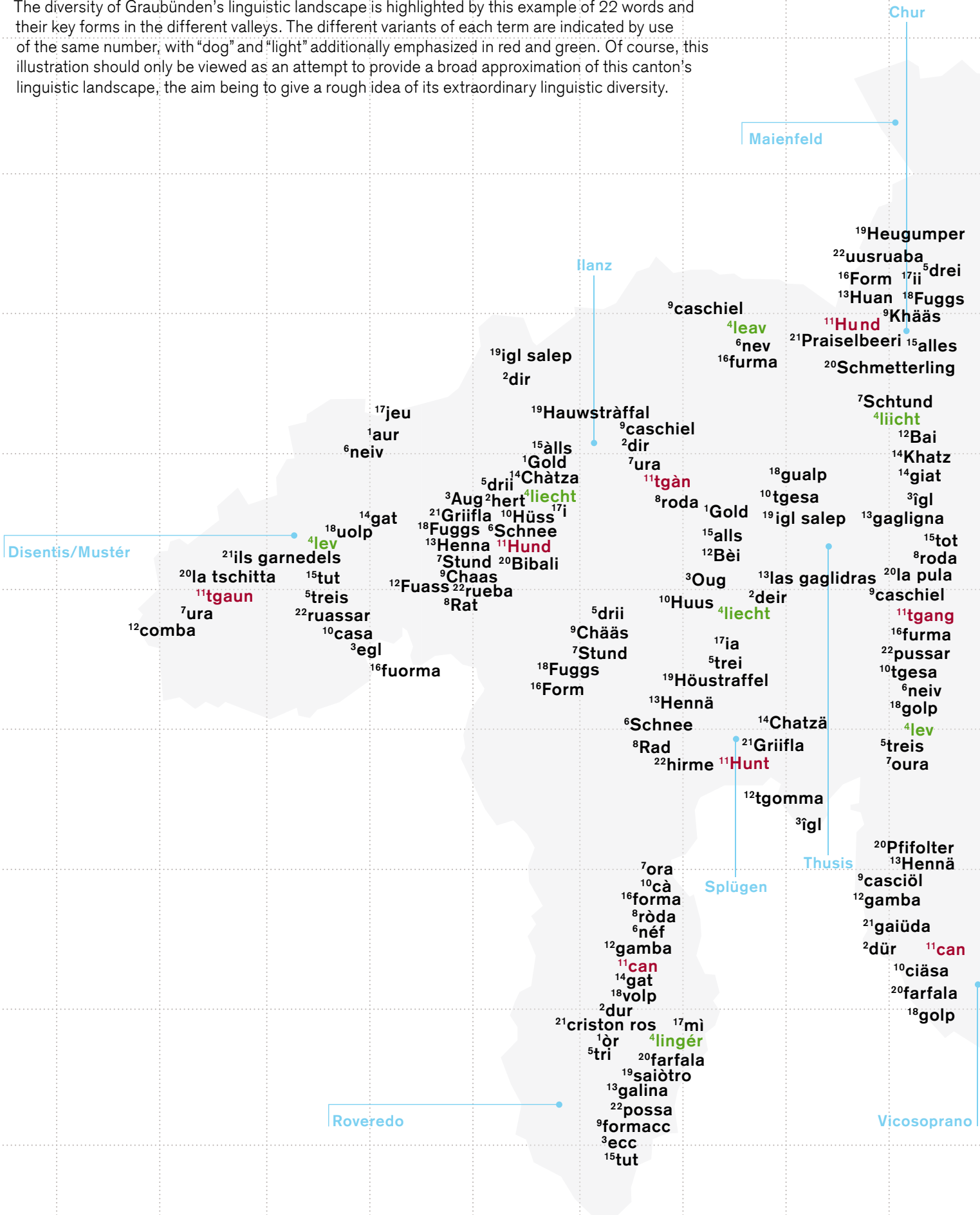


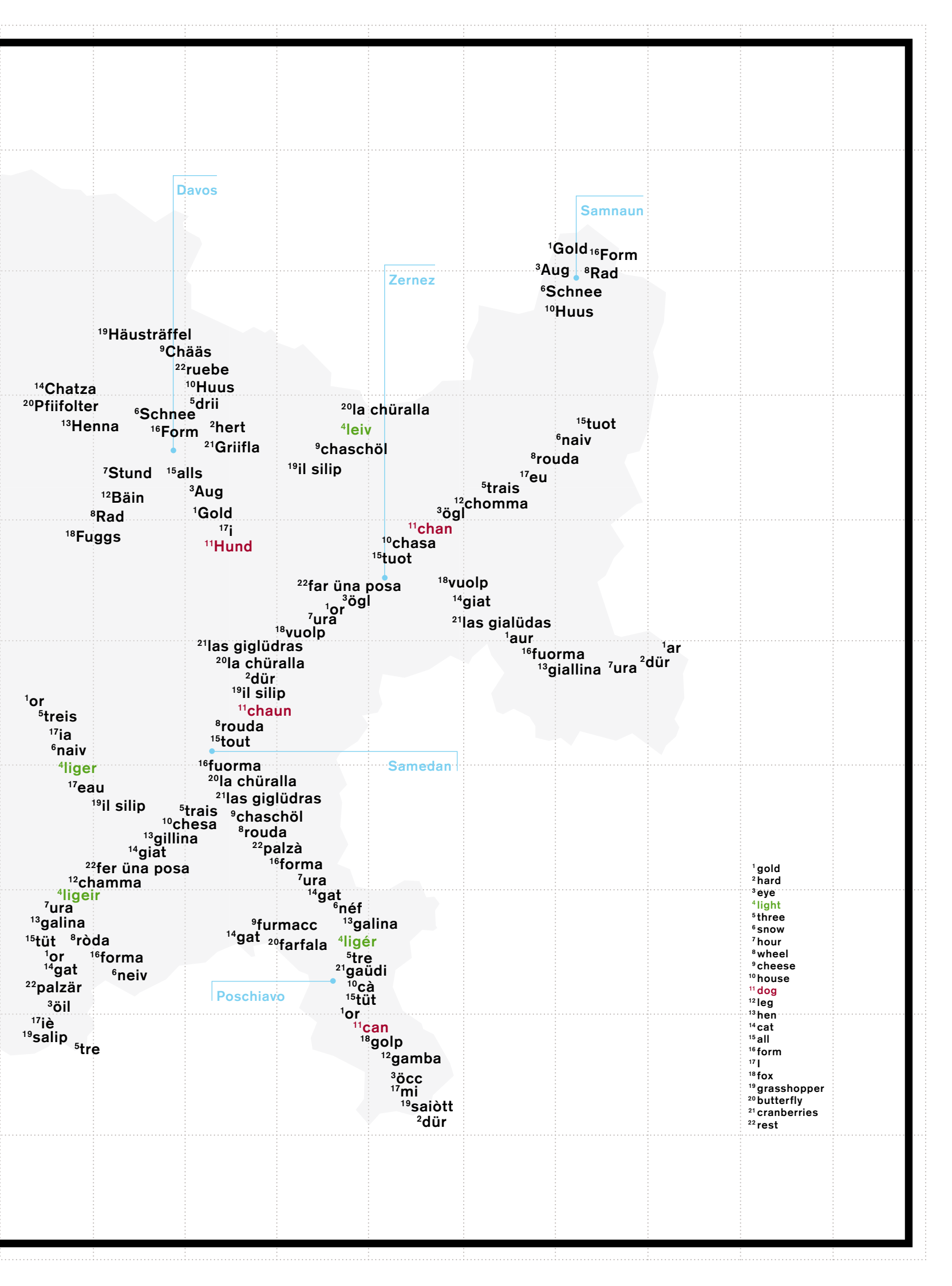
1 Coat of Arms of the League of God's House 2 Coat of Arms of the League of Ten Jurisdictions 3 Coat of Arms of the Grey League 4 Coat of Arms of the canton of Graubünden

Figure 3

Multilingual Graubünden

The diversity of Graubünden's linguistic landscape is highlighted by this example of 22 words and their key forms in the different valleys. The different variants of each term are indicated by use of the same number, with "dog" and "light" additionally emphasized in red and green. Of course, this illustration should only be viewed as an attempt to provide a broad approximation of this canton's linguistic landscape, the aim being to give a rough idea of its extraordinary linguistic diversity.





Davos

Samnaun

Zernez

Samedan

Poschiavo

- ¹ gold
- ² hard
- ³ eye
- ⁴ light
- ⁵ three
- ⁶ snow
- ⁷ hour
- ⁸ wheel
- ⁹ cheese
- ¹⁰ house
- ¹¹ dog
- ¹² leg
- ¹³ hen
- ¹⁴ cat
- ¹⁵ all
- ¹⁶ form
- ¹⁷ |
- ¹⁸ fox
- ¹⁹ grasshopper
- ²⁰ butterfly
- ²¹ cranberries
- ²² rest

¹Gold ¹⁶Form

³Aug ⁸Rad

⁶Schnee

¹⁰Huus

¹⁹Häusträffel

⁹Chääs

²²ruebe

¹⁰Huus

¹⁴Chatza

²⁰Pfiifolter

¹³Henna

⁶Schnee

¹⁶Form

⁵drii

²hert

²¹Griifla

⁷Stund

¹⁵alls

¹²Bäin

⁸Rad

¹⁸Fuggs

³Aug

¹Gold

¹⁷j

¹¹Hund

²⁰la chüralla

⁴leiv

⁹chaschöl

¹⁹il silip

¹or

⁷ura

¹⁸vuolp

²²far üna posa

³ögl

¹or

¹⁸vuolp

²¹las giglüdras

²⁰la chüralla

²dür

¹⁹il silip

¹¹chaun

⁸rouda

¹⁵tout

¹⁶fuorma

²⁰la chüralla

²¹las giglüdras

⁹chaschöl

⁸rouda

²²palzà

¹⁶forma

⁷ura

¹⁴gat

⁶néf

¹³galina

⁹furmacc

¹⁴gat

²⁰farfala

⁴ligér

⁵tre

²¹gaüdi

¹⁰cà

¹⁵tüt

¹or

¹¹can

¹⁸golp

¹²gamba

³öcc

¹⁷mi

¹⁹saiòtt

²dür

¹⁵tuot

⁶naiv

⁸rouda

¹⁷eu

⁵trais

¹²chomma

³ögl

¹¹chan

¹⁰chasa

¹⁵tuot

¹⁸vuolp

¹⁴giat

²¹las gialüdas

¹aur

¹⁶fuorma

¹³giallina

⁷ura

²dür

¹ar

¹or

⁵treis

¹⁷ia

⁶naiv

⁴liger

¹⁷eau

¹⁹il silip

⁵trais

¹⁰chessa

¹³gillina

¹⁴giat

²²fer üna posa

¹²chamma

⁴liger

⁷ura

¹³galina

¹⁵tüt

⁸ròda

¹or

¹⁴gat

¹⁶forma

⁶neiv

²²palzär

³öil

¹⁷ie

¹⁹salip

⁵tre

Canada–USA: Like Sleeping With An Elephant ...

The USA and Canada are closely linked geographically, but above all also economically. In the Canadian town of Stanstead the 8,891-kilometer border even cuts through the middle of the library. Time and again, however, issues arise that cloud good neighborly relations.

Text: Gerd Braune

Nancy Rumery doesn't hesitate long when asked to state where she belongs: "We belong to both countries, and not to one or the other." Nancy Rumery is a librarian at the Haskell Free Library in Stanstead, a town situated in the Canadian province of Quebec – or in the community of Derby Line in the US state of Vermont, depending on which way you look at it. The library is probably unlike any other in the world: A black line on the wooden floor stretches right through the middle of the reading room and the bookshelves, indicating the border between the US and Canada. In other words, part of the Haskell library lies in Quebec, part in Vermont.

The library building, deliberately built on the border as a symbol of friendship between the two countries back in 1901, is now a tourist attraction with the library on the ground floor and a theater on the upper floor. Children in particular have great fun placing one leg in Canada and the other in the US. Most of the books lie on the Canadian side of the border, whereas the computers with high-speed Internet connections lie in the US. The border also cuts through the rows of seats in the theater auditorium, again characterized by a black stripe on the wooden floor. Concerts and theater performances are always accorded "borderless" applause.

Tighter Border Regulations Since 9/11

But the relationship between Canada and the US is anything but "borderless." Quite the opposite: Since the terrorist attacks of September 11, 2001, the border has become more tightly controlled and more obvious. A host of US politicians have since raised the specter of terrorists being able to slip into the US via Canada. In conservative circles of the US in particular, the rumor persists that the culprits of

9/11 came in via Canada. Last year the US introduced a new requirement for visitors to display a new form of identity. Whereas Canadians had hitherto been accustomed to simply waving their normal driving license at border points, they now need a passport or an "enhanced driving license" with a chip that contains personal data. Similarly, US citizens who have been used to heading off into Canada spontaneously with just their driving license now require the new document to reenter their own country.

The border between the US and Canada is considered the "longest nonmilitarized border in the world." It is 8,891 kilometers long, of which 2,475 kilometers alone consist of the border between Alaska and either the Canadian Yukon territory or the province of British Columbia. The other frequently used description, the "longest undefended border," is only true in the sense that no soldiers are stationed along the dividing line. But it is protected, either by border officials or, outside of built-up areas, by sensors in the earth that trigger reports to the nearest border station if any unauthorized border crossing is registered.

For the same reason, there are also rules to be followed when visiting the library in Stanstead. The entrance to the library lies in US territory, in the Vermont community of Derby Line, while the majority of the books are in the section of the building that belongs to the Canadian community of Stanstead. Canadians can only access the library from US territory, however. Those coming by car need to exercise particular caution. "If you leave your car on the Canadian side of the border and walk straight into the library, you don't have to report to customs," explains Nancy Rumery. For their part, US citizens visiting the library have unrestricted access to the books on the

Canadian side. However, anyone who thinks they can visit the library and thereby make an unauthorized visit to another country or use it to take a car over the border is mistaken. “That’s where the problems start,” points out the librarian. “We’ve seen tourists earning a severe ticking-off because they disregarded the border regulations and failed to register at the border office.” In the worst scenario such infringements can be punished with hefty fines.

Continual Strains on Neighborly Relations

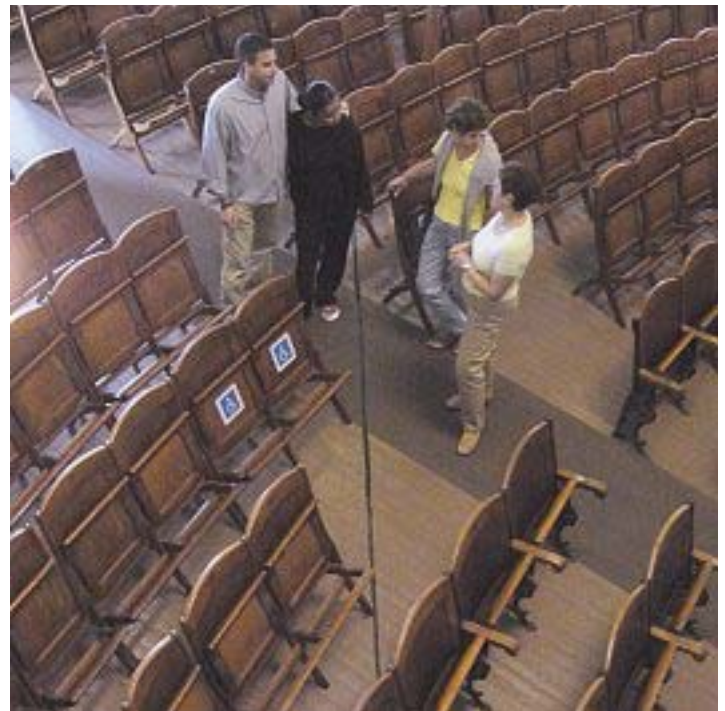
But it’s not only minor transgressions that can sour relations between the US and Canada – two countries once described by former Canadian Prime Minister Jean Chrétien as “cousins” – even though the pair enjoy not only a free trade agreement (NAFTA, to which Mexico is also party) but also close military collaboration in various NATO structures and the bilateral air defense agreement NORAD. For years the US imposed punitive import taxes on Canadian exports of wood, which led to endless proceedings before both NAFTA and WTO courts before the dispute was finally ended by compromise. In 2003, Canada refused to support the US when it went to war in Iraq, leading to the most serious impairment of Canadian–American relations since the Vietnam War, when the then Prime Minister Pierre Trudeau openly took a stance against the American position and opened up Canada’s borders to young Americans who wanted to avoid being called up for military service. Nor was this Trudeau’s only tweaking of Uncle Sam’s beard: Where Cuba was concerned, he again clearly distanced himself politically from the US position, refusing to back the embargo of the communist Caribbean state. Canada’s decision in 2005 not to be part of the missile defense system promoted by President George W. Bush was another cause of chagrin in Washington.

But while the majority of Canadians took a very dim view of George W. Bush, Barack Obama continues to enjoy widespread popularity (despite a fall in his ratings), which has unquestionably had a positive impact on the attitude of many Canadians toward their southerly neighbor. A survey conducted last fall by leading pollster Nik Nanos found that a majority of both Canadians (59.6 percent) and US Americans (69.7 percent) were in favor of closer cooperation between the two countries in the sphere of security, while a much greater majority (83.9 percent of Canadians, 86.4 percent of US Americans) favored the development of an integrated energy policy for the two nations, so as to wean the North American continent off its dependency on Middle Eastern oil.

Canada’s Trade Surplus

The two countries’ economies are closely interwoven. According to US statistics, the trade in goods between the two countries in 2008 amounted to a total of 600 billion US dollars, with a significant trade surplus on the part of the Canadians, who export much more to the US than they import from their southerly neighbor in return. The US is Canada’s most important trading partner by a wide margin, even if the US did fall from 86.7 percent of Canada’s total export trade in 1999 to 77.6 percent in 2008. However, this decline was due to an increase of the proportion of both countries’ balance of trade with other countries in particular, and not to a decline in US–Canadian trade.

While on the one hand Canada is keen to retain its close economic partnership with the US, on the other it also wants to preserve a certain distance. There is a curious contradiction inherent in the



Librarian Nancy Rumery balances on the US–Canadian border, which in the Haskell Free Library of Stanstead is clearly marked by a black line on the floor in the downstairs reading room and in the small upper-floor theater.

Canadian psyche: wanting the assurance of the US as a best friend at their side, but at the same time cultivating a certain degree of anti-Americanism – yearning to be distinct from the US and thereby acquire an independent profile. Anyone trying to describe the relationship of these two countries with one another today cannot ignore a famous quotation of Trudeau’s, even if it was made back in 1969. In a speech to the National Press Club in Washington, he observed that Americans should never underestimate the continual pressure that even the very presence of the US exerts; Canadians are different from Americans, and different because of Americans. >

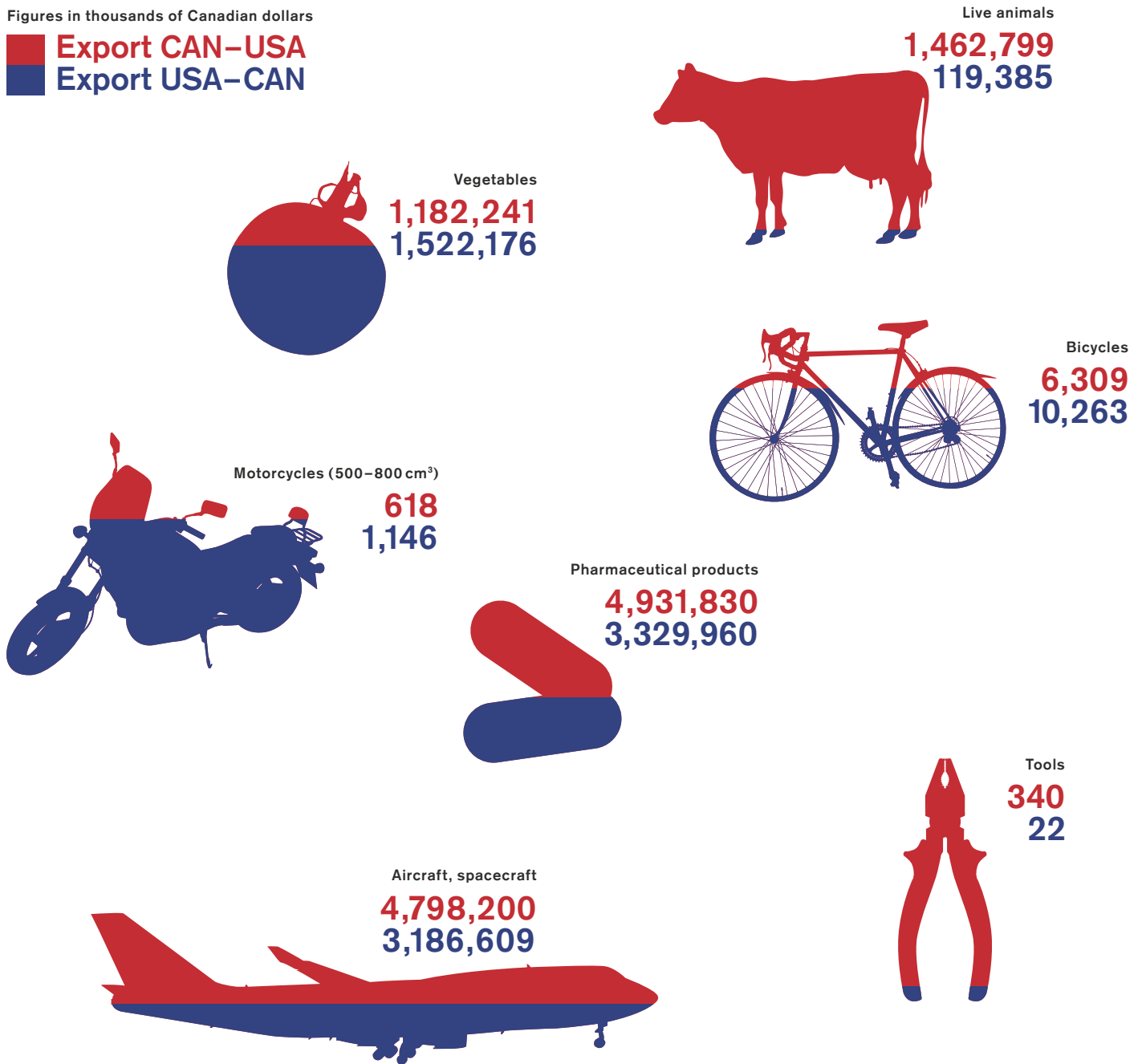
Figure 4

Economic Links Between Canada and the US

Canada, slightly larger in surface area than the US but with only a fraction of the population, is very dependent on its neighbor in economic terms. For example, it generates almost two-thirds of its global trading volume with the US.

Figures in thousands of Canadian dollars

 **Export CAN-USA**
 **Export USA-CAN**



Population

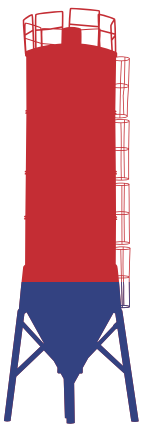
CAN 33,980,518
USA 308,564,639



Surface area

CAN 9,984,670 km²
USA 9,629,091 km²





Salt, stone, lime, cement

814,040
427,231



Mineral fuels

66,494,097
9,808,491



Sweet drinks

86,884
282,893

Automobiles

6,086,070
4,119,491



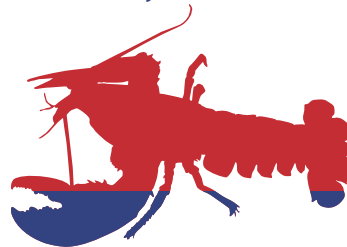
Beer

208,799
126,157



Fish, crustaceans, mollusks

1,872,493
563,759



Clothing

136,175
254,515

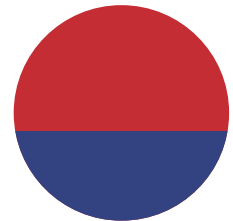


Export

CAN/USA
USD 212,906,000

Export

USA/CAN
USD 160,027,000



Trading volume

CAN/USA
USD 372,933,000

CAN/world
USD 596,259,000

USA/CAN
USD 372,933,000

USA/world
USD 2,370,277,000,000

Trading volume CAN/USA compared to CAN/world

62.54%



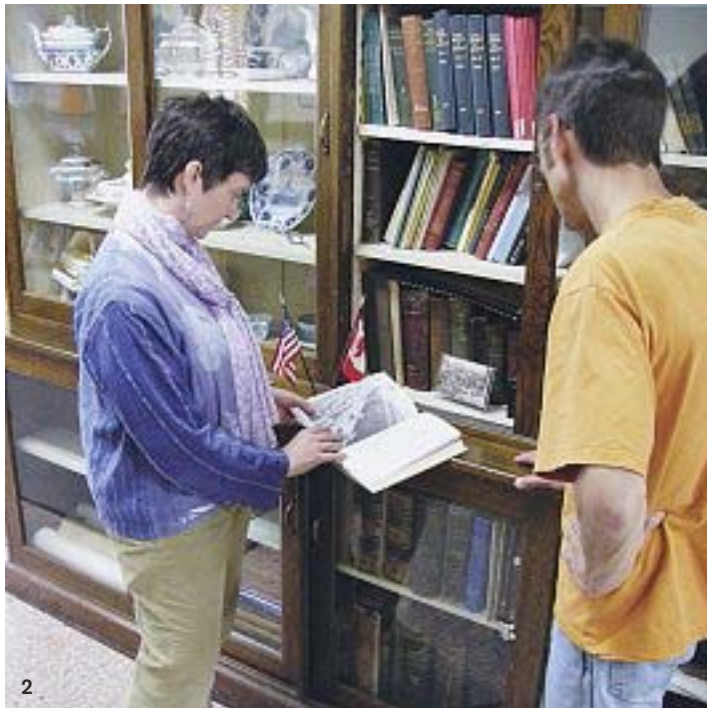
Trading volume USA/CAN compared to USA/world

0.015%





Tourist attraction among the islands on the St. Lawrence River near Rockport in Ontario: The two tiny Zavikon Islands are connected by a wooden bridge just 10 meters long. The left-hand island constitutes Canadian soil, the one on the right American.



1 If the border runs precisely along the middle of the roadway between Stanstead (CAN) and Derby Line (USA), how could the street be called anything but Canusa Avenue? **2** The Haskell Free Library was deliberately sited on the border in 1901 as a sign of friendship.

Then followed the famous “mouse and elephant” quotation that entered the history books (although Trudeau never actually referred to Canada as a mouse): “Living next to you is in some ways like sleeping with an elephant. No matter how friendly and even-tempered the beast, if one can call it that, one is affected by every twitch and grunt.”

In 2002 the extreme right-wing US politician Pat Buchanan described Canada as “Soviet Canuckistan.” John F. Kennedy, by contrast, took a much friendlier line (“Geography makes us neighbors.

History makes us friends. The economy makes us partners. And necessity makes us allies.”). The current US President Barack Obama also turned on the charm on his first official visit to Canada in February 2009 (“I love this country and think that we could not have a better friend and ally.”), while Canadian Prime Minister Stephen Harper spoke of the “special relationship” between the two countries when Obama was inaugurated as president: “The US remains Canada’s most important ally, closest friend and largest trading partner.”

Canada: Key Energy Supplier

Canadians bemoan the ignorance of many Americans when it comes to understanding their northerly neighbor. For example, only a minority of people in the US know that Canada is not only their largest trading partner but also their most important energy supplier. In small regional newspapers in the US, weather maps simply mark the territory between the “Lower 48” and Alaska with a blank white space. Canada simply doesn’t exist. Canada’s system of government is utterly alien to Americans, whereas most Canadians are very well informed about US politics. The struggle over the reform of the US health care system and the attacks in the US on Canada’s tax-financed health care system were observed with consternation by the Canadians, while precisely this aspect is proof of Canada’s “socialism” as far as conservative US politicians are concerned. And the fact that Canada actually has a social-democratic party that is represented in the federal parliament – even holding power in some provinces – is something that makes not just US Republicans shudder.

And yet in Stanstead and Derby Line the proximity of the two sides can be seen and felt, and not just in the library. The two communities have integrated. In the self-evidently named Canusa Avenue, the border runs along the middle of the roadway. On the one side Americans, on the other Canadians, who technically should report to customs before they cross the street to chat to their neighbors, but in this case the letter of the law is not applied too severely.

The two countries are also very close among the islands of the St. Lawrence River near Rockport in Ontario. When tourists chug around the St. Lawrence on pleasure steamers in the summer, they are reminded by the captain to have their cameras at the ready. Because this part of the river is home to the Zavikon Islands, two tiny parcels of land connected by a bridge just 10 meters long. It is said to be the “smallest cross-border bridge in the world.” One island lies in Canadian waters, while the other is part of US territory. Border disputes on the St. Lawrence are nonexistent, a situation very different to the Arctic, where the US and Canada are locked together around the border demarcation in the oil-rich Beaufort Sea, both claiming sovereignty rights in the Northwest Passage.

“Things used to be much more relaxed,” sighs librarian Nancy Rumery. One of the reasons for the situation having tightened up so much is the arrival of US law enforcement officers who have cut their teeth on the Mexican border and are accustomed to taking a tough approach. Then they suddenly found themselves in a place where people have crossed lines for generations without any regard for sovereignty symbols. “I grew up with this library,” says Canadian Diane Farley French, who has come to the library to get a few books. “When we were kids there were no border markings in this building. We knew that some was in Canada and some in the US. But nothing else.” <

A Journey Far Beyond Our Imagination

The sun and the moon are the most obvious neighbors of our planet. But what lies beyond? The universe may have no borders, but that doesn't make it infinite.

Text: Andreas Walker

Look up at the sky on a cloudless night and with your naked eye you will see several thousand stars twinkling. They appear as tiny dots that look like diamond fragments, yet each one is a sun in itself! Indeed, many of them are considerably larger than the mother orb of our own solar system. And between these points stretches a gently shimmering band – the Milky Way. But what looks like a diffuse nebula is actually our own spiral galaxy. Our sun lies on the edge of this galaxy, which has a diameter of around 100,000 light-years and consists of some 200 billion suns. Our viewpoint from the edge of the galaxy is what allows us to see this agglomeration of stars – a bit like standing on the edge of a plate and looking around. It is this vast multitude of stars that we are referring to when we use the term Milky Way.

Unimaginable Dimensions

Outer space covers such an enormous area that until today we have not thoroughly researched even our own solar system. For example, no probe has ever traveled to the small, outermost dwarf planet of the solar system, Pluto.

An attempt to “solve” the problem of great distances between stars was attempted back in the 1960s in science fiction films. The cult series “Star Trek” resorted to extremely powerful engines that allowed the starship Enterprise to go to warp speed – superluminal speed or faster than the speed of light – and thereby hurtle around the universe. Captain James T. Kirk would simply lift his right hand casually and give the order “Warp 7” – (whatever that was supposed to mean) – “Engage!” And from that point on the TV viewer would be captivated by white points of light – i.e., the stars – flashing past the spaceship like flakes of snow in a blizzard.

But let's dwell on this seriously for a moment: How fast would one actually have to fly to move around the universe at a reasonable cruising speed so as to reach our cosmic destinations in a conceivably feasible time span? And let's not forget: The physicist and Nobel Prize winner Albert Einstein (1879–1955) demonstrated that it is impossible to travel faster than the speed of light. But let's just suppose we were to discover something as yet unknown in this sphere of physics that would somehow allow us to overcome this barrier.

What would we find outside our own solar system? How would the universe appear from the other side of our galaxy, and what kind

of view would there be on the other side? Where are the borders to our universe, if indeed they exist at all? Important questions all, but hardly ones we are likely to answer with modern-day space shuttles.

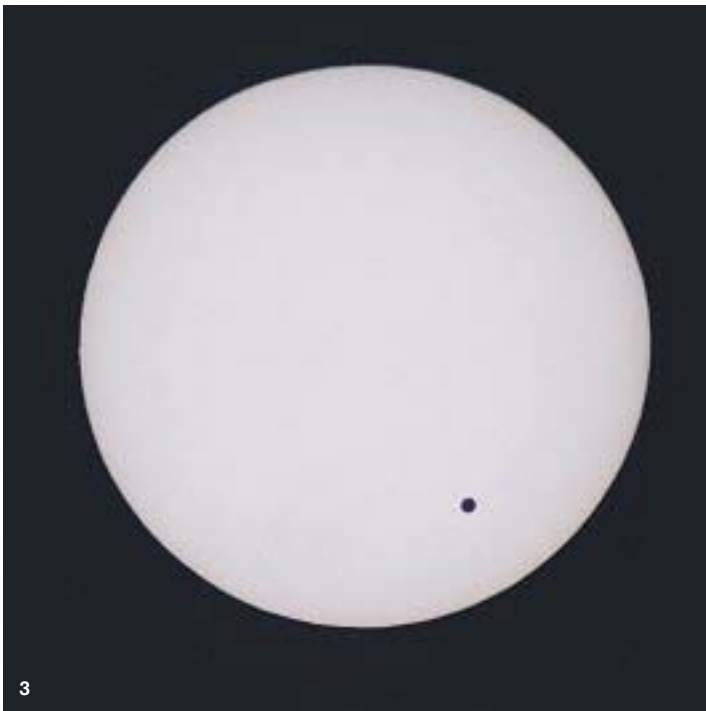
Traveling to Our Nearest Neighbors at the Speed of Light

To gain some inkling of the immense size of the cosmos, let's go on a mental journey. Picture yourself embarking on a cosmic voyage that starts from Earth and involves traveling at the speed of light. In other words, you travel as fast as light, energy and information travels through outer space. Expressed in numbers, this amounts to some 300,000 kilometers per second – so a little faster than the equivalent of circumventing the Earth seven times in a second. Our destination on this journey is the cosmic horizon, which according to the latest scientific understanding is just under 14 billion light-years away.

We flash past the moon around 1.3 seconds after takeoff, and both this satellite and our own blue planet shrink to become insignificant points in the blackness of space within just a few seconds. For purposes of hypothetical comparison, let's assume that all the planets in the solar system lie in a straight line: It would take just under 13 minutes to reach Mars and somewhat less than three-quarters of an hour to reach Jupiter. We would pass Saturn after just under 1.3 hours, Uranus at around 2.7 hours and Neptune after some 4.2 hours. The travel time to Pluto would take between four and seven hours (Pluto has a highly eccentric orbit, hence this rather wide bandwidth of time). From this distance our sun would still appear to us as the brightest star visible. Another 4.3 years would elapse until we finally reached our nearest neighboring star, Proxima Centauri, but it would then be more than – wait for it – two million years before we reached one of our neighboring galaxies, the Great Andromeda Nebula. All of which allows us to conclude that even the speed of light would not suffice to travel very far in the cosmos in a reasonable human time frame.

Multiply It a Billionfold

Let's now imagine we could upgrade our hypothetical spaceship to travel a billion times the speed of light. While beyond the bounds of even the wildest imagination, this nonetheless theoretically >

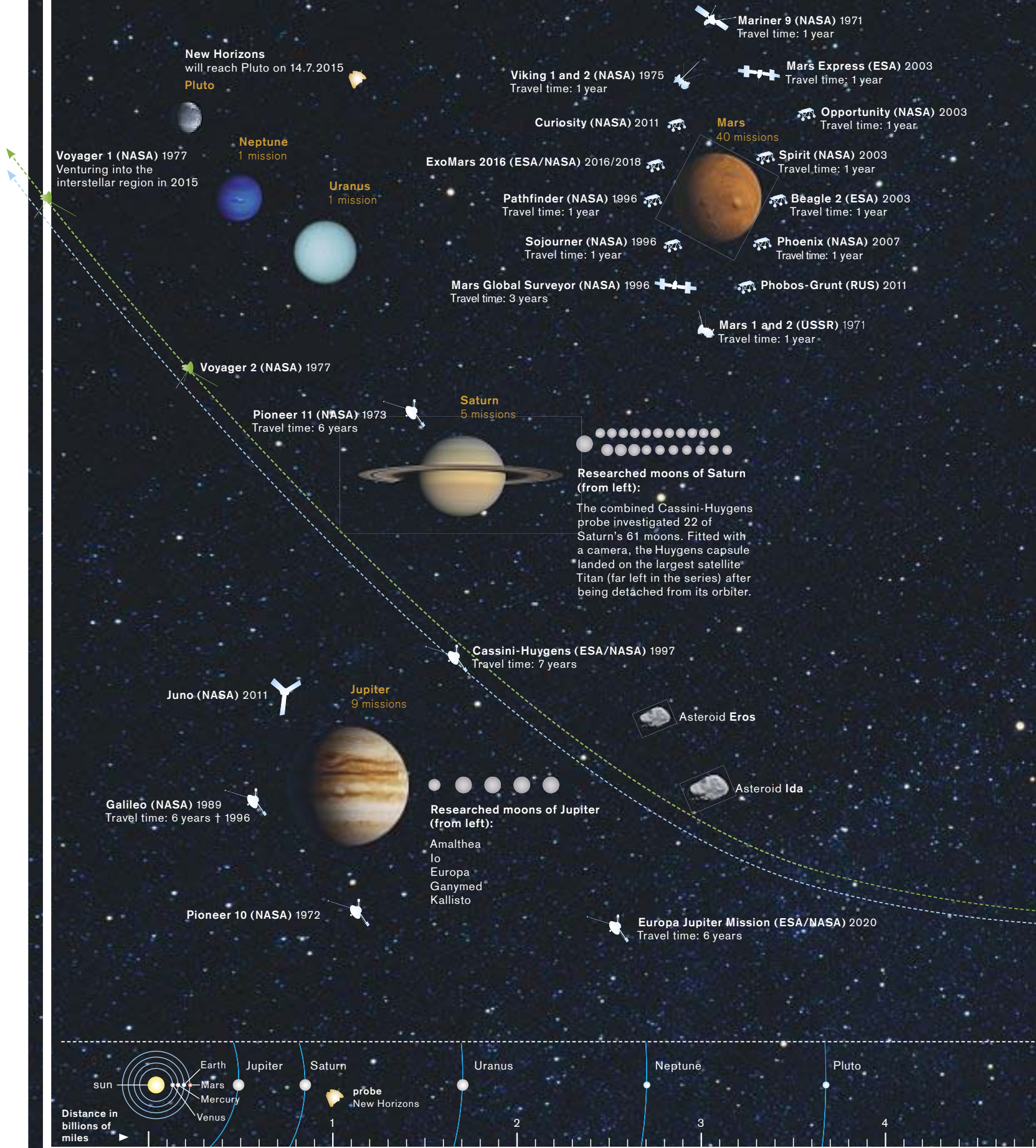


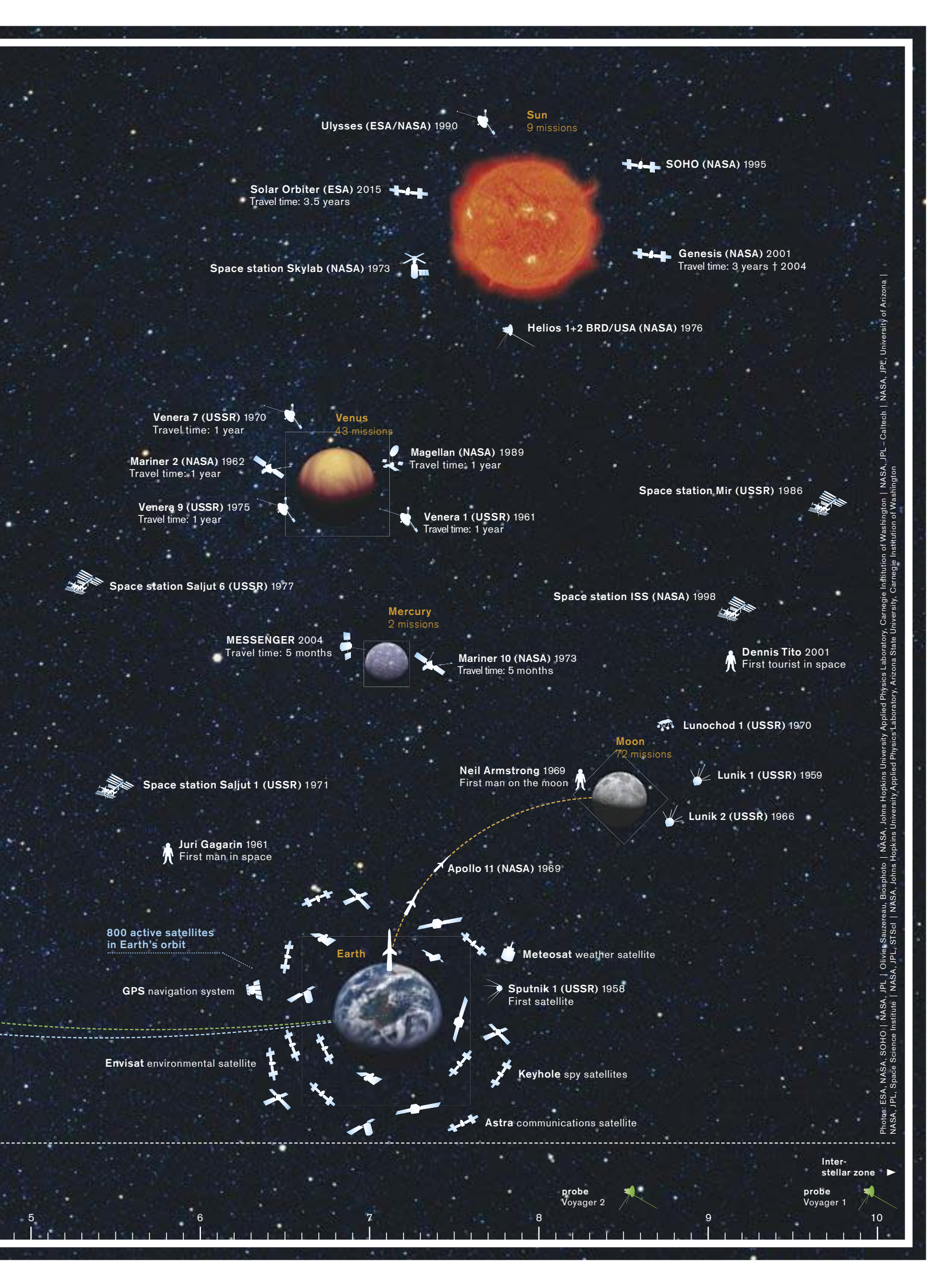
1 A view into the middle of the Milky Way. What we see as a nebulous band in the sky is the background illumination provided by 200 billion suns that make up our home galaxy. 2 Coming together of moon and Mars. On December 24, 2007, the moon and our neighbor planet Mars looked so close to one another from our perspective that they almost "touched." 3 Venus in front of the sun. On June 8, 2004, our closest planetary neighbor passed in front of the sun. During this mini-eclipse Venus appeared as a black silhouette against the blazing expanse of the sun. 4 Rendezvous of Saturn and moon. On May 22, 2007, the ringed planet Saturn was covered by Earth's moon.

Figure 5

How Man Explores His Cosmic Neighborhood

Even the exploration of our nearest neighbors has taken decades. Yet humanity does not tire of sending yet more probes into space. More information on these missions can be found at www.credit-suisse.com/bulletin.





conceivable speed would allow us to reach our nearest neighbor Proxima Centauri (situated 4.3 light-years away) after just 0.14 seconds. The journey time of nine light-years to Sirius, in the constellation Canis Major, would take 0.28 seconds, and the 400 light-years between there and Pleiades would be covered in just 12.6 seconds.

Our journey then continues past countless suns, many of which are larger than our own. It wouldn't be long before we could look back and see our own galaxy from outside – a gigantic spiral consisting of 200 billion suns. The area of space in which we would now be traveling is relatively empty. A tedious stretch of 19.3 hours then beckons before we reach our neighboring galaxy, the Great Andromeda Nebula, larger than our own galaxy and some 2.2 million light-years away. This contains around 400 billion suns. But this galaxy too we leave behind and head off at our unimaginable speed further into space.

After around two weeks of travel time we have moved some way beyond the Andromeda Nebula and our own galaxy, and can now see that both solar systems are part of a cluster of several dozen galaxies. And the further we travel away from this mass, the better we can see that even these galaxy clusters are themselves part of a family, a group of galaxy clusters or a so-called supercluster. When we get further still we can perhaps see structures that are even larger in scale.

When Would We Reach the “End” of the Road?

Even at this unimaginable speed we still have almost 14 years of travel before we finally reach the destination of our journey, the cosmic horizon. But now we suddenly realize that this affords us a view not all that different from our starting point. Here too we see the cosmic horizon once more, still almost 14 billion light-years away. Just like on the surface of the globe, we could always go further in the cosmos without coming up against a boundary; but that doesn't make it infinite.

This apparent paradox was one that clearly consumed the Italian priest, poet and philosopher Giordano Bruno (1548–1600), who was found guilty of heresy by the papal inquisition in Rome and subsequently burnt at the stake. It is from Bruno that we get the following quotation: “If one were to posit further that beyond the outermost celestial sphere lies the void, then this void would have an inner boundary yet no outer limit; and this is impossible to conceive.” Isaac Newton (1643–1727), the British astronomer, philosopher and civil servant, reflected on the unimaginable size of the cosmos and came to the following conclusion: “Space extends infinitely in all directions. For we cannot imagine any limit anywhere without at the same time imagining that there is space beyond it. If anyone now objects that we cannot imagine that there is infinite extension, then I agree. But at the same time I contend that we can understand it. We can imagine a greater extension and then a still greater one, but we understand that there exists a greater extension than any we can imagine.”

Our Universe – Just a Bubble Among Many

Traveling at a billion times the speed of light, we would therefore have “reached” the cosmic horizon after just under 14 years. It would take us the same amount of time to get back to Earth – leaving aside for the purposes of this flight of imagination the delicate problem of braking and acceleration. A number of cosmological models permit

the assumption that there are actually countless universes, just like an agglomeration of soap bubbles. Conceived of in this way, our enormous universe would actually be just a “bubble” among countless bubbles, and our “big” neighbor a universe of our universe.

When Time and Space Lose All Meaning

Ruminating on the fact that our sun is only a single star among 200 billion stars in our galaxy alone is enough to make any man feel rather isolated. But for the few people who have had the opportunity to contemplate our planet in this wider context from outer space, the opposite is actually the case. They recall undergoing an incomparable experience. From this perspective, the time and space that are so “normal” for the rest of us lose all meaning. The French astronaut Jean-Loup Chrétien recorded his impressions during an orbit of the Earth as follows: “We flew over the French Mediterranean coast at around six in the evening, more or less over Marseille. I lived in this area for more than 20 years and know it well. With a single glance I was able to take in France, Corsica, Sardinia, Italy and part of Spain, as well as Southern England and part of Germany. In other words, I had a pretty large area in my field of vision; yet I had not the slightest trouble in discerning even the smallest details of the area I had been walking around just a few weeks before. I smiled as I realized how small and relative the breadth of our planet actually is. Just a few seconds later we flew over the USSR!”

Such a dramatic change in perspective does more than just change the individual's perception of time and space, however – it also has an impact on their intellectual horizons. US astronaut Donald Williams expressed this as follows: “For those who have seen the Earth from space, and for the hundreds and perhaps thousands more who will do so in the future, the experience most certainly changes your perspective. The things that we share in our world are far more valuable than those which divide us.”

As Beautiful and Fragile as a Christmas Tree Bauble

Even more dramatically phrased is a description by US astronaut James Irwin: “The Earth reminded us of a Christmas tree ornament hanging in the blackness of space. As we got farther and farther away, it diminished in size. Finally it shrank to the size of a marble, the most beautiful you can imagine. That beautiful, warm, living object looked so fragile, so delicate, that if you touched it with a finger it would crumble and fall apart. Seeing this has to change a man, to make a man appreciate the creation of God and the love of God.” The German philosopher Immanuel Kant (1724–1804) had clearly experienced similar feelings when he jotted down the following thoughts: “The greatest concern of man is to know how he can properly fulfill his place in creation and to correctly understand what one must be to be a human being.” <

Credit Suisse

Business / Sponsorship / In the Community

Employee Donation Campaign

Help for Haiti

As emergency aid for the victims of the earthquake on January 12, 2010, in Haiti, Credit Suisse has made a donation of one million US dollars from the Disaster Relief Fund, half each to the American and Swiss branches of the Red Cross. At the same time, employees from throughout the company have been collecting donations for the destitute population in Haiti. By February 5 these donations had totaled 1.3 million francs. This contribution was then doubled from the Disaster Relief Fund, bringing the bank's overall donation to more than 5 million francs.

Museum of Fine Arts Berne

Edward Burne-Jones Exhibition in Berne

Following the success of the Giovanni Giacometti exhibition, preparations are in full swing in Berne for the exhibition to mark the centenary of the death of Albert

Anker, opening on May 7. But it is already well worth visiting the Berne museum for the current exhibition of the work of the London painter and draughtsman Edward Burne-Jones (1833–1898), which provides an insight into the hitherto understudied art of the late Victorian period.

Expanding in Central Europe

Poland, a Key Market

Following the launch of its Private Banking business there in 2009, Credit Suisse is further stepping up its presence in Poland and is supporting the country's entrepreneurs. The bank will offer securities trading and business analyses from its Warsaw base. Central and Eastern Europe are two of the most attractive growth regions for Credit Suisse. Poland – where Credit Suisse has had an Investment Banking presence since 1992 – is a key market, according to Michael Rüdiger, CEO Central Europe. Our goal is to take up a leading position on the WSE, Warsaw's stock exchange.



Since mid-January 2010, Credit Suisse has been strengthened by the arrival of American Pamela Thomas-Graham as head of Talent, Branding and Communication. Ms Thomas-Graham also becomes a member of both the Credit Suisse Group and Credit Suisse AG Executive Boards.

Museo d'Arte Lugano

Robert Mapplethorpe and Patti Smith in Ticino

From March 21 until June 13 the Museo d'Arte in Lugano – which Credit Suisse has supported as a partner since 1992 – will be playing host to the exhibition "Robert Mapplethorpe. La perfezione nella forma." Mapplethorpe, who died in 1989 aged just 43, was on a quest for sculpted perfection, and his works will be contrasted with unique pieces by other artists including Michelangelo, Pontormo

and Giambologna. Mapplethorpe's oeuvre also includes portraits such as that of the well-known rock singer Patti Smith. The two of them were friends, and Smith has therefore already agreed to give a concert on Wednesday, March 31, at the Palazzo dei Congressi in Lugano, an event also being sponsored by Credit Suisse.

www.mdam.ch

90th Anniversary of the Salzburg Festival

Rihm Opera and the Young Singers Project

The motto of this year's Salzburg Festival, which takes place from July 25 to August 30, is "Where God and Man Collide, Tragedy Ensues." A highlight will be the first performance of the opera "Dionysos" by Wolfgang Rihm on July 27. Credit Suisse, which has been a principal sponsor of the event for five years, will also support the Young Singers Project.

www.salzburgerfestspiele.at
www.credit-suisse.com/sponsoring



Bank of the Year

IFR Award In July 2009, Credit Suisse was awarded the title Best Investment Bank by Euromoney; now, at the start of 2010, the bank has also been voted the International Financing Review (IFR)'s Bank of the Year. "Credit Suisse AG can justifiably claim to have emerged from the biggest crisis in 80 years not just unscathed, but stronger, and with an even better reputation," commented the editorial team. They also praised the bank's client-oriented and capital-efficient strategy, as well as the way it has survived the financial crisis with outstanding key data, particularly the core-capital ratio and the high return on equity.

New York Philharmonic in Europe

In September 2009, Alan Gilbert was named the new music director of the New York Philharmonic Orchestra. Following an Asian tour, he and the orchestra toured Europe in January and February. You can also enjoy impressions of Europe/Winter 2010 via a Credit Suisse tour video.



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Alan Gilbert

1 The New York Philharmonic performs in the world's most renowned concert halls. Its European tour began in Palau de la Música in Barcelona in January. Pictured here is Alan Gilbert, the orchestra's new music director.

No other world-class orchestra tours as much as the New York Philharmonic, and yet music enthusiasts usually have to wait years to experience the orchestra live in concert. The New York Philharmonic, which began its Europe/Winter 2010 tour with concerts in Barcelona, Saragossa and Madrid, last visited Spain in 2001. The orchestra last performed in Zurich's Tonhalle in 1985, and is performing for the first time ever in Dortmund, Germany.

Getting the Show on the Road

The New York Philharmonic is eagerly anticipated around the world but the enormous logistical effort associated with touring is seldom given a second thought. The performances must be planned well in advance, including rehearsals, transports and accommodations. And shortly after each performance, some musicians bid their costly in-

struments good-bye as these are moved carefully in temperature-controlled conditions to the venue of their next performance. The musicians travel by rail when possible – to enjoy, for instance, the unique landscape between Barcelona and Saragossa or to experience the Chunnel between Paris and London.

The Europe/Winter 2010 is the second tour for the New York Philharmonic under its new music director, Alan Gilbert. In October, he debuted in Asia, including Japan, the birthplace of his mother, Yoko Takebe, who plays violin in the orchestra. The orchestra also traveled for the first time to Hanoi and Abu Dhabi. The tour and the performances under difficult conditions have helped Alan Gilbert and the musicians forge a closer bond, explains Alan Gilbert, who despite having grown up around the orchestra in his native New York and being a regular guest

conductor notes that the relationship is now entirely different. “The more time I spend with them, the more musical experiences we share, the more we get to know each other, and the way we communicate will continue to evolve and develop.”

A New Generation of Conductors

“I’m happy to have inherited the orchestra in wonderful musical shape,” states Gilbert. “That means that I can focus on what I like to experience when I make music anywhere, which is to make it the most meaningful, truest human experience.”

As a conductor from a younger generation, Alan Gilbert cultivates a somewhat different style compared to his predecessors. He is very communicative and fosters a collaborative, collegial atmosphere. For this reason, he believes it is essential that the orchestra understands just how much details matter >



2 A tour requires meticulous long-term planning. The orchestra's instruments must for instance be moved in temperature-controlled conditions. The musicians therefore travel by rail, whenever possible. 3, 4 Saragossa, located northeast of Madrid, was the tour's second stop, followed by Madrid.

to him and the extreme care he takes in realizing his vision of a piece. This does not mean imposing his personality on the music but rather staying as true as possible to the composer and his music. Gilbert explains: "I consider a conductor to be a vessel for channeling the music, for letting the music speak, but that is impossible unless you fully infuse the performance with your own point of view."

The Spark Catches Fire

Zarin Mehta, president and executive director of the New York Philharmonic, raves about the 25th music director: "Alan Gilbert has only just started his work with the New York Philharmonic. However, the spark between him and the orchestra has already caught fire and has produced many exciting and extraordinary musical experiences at home and on tour in Asia." And he adds: "He could now show different European audiences the respect he pays the orchestra's 168-year-old

tradition and the new life he breathes into its legacy."

Gilbert Long Active in Europe

"The European tour provided an excellent opportunity for me to present my partnership with the New York Philharmonic in the places where I spent a significant part of my career," states Gilbert, who led the Stockholm Royal Philharmonic Orchestra for eight years. "We performed masterpieces by great composers from different eras – from Haydn and Berg to contemporaries. The latest work was Magnus Lindberg's "EXPO," a work commissioned by the New York Philharmonic, which we premiered last September at our opening gala."

Lindberg – Hampson – Bronfman

Magnus Lindberg serves this season as the orchestra's composer-in-residence, and the New York Philharmonic was able to lure American baritone Thomas Hampson to the

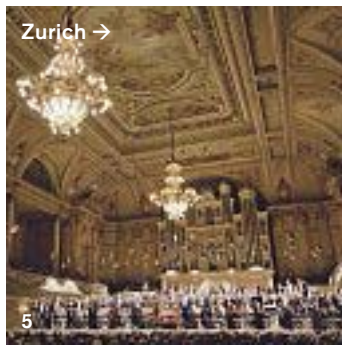
orchestra as its artist-in-residence. On the European tour, Hampson interpreted John Adam's "The Wound Dresser" and thus created a bridge from the old world to the new. Also appearing on the tour was the renowned pianist Yefim Bronfman, who performed regularly with the orchestra and played Prokofiev's "Piano Concerto No. 2" on the tour.

Impressions of the Tour Online

The Europe/Winter 2010 tour was a success, as emphasized by Zarin Mehta. Classical music lovers in Spain, Switzerland, Germany, France and the United Kingdom surely regretted it, if they were not able to buy tickets. However, the Web site of the New York Philharmonic always offers several opportunities to listen to and watch the orchestra's concerts and tours with hindsight.

Andreas Schiendorfer (text) and Joy Bolli (video)

→ An interview with Alan Gilbert and a video about the orchestra's European tour can be found on www.credit-suisse.com/bulletin.



Zurich →

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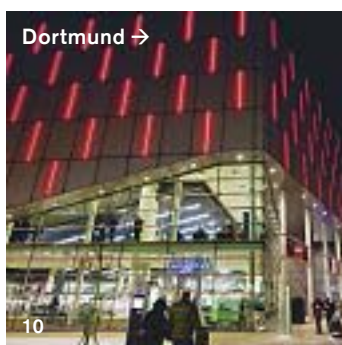
Frankfurt →

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Cologne →

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Dortmund →

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Paris →

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London

5, 7 The orchestra also performed at the Tonhalle in Zurich. 6 Credit Suisse Chairman Hans-Ulrich Doerig in talks with the New York Philharmonic's Executive Director Zarin Mehta. 8–12 Further concerts were held in Germany, France, Switzerland and the United Kingdom.

Actively Promoting Young Talent in Asia

The Credit Suisse Emerging Artists series was held for the second time at the Hong Kong Arts Festival. The event saw performances from American soprano Simone Osborne, the Finnish Meta4 Quartet and Germany's Freiburger Barockorchester. The Credit Suisse Artist Residency Award was presented at the President's Young Talents exhibition, staged at the Singapore Art Museum.

The traditional commitment of Credit Suisse to culture and sports has been extended in recent years to include the promotion of young talent. The founding of the Davos Festival by Michael Haefliger in the summer of 1986 represented an initial milestone in this regard. With the help of Credit Suisse, a platform for young, highly talented musicians from around the world was established from scratch in Davos. In 1993, a further commitment was made – this time to sports and the promotion of young, talented footballers through the establishment of a partnership with the Swiss Football Association.

Asian Cultural Sponsorship Since 1999

In Asia, Credit Suisse's cultural sponsorship initiatives date back to 1999 – the year in which the group first sponsored the Beijing Music Festival. When it comes to promoting young talent, there are two partners in particular which deserve special mention: the Singapore Art Museum (SAM) and the Hong Kong Arts Festival. Since 2007, the SAM has played host to the "Innovation in Art" in

partnership with Credit Suisse. This series of events serves to promote contemporary artists, as Tan Boon Hui, the director of the Singapore Art Museum, confirms.

At the end of 2009, a substantial prize of 50,000 Singapore dollars (approximately 40,000 Swiss francs) was awarded for the first time: At the President's Young Talents exhibition, the Singapore Head of State, President S. R. Nathan, awarded the Credit Suisse Artist Residency award (PYT) to the Vertical Submarine artist collective. This prize will enable young artists Joshua Yang, Justin Loke and Fiona Koh to set up a studio in Pasaguero, Mexico, a cultural melting pot of international renown. On behalf of Credit Suisse, Vice-Chairman of Asia Pacific Lito Camacho expressed his hopes that these artists will continue to develop in Pasaguero and that this prize will represent a milestone in the promotion of culture in Singapore.

At the same event, Donna Ong was voted the winner of the People's Choice Award for her work entitled Dissolution. Twardzik Ching Chor Leng and Felicia Low were also recog-

nized for their contributions to Singapore's contemporary art scene.

Exchange Between West and East

Also in 2009, Credit Suisse launched an international talent promotion initiative as part of the Hong Kong Arts Festival: the Emerging Artists Series, which promotes artists on the brink of an international breakthrough. Last year, this event featured three Asian artists – bass baritone Shenyang, cellist Trey Lee and dancer/choreographer Dick Wong – who went on to acquire considerable repute in the West.

In 2010, the opposite happened and western artists were given the opportunity to exhibit in Hong Kong and generate new impetus at the Festival. On March 11, American soprano Simone Osborne performed songs by Strauss, Liszt and Schumann. On the following day, the Finnish string quartet Meta4, comprising Antti Tikkanen, Minna Pensola, Atte Kilpeläinen and Tomas Djupsjöbacka, took to the stage. The talented group not only performed works penned by the Finnish master Sibelius, but also by his compatriot Verner Pohjola.

The Emerging Artists Series was brought to a close on March 13/14 by the Freiburger Barockorchester under the baton of renowned conductor René Jacobs, including solo performances from Sebastian Wienand (piano forte), Teunis van der Zwart (horn) and Gottfried von der Goltz (violin).

Andreas Schiendorfer

- www.singart.com
- www.singaporeartmuseum.sg
- www.hk.artsfestival.org



Part of the Society "Our partnership with the Hong Kong Arts Festival underlines our commitment to society in the regions in which we work," explains Kai Nargolwala, CEO of Credit Suisse Asia Pacific. This may involve philanthropic projects or organizing events with leaders that encourage public dialog, as well as cultural sponsorship. "We are convinced that artistic activity is a crucial part of a properly functioning society." Our partners in Asia are the Beijing Music Festival, the Shanghai Museum, the Taipei Fine Arts Museum, the Hong Kong Arts Festival, the Bangkok Symphony Orchestra and the Singapore Art Museum.

New Financial Rules Are Urgently Needed

A new global financial framework must be created, regulators said during the World Economic Forum in Davos. Not only financial markets are in dire need of new and clear rules, so is the alternative-energy sector.

A discussion of which policy reforms will best support responsible and sustainable economic prosperity could not be a more timely, said Paul Calello, the CEO of Credit Suisse's Investment Bank, at a panel discussion organized by Credit Suisse at the sidelines of the World Economic Forum in Davos. "We must create a robust and global financial framework, substantially different from the system that we have been operating in over the last couple of years. It's an illusion to believe that we can get away without remarkable changes," said Philipp Hildebrand, the chairman of the Swiss National Bank, as he opened the debate. A strong US engagement is necessary, and their renewed input into the debate (through the Obama administration's bank plan announced on January 21) is very much welcomed, he said. "The proposal is worth thinking about, even if it does not offer enough details on how it will be carried out," said Laura D'Andrea Tyson, a member of US President Obama's Economic Recovery Advisory Board. "It is absolutely clear that a far-reaching fundamental reform of the financial system is needed in terms of rules and regulations, but also in terms of the culture and behavior of the market participants. It is not at all clear that the majority of the industry has grasped that fact," said Hector Sants, the CEO of the Financial Services Authorities (FSA), the British market regulator. It must be a collaborative effort between the regulators and the industry, he added.

Some Differentiation Needed

"We must recognize that different countries have different circumstances and different banking models. So there needs to be some differentiation within this global framework," Hildebrand stressed. "It is crucial to find a way bringing these different needs into a robust framework, so that we can preserve the market-based system, preserve a system of privately operating banks," he said. The final calibration of this global framework, with

regard to capital levels, the precise definition of capital, on how to deal with too big too fail, is underway with a number of proposals on the table, Hildebrand said. But this much-needed fundamental reform of the financial system takes time. "If we worked faster, reform would be sloppy. If we don't do enough, the costs will be enormous."

Capital Being Built Up

Banks are currently building up their capital. "It is now important to ensure that the earn-

ings they generate do not all end up in compensation, dividends and share buyback policies," Hildebrand warned. The low interest rate environment and abundant liquidity have been tremendously supportive of rapid earnings growth. But banks need to be disciplined about their use and continue to rebuild their capital base, and not treat them as normal earnings, he stressed. "Regulators need to offer a framework where banks can operate, be properly capitalized and managed in a sustainable way. It is our job to facilitate that environment. Regulators are not here to run the banks, but to give a framework," Sants underlined.

Disaster Just Avoided

We were on the verge of disaster and the amounts spent to avert the total collapse of the world economy were about 25 percent of GDP, according to Hildebrand. We must give the monetary, fiscal and regulatory authorities some recognition on how they col-



1 Credit Suisse each year sets up a provisional facility in Davos during the World Economic Forum (WEF) to be able to meet global stakeholders. 2 Eric Varvel, CEO of Credit Suisse's Europe, Middle East and Africa region, was the host of one of the two lunch panels held during the WEF. Paul Calello, not pictured, was the other host. 3 Financial regulators Laura D'Andrea Tyson, a member of US President Obama's Economic Recovery Advisory Board, Philipp Hildebrand, the chairman of the Swiss National Bank, and Hector Sants, the CEO of the Financial Services Authorities (from left to right) in a debate about regulatory reforms on the financial markets.

lectively worked to save us from a much worse outcome, on how they helped stabilize the system, and facilitated a recovery, in a remarkably short period of time, D'Andrea Tyson concluded.

Climate Change Issue

Making progress on carbon emissions – curbing them, while driving economic growth – is right now one of the most pressing global issues, the CEO of Credit Suisse's Europe, Middle East and Africa region, Eric Varvel said during another panel discussion held during the WEF. Alternative energies, increasingly supported by government subsidies, are becoming more important than ever, he added. "Each generation consumes 50 percent more than the previous one. The present development is not sustainable, given we live in a world with finite natural resources," the Chairman of EDF Energies Nouvelles, Paris Mouratoglou, said. "How can we reconcile the depletion of resources and the climate change issue with economic growth?" he asked.

Energy Savings, Renewables Are Key

The world needs to find alternative solutions to improve energy savings and develop renewable energy sources, Mouratoglou said. Taxes, certificates and cap-and-trade mechanisms, including the real price of CO₂ emissions in oil products manufactured worldwide, are important steps. Massive investments in research and development programs in clean technologies are necessary. So is the creation of efficient markets and opportunities for renewable energy and energy savings, Mouratoglou said. Such measures will lead to breakthroughs, help increase volumes, lead to economies of scale and in turn reduce costs. "I'm convinced that renewable energy sources such as wind, solar and wave energy can be competitive within the next 10 to 15 years. Alternative energies will not be an option, but mandatory."

Call for Clear Rules

The US Energy Information Administration estimates that 1 trillion dollars a year need to be invested in renewables over the next 20 years, said Shaun Kingsbury, a partner at the private equity firm Hudson Clean Energy Partners. "This amount will primarily come from private and not from public funds. What governments need to focus on is to set clear policies." Political will needs to be trans-

lated into rules and regulations; otherwise there will be no investments. Investors are ready to take development and operational risks, but not revenue risks. "Unless we can produce risk adjusted returns, capital will not flow into renewables. Investment firms will be putting their money somewhere else," Kingsbury warned. Governments setting up support mechanisms to make the cost of capital better for private investors will also help to drive further investments in the alternative-energy space, he added.

Or Collapse of System Ahead

"Today's energy model is unsustainable. Energy demand is growing exponentially, which will lead to a very fierce competition for resources and could lead to its collapse," said Ramón de Miguel, an advisor to the Chairman of Iberdrola. Measures stimulating energy efficiency and the decarbonization of the energy sector need to be supported. "Investments won't happen if there is no political support and a stable regulatory framework," de Miguel said.

Capital Available, Jobs Created

"Climate change is as we all know a significant threat to our economies, but is also a great opportunity to invest," Kingsbury said. The clean-technology sector employs some 770,000 people in the US, a mere 0.5 percent of total employment. But the sector's annual growth rate in terms of job creation has exceeded 9 percent in recent years, compared with a growth rate of just above 3.5 percent in terms of total employment. It is estimated that about 200 billion dollars will be flowing into the green economy in 2010, compared with 100 billion last year. Global investments in renewables dropped in 2009, with US investments down 25 percent and Europe's down 15 percent. Chinese investments in renewables rose by 25 percent. "China is not only the world's largest polluter. It invested 27 billion dollars into renewables last year, making it the world's largest investor in alternative energies," Kingsbury said.

Cost Curve Coming Down

The cost of renewable energy sources is coming down. "We're getting there. There is still opportunity to go down the cost curve, to make wind and solar energy competitive against a carbon price," Kingsbury said.

Dorothee Enskog

Masthead

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Certified WEMF circulation in 2009

145504

ISSN registration

ISSN 1662-4572

Printing

NZZ Fretz AG / Zollikofer AG

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116th year of publication

(Five issues per year in English, German, French and Italian). Reprinting of texts permitted with acknowledgement of source ("Credit Suisse Bulletin").

Changes of address

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223 Years Old and Celebrating a Centenary

In the same vein as the town hall and the schoolhouse, the Kunsthaus was to be a meeting place for all – functioning as both a museum and an art gallery: The Kunsthaus Zurich was inaugurated on April 17, 1910. In 2010 – its centenary year – the Zürcher Kunstgesellschaft is setting the course for the next 100 years.

1787

The US adopted its Constitution. Gottfried Wilhelm Leibniz became the first ordinary German citizen to have a memorial erected in his honor in Hannover, and King Louis XVI attempted to convince the French aristocracy to give up its tax-exempt status. By this stage, however, there was no holding back the revolution.

It was in this year that Switzerland's oldest art association was founded – one which now boasts some 20,000 members, making it the biggest in Switzerland. The exclusive "Künstlergesellschaft" (artist association) began collecting in 1794. To begin with, it compiled a "MalerBuch" (book of paintings). Each member donated either a drawing of their own or a purchased piece. The Zurich artists were held in very high regard internationally. Johann Heinrich Füssli (alias Henry Fuseli) caused quite a stir in London and was admitted to the Royal Academy of Arts in 1788. The painter and poet Salomon Gessner also achieved worldwide acclaim, though Goethe found it difficult to warm to his artwork. In 1818, the city of Zurich presented the Künstlergesellschaft with the "Gessnerische Gemälde-Cabinet" on permanent loan, thus laying the real foundations for the Kunsthaus collection. The exhibition "Salomon Gessner. Idyll in an Obstructed Landscape" reflects this. Tribute was paid to Fuseli in the 2005/2006 exhibition "The Wild Swiss."

1910

The US resolved to annex Spitsbergen. In Germany, the board game of ludo was launched on the market, and Gustav Mahler's "Symphony of a Thousand" (Symphony No. 8) was performed for the first time. In Munich – not in Vienna or New York, where Mahler conducted the New York Philharmonic. Montenegro was proclaimed a kingdom. And the "Bureau International Permanent de la Paix" in Berne was awarded the Nobel Peace Prize. By this time, however, the nationalist strug-



An artistic roadmap to guide you through the centenary year: www.kunsthaus.ch.

gle for power was well under way and the great war was looking inevitable.

Meanwhile, in Zurich, the Kunsthaus was opened on a plot of land (part of the Landolt estate) on Heimplatz. It was neither "museum" nor "art gallery," as the architect Karl Moser pointed out, but both. The name "Kunsthaus" (house of art) consciously reflects its democratic aspirations and wish to bring art to a broad public. The collection of the Zürcher Kunstgesellschaft had by this time achieved national acclaim. From 1880 to 1914, the art scene was shaped by artists such as Arnold Böcklin, Albert Anker, Franz Hodler, Giovanni Segantini, Albert Welti, Adolf Wölfli, Félix Vallotton, Cuno Amiet, Augusto Giacometti, Adolf Dietrich, Paul Klee, Hans Arp and Sophie Taeuber-Arp. Alberto Giacometti, whose works feature prominently in today's collection, was not born until 1901. His father, Giovanni, was well respected. The Kunsthaus has dedicated its latest 2010

exhibition to Karl Moser. Born 150 years ago, he was the architect who first extended the Kunsthaus back in 1925.

2010

The International Year of Biodiversity and the International Year for the Rapprochement of Cultures. Essen/Ruhr in Germany, Pécs in Hungary and Istanbul in Turkey have been made the European Cities of Culture. At the beginning of the year, the 828-meter Burj Khalifa (Khalifa Tower) was inaugurated as the tallest building in the world. Just eight days later, an earthquake devastated Haiti and rocked the world.

And where does this leave the Kunsthaus Zurich? The institution continues to offer a careful mix of popular classics (Bührle collection, Pablo Picasso) and avant-garde works (Adrian Paci, Thomas Struth), aiming to reach its target of 300,000 visitors.

2015

To the surprise of many, the United Nations' eight Millennium Development Goals are achieved, including a 50-percent reduction in the number of people living below the poverty line. And despite global warming, the widely prophesized apocalypse remains unfulfilled. Thank goodness. The Gotthard Base Tunnel is opened, making it the longest tunnel in the world.

More than 400,000 visitors now visit the extended Kunsthaus. We'll come back to star architect David Chipperfield's very promising project during the centenary year.

Andreas Schiendorfer

→ **Open Day on April 17 (free entry).**

Special exhibitions:

Salomon Gessner (until May 16);

Bührle Collection (until May 16);

Adrian Paci (June 4–Aug. 22);

Thomas Struth (June 11–Sep. 12);

Carl Wilhelm Kolbe (Sep. 10–Nov. 28);

Pablo Picasso (Oct. 15–Jan. 30);

Karl Moser (from Dec. 17)



Built 100 years ago, the Kunsthhaus Zurich offers a captivating mix of traditional and modern art that attracts numerous visitors.

Habitat for Humanity: Working Together To Fight Housing Need

Volunteering to tackle the world's housing problems can make a real difference, as the work of Habitat for Humanity shows. Now Credit Suisse has formed a global partnership with the charity and is encouraging its staff to join in.

"You may never have envisaged yourself as a construction site worker and you may not even see yourself as much of a home improvements expert, but that shouldn't put you off volunteering to help build housing for those less well off than yourself."

That's the message from Habitat for Humanity to those looking for a practical way to make a difference. The nonprofit charity was created in 1976 by US entrepreneur Millard Fuller and his wife Linda, inspired by their experience of poor communities in the US state of Georgia and central Africa. Since then, Habitat has built up a presence in almost 100 countries, building or renovating more than 300,000 homes in 3,000 communities as part of the fight to tackle the world's housing crisis. Central to the success of the Christian charity has been the encouragement of volunteers to work on housing projects alongside the future owners and experienced contractors, who provide expertise and a guiding hand to novices.

A Real Sense of Accomplishment

"A volunteer can start the day never even having used a hammer, but by the end of the day they will be feeling a real sense of accomplishment," says Joe Mulvey, director of Corporate Development at Habitat for Humanity International. "In some cases, the entire frame of a house can be built in a day using volunteer labor," he adds. The projects can involve anything from improvements to modest rural dwellings to the construction of entire apartment blocks, and they may be located virtually anywhere in the world, in-

cluding Latin America, the former Soviet Union and the Asia-Pacific region, as well as the poorer areas of the US and Europe.

Owners Also Help Out

The Habitat model does not mean giving people something for nothing. The owners are expected, wherever possible, to work on their new homes themselves – gaining so-called "sweat equity" in the process – and they need to be in a position to pay back a no-profit mortgage or home improvement loan.

This all helps give the owners a stake in the success of the venture. Often projects encompass housing for several families in a community, in which case the owners can support each other, both in terms of labor and finance, to ensure everyone participates in partnership.

The nature of Habitat projects makes them ideal for volunteers who can spare a day here or there and especially for those who can organize a team of friends or colleagues to bring with them.

That approach also works well at the company level, and its success encouraged Credit Suisse to launch a global volunteering partnership with Habitat International in early 2009. This not only provides an avenue for volunteering, it also means Credit Suisse makes a crucial contribution to Habitat projects through financial sponsorship, effectively providing the up-front funds for materials to carry out home-building.

The partnership builds on the company's long-established ties with the charity in the

US, where Credit Suisse volunteers have worked with Habitat on projects in the poorer areas of New York and other cities, as well as on the massive task of home rebuilding in New Orleans after Hurricane Katrina hit in 2005.

Lalita Advani of Credit Suisse says working with Habitat provides a new way to encourage volunteerism, bringing it to more of the company's offices around the world, rather than just the larger ones with infrastructure to organize charity work already in place. Credit Suisse just provides logistical and funding support, the offices do all the organizing themselves. "Once people have experienced volunteering, it doesn't take much for the whole process to become more organic," she says.

650 Volunteers in the First Year Alone

In 2009 alone, as of November, some 650 Credit Suisse employees around the world had volunteered with Habitat. These included staff from offices where there had been no prior history of volunteering, such as Bangkok, Buenos Aires, Mexico City, Seoul, Tokyo, Mumbai, Pune, Kuala Lumpur and Wrocław in Poland.

Typically, employees work with Habitat for a day at a time, either during the week, or – if it is more convenient, or if they want to do more – over a weekend. All staff are entitled to at least one business day off every year to do charity work. "Credit Suisse's policy to encourage volunteerism with paid time off is definitely a 'best practice' among companies," says Habitat's Mulvey. For Credit Suisse in

Mexico, where work with Habitat has taken off in the past few months, volunteering has entailed getting teams of 20-plus people together to travel for two or three hours from Mexico City to do eight-hour shifts on projects in Puebla and Hidalgo states. That may sound arduous, but the tangible results of these endeavors make them worthwhile, according to Raul Toscano, Credit Suisse's head of Human Resources for Mexico and Latin America, who has been coordinating volunteering in the country. In Hidalgo, for

example, volunteers helped lay concrete floors in the houses of people who were used to living on earthen floors – that reduced the chances of disease propagation at a stroke, as did the installation of better sanitation in their new homes.

New Perceptions of Social Responsibility

"After these two volunteering trips, our employees are starting to get a different perception of their social responsibility and they want to participate more actively," Toscano

says. "In some cases, employees have been in touch to tell me about families they know that might benefit from this kind of effort."

Habitat for Humanity has set a goal of increasing the number of families it serves from the current 60,000 per year to 100,000 by 2013. The sort of enthusiasm being shown by Credit Suisse employees and all the other volunteers around the world is helping to meet that target. **Ian Lewis**



1 Anyone who has volunteered is also entitled to pose for the group picture with a good conscience. 2 Doing voluntary work promotes team spirit. 3 Fighting the housing need stone by stone. 4 Habitat for Humanity – here in Japan. 5 Using a trowel instead of a mouse. 6 A construction site requires concentration too.

Success in the Fight Against Movement Disorders

The fourth Empiris Award for Research in Brain Diseases goes to Susanne A. Schneider. As part of her work at the Neurology Department of the University of Lübeck in Germany, Ms Schneider is researching the genetic forms of dystonia. She received the award in January 2010 from chairman of the jury Dieter Imboden, who heads the Research Council of the Swiss National Science Foundation.

Susanne A. Schneider leads an active life. She likes to travel in her spare time, discovering new places and meeting new people. She also enjoys the opera and visiting museums. But it is the four years spent at the renowned Institute of Neurology in London's Queen Square that have taken her on an altogether different journey – into the world of movement disorders. As Schneider herself explains: "Along with strokes, cramp attacks, epilepsy and headaches, movement disorders are the day-to-day elements of a neurologist's work. This group of conditions is characterized by either too little or too much movement. The most widely known example is Parkinson's disease. In addition to restricted movement, patients suffering from this disease – which mainly affects people aged 60–65 or over – also experience symptoms such as a tremor in the hands and muscle stiffness."

Apart from the movement disorders that are associated with increasing age, there are others that have a genetic link, and it is research in this largely uncharted territory to which Susanne A. Schneider, a trained medical scientist, is committed. That is why she has been working in Germany again for more than a year now – this time at the University of Lübeck, where the Neurology Department



Susanne A. Schneider with (from left) Dr Christian Baumann, Neurology Department of University Hospital Zurich, and jury members Professor Amedeo Cafilisch and Professor Dieter Imboden.

houses a center for genetic movement disorders. Working under Professor Christine Klein, Schneider and her colleague Ana Djarmati have scored some inspirational successes in an amazingly short period of time – most notably with the discovery in spring 2009 of the first patients in Europe with DYT6 dystonia.

After picking up the 2009 David Marsden Award from the European Dystonia Federa-

tion, Schneider has received the Empiris Award for Research in Brain Diseases.

Dystonia? Never Heard of It

While we have so far talked about DYT6 dystonia as if it is commonplace, it must be said that this disease is relatively unknown among the general public. "Dystonia literally means 'wrong tension,' which describes the effect it has on the affected muscle groups. The different forms of dystonia are characterized by sustained contraction of muscles leading to distorted postures," explains Barbara Gygli Dill from the Swiss Dystonia Association. "In contrast to Parkinson's disease, dystonia is not degenerative, which means nerve cells do not progressively die out, and it is fairly rare for there to be organ damage. That's the good news. The bad news is that, while it is afar from a rare condition, all too often dystonia still goes undetected or is wrongly diagnosed. This is due in part to the many forms of the disease that exist."

The muscle cramps are often accompanied by almost unbearable pain, which can lead to serious sleep disorders. This in turn has a significant impact on the patient's ability to work – both professionally and in a domestic environment. Their sphere of activity is greatly restricted and, because the facial symptoms of dystonia can be misinterpreted by those who are unaware of the sufferer's condition as mental illness or some form of mental disability, in many cases the patient enters into a state of "voluntary" isolation. According to Barbara Gygli Dill, "all too often these burdensome symptoms lead to severe depression, particularly when they are compounded by financial problems resulting from the loss of the ability to work or high treatment costs."

Research Benefits Dystonia Patients

Dystonia, which is thought to be caused by a functional disorder of the basal ganglia, occurs in different forms – namely etiological (primary or secondary forms), age-related (before and after the age of 26), or with various topical symptoms (focal, segmental, multifocal and generalized). Whereas at one time it was assumed that around 40 people in every 100,000 were sufferers, because of the difficulties associated with diagnosis it is thought that this figure could be far higher – at least among the over 50-year-olds.

Even though there is currently no cure for dystonia, it is at least possible to allevi-

Year	Award Recipient	Nationality	University	Specialist Subject
2009	Susanne A. Schneider	German	Lübeck	Dystonia: DYT6 gene
2008	Anat Frydman-Marom	Israeli	Tel Aviv	Alzheimer's: Artificial peptide
	Carsten Sachse	German	Jena	Alzheimer's: Amyloid fibers
2007	Eline Vrieseling	Dutch	Basel	Nerve cells in the spinal cord
	Marlen Knobloch	Swiss	Zurich	Alzheimer's: Peptide deposits
2006	Mathias Heikenwälder	Austrian	Zurich	Prions in BSE-infected cattle



Susanne A. Schneider captivated the many members of the Neurology Department staff present with her enlightening explanations of the complex subject matter of dystonia.

ate the symptoms. So the earlier the correct diagnosis can be made, and therapy optimized, the better. Research successes such as those achieved by Susanne A. Schneider are therefore gratefully acknowledged by sufferers, even when they may not necessarily involve their particular variant of dystonia. "At present, we know of 20 different monogenic forms of dystonia," says Schneider. "Of these, fewer than half of the genes responsible are known and verifiable by a corresponding test. And we have even less idea of what their function is. So we are still a long way from meeting our goal, especially given the likelihood that further forms of dystonia will be found."

Women in the Majority

The Empiris Award for Research in Brain Diseases was awarded at the Neurology Department of University Hospital Zurich, with a eulogy given by the head of the department, Michael Weller. Chairman of the jury Dieter Imboden, in his capacity as president of the Research Council of the Swiss National Science Foundation, stressed the importance of such awards in promoting a new generation of researchers.

There was great interest among the numerous members of the department's staff and students present and, not surprisingly, these included many women. Accordingly, jury member and prize initiator Amedeo Caflisch, professor of Computational Structural Biology at the Department of Biochemistry of the University of Zurich, was able to assert enthusiastically that although women remain underrepresented in the leading research positions, at least they currently account for two-thirds of the recipients of the Empiris Award. **Andreas Schiendorfer**

The Empiris Foundation Founded by Credit Suisse, the Empiris charitable foundation offers clients of Credit Suisse, Clariden Leu and Neue Aargauer Bank a convenient opportunity to make a charitable contribution to scientific and research projects, as well as social and humanitarian schemes. Credit Suisse bears the majority of the foundation's administrative and management costs. A prominent board of trustees headed by former Federal Councilor Flavio Cotti selects suitable projects for the foundation to fund. So, for example, the Alzheimer's fund is financing a project run by the Sonnweid foundation in Wetzikon, which enables people with dementia to activate their senses through cooking. This is made possible with the help of the "Kochboy," a mobile one-hob cooker to which various cooking utensils can be added, but is both user-friendly and safe. Another beneficiary is the Institute of Archeology and Antiquity at the University of Lausanne, which is receiving support for a project excavating and restoring mosaics in the early Christian church at Derecik in Turkey. The church dates back to the fourth century AD and is an important testimony to the transition from Late Antiquity to the Byzantine Era. The team involved was able to present the first results of the project to an international colloquium in Bursa in 2009.

→ More information can be found at www.empiris.ch, www.dystonie.ch and www.dystonia-europe.org.

Nicolas Altstaedt Honored at the Lucerne Festival for His “Short Life’s Work”

27-year-old cellist Nicolas Altstaedt has won the Credit Suisse Young Artist Award for 2010. As well as prize money of 75,000 Swiss francs, the award includes a chance to perform with the Vienna Philharmonic conducted by Gustavo Dudamel at the Lucerne Festival on September 17.



Nicolas Altstaedt will delight audiences at the Lucerne Festival. A detailed portrait of him can be found at www.credit-suisse.com/bulletin.

Ever since the 1870s, musical history has been written at Vienna's Musikverein – home of the city's Society of Friends of Music. Arguments between the supporters of Johannes Brahms and Anton Bruckner raged here for years, and this was where Gustav Mahler experienced the first triumphs of his career as well as a degree of disdain for his works that would be unimaginable today, prompting him to leave his beloved Vienna for New York in 1907. Here too, since 1999, the Credit Suisse Young Artist Award has been presented – dubbed by the “Frankfurter Allgemeine Sonntagszeitung” as an award that is “absolutely peerless as a prize for young talent in the world of classical music.” Rather than honoring a promising musical talent, in fact, this prize pays tribute to an artist for “his short life’s work,” to quote jury chairman Michael Haefliger, director of the Lucerne Festival.

A Cellist Wins for the Third Time

By definition, therefore, no winner of this prize can come as a complete surprise. We only have to think of the last two winners, the viola player Antoine Tamestit (2008) and pianist Martin Helmchen (2006), whose names were already very familiar on the musical scene. Without doubt, however, none of the numerous media representatives attending the event had tipped Nicolas Altstaedt to win. A cellist – for the third time – after Quirine Viersen (2000) and Sol Gabetta (2004). Such an unusual choice provides clear evidence of the independence and expertise of the five-member jury. “After an hour-long recital in the Brahms Room of the Society of Friends of Music and an interview with the artist that enabled us to round out our picture of his personality, we opted unanimously for Nicolas Altstaedt,” Michael Haefliger explained.

Incidentally, Nicolas Altstaedt also owes some of his success to his brother Christoph, his senior by two years and a talented pianist who chose a career as a conductor. In Vienna, he accompanied Nicolas in the “Concerto for Cello and Orchestra” by Witold Lutoslawski (written in 1969/70), playing from the score in a rendition that would make a fine CD recording.

Talking of CDs, Altstaedt – who has already released a number of recordings – voiced an unconventional wish. “I would like to record some works for cello and piano by the Munich composer Wilhelm Killmayer that



1 Fritz Gutbrodt, chairman of the Credit Suisse Foundation, emphasized the importance of this prize in the context of Credit Suisse's efforts to promote young talent. 2 Barbara Higgs of the Lucerne Festival in conversation with Nicolas Altstaedt. 3 Group picture with the jury and prizewinner (from left): Thomas Angyan, director of the Vienna Society of Friends of Music; Roland Altmann, Vienna Philharmonic; Nicolas Altstaedt; Michael Haefliger, director of the Lucerne Festival; Peter Haggmann, Neue Zürcher Zeitung; and Urs Frauchiger, author of many musical publications.

are not available on disc,” said the cellist, who was born in Heidelberg and now lives in Berlin. “If need be, I shall use part of my prize money to do that.”

A Pupil of Pergamenshikov and Feltz

Boris Miroslav Pergamenshikov, who died in 2004, had a predominant influence on Nicolas Altstaedt, one of his last pupils. “He shaped the course of my life,” the cellist said. Altstaedt is currently working with Eberhard Feltz, with whom he also spends much time discussing music.

Nicolas Altstaedt will play works by Ludwig van Beethoven and Elliot Carter on August 24 at the next Lucerne Festival. In fact, Michael Haefliger has already invited Altstaedt to Lucerne, where he will appear in the “Début” series, before the prize is awarded. The program for the prize concert with the Vienna Philharmonic (represented on the jury by Roland Altmann) has not yet been decided,

but it will take place on September 17 under the baton of Gustavo Dudamel.

The choice of the cellist as winner was undisputed, as were the outstanding qualities of the other entrants in the competition. “We could easily have imagined awarding the prize to any of them. It is encouraging to see such a strong and broad base of young musical talent at present,” according to Thomas Angyan, director of the Vienna Society of Friends of Music. “We really ought to introduce a two-stage award procedure and give appropriate recognition to those who are nominated for this ‘Oscar’ for young musical talents.”

The jury, which includes Urs Frauchiger and Peter Haggmann, as well as Toni J. Krein, head of Cultural Sponsorship at Credit Suisse, and Fritz Gutbrodt, director of the Credit Suisse Foundation, will have to consider ideas of this sort when they take stock after 10 years of the Credit Suisse Young Artist Awards. **Andreas Schiendorfer**

Working Together With the Bonita Trust of Gibraltar

Developing Social Talents

“After I’ve completed my course I’d like to do social work in Gibraltar,” says 17-year-old Lathan Norton. “What I’d really like to do is set up an anti-mobbing club.” Norton has just completed his second year on the “Future Leaders in Philanthropy” (FLIP) program, which is run jointly by the Bonita Trust of Gibraltar and Credit Suisse. Some 20 students take part in this program. “FLIP is another forward-thinking project where we look to plant the seeds for the future of our community,” explains Bonita Trust CEO, Moe Cohen. “The students in the program have been excelling in both their philanthropic work and investment management. This is most encouraging and only the beginning. We want to give talented young people a proper appreciation of the meaning of social responsibility. They are introduced to all aspects of social work. They learn, for example, how charitable organizations are financed.” Trino Cruz from Credit Suisse in Gibraltar is also extremely pleased with the program: “By combining social commitment with investment



training we have been able to offer the students a valuable and exciting project.” On the one hand, the students have to find out about a local charitable organization and write an essay explaining how it works, how it markets itself, and how it collects and manages donations. On the other hand, the participants are given five million virtual euros which they have to invest in securities with the help of a Credit Suisse investment advisor. In the second year, students select another charity for which they then plan and implement an actual fund-raising project. In the end, the amount that they raise is doubled by the Bonita Trust. “In this way we want to channel 40,000 British pounds to charities, half of which will have been raised by students,” says FLIP project manager Ros Astengo.

Julia Hancock and Andreas Schiendorfer

Apprenticeships Initiative

The Main Concern Is to Combat Youth Unemployment

The Worry Barometer published in December 2009 showed that unemployment – and in particular youth unemployment – is the issue that causes Swiss citizens the greatest concern by far. Although unemployment levels are a little lower than in most other countries, youth unemployment reached a worrying high of 5.4 percent in Switzerland at the end of December. Credit Suisse has now reacted. In the next training cycle, Credit Suisse will create an additional

5.4%

Youth unemployment in Switzerland in December 2009

150 apprenticeship places, an increase of around 25 percent. This not only demonstrates the bank’s commitment to its responsibilities as a corporate citizen but also strengthens its position in the Swiss market. In addition, Credit Suisse together with the Swiss Venture Club is providing SMEs and young entrepreneurs with a total of 100 million Swiss francs of venture capital, not least with a view to creating new jobs. And finally, Credit Suisse intends to provide 30 million Swiss francs toward training programs for nonprofit organizations in coming years and is currently working with competent partners to create a plan for achieving this. schi

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Initiative from ICTswitzerland

New IT Apprenticeships

The Information Technology and Communications (ITC) sector has grown at a staggering pace over the past 30 years worldwide. Depending on whom you ask and how they define the term, there are between 120,000 and 220,000 IT specialists in Switzerland alone. And 5,000 new employees should be joining their ranks every year – far more young professionals than are currently being trained in this area. In other words, despite high levels of unemployment Switzerland has an annual shortfall of as many as 2,500 IT specialists. ICTswitzerland, the umbrella association for IT professionals in Switzerland, has therefore launched an initiative with the aim of creating more than 1,000 new apprenticeship places by 2015 – in particular through the “Foundation for IT Education and Training in Switzerland.” Credit Suisse, which itself employs more than 4,000 IT professionals in Switzerland, is ready to support this initiative by providing up to 10 million Swiss francs. Karl Landert, CIO of Credit Suisse, has also stated that he would be prepared to play a role on ICTswitzerland’s management board. schi

Charitable Client Foundations

Water for Africa and Nepal

Last year, Accentus, Empiris and Symphasis – Credit Suisse AG’s three client foundations – distributed around six million Swiss francs toward 163 projects. Since the bank covers their management costs, all donations find their way to the good causes for which they were intended. Water projects in particular are becoming increasingly important, especially in Africa, but also in Nepal. schi



«When there is no breeze blowing,
the trees don't stir.»

Chinese proverb

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1 Country of Origin of Immigrants to Switzerland 2008

In 2008, 73 percent of all immigrants came from the EU, of which 48 percent were from neighboring countries and 33 percent alone from Germany. Source: Swiss Federal Statistical Office (SFSO), Credit Suisse Economic Research

Migration: Neighborly Appeal of Switzerland

During the recent crisis, the appeal of Switzerland as a place to emigrate to has increased further. In view of the demographic aging trend, this is a welcome development for Switzerland as it seeks to preserve its level of prosperity and social welfare mechanisms. Confoederatio Helvetica is particularly attractive to immigrants from neighboring countries.



Text: Dennis Brandes, Credit Suisse Economic Research

When the conversation turns to migration, the Swiss tend to be referring to the arrival of foreigners in Switzerland. But the Swiss are themselves internationally mobile. In 2008, a total of 680,000 Swiss citizens – more than 10 percent of the total population – lived outside Switzerland, with many of this number holding dual nationality. More than 60 percent of these foreign residents live in Europe, with 47 percent residing in countries that border Switzerland. France alone is home to 177,600 Swiss citizens, Germany 75,400, Italy 48,100, Austria 14,000 and Liechtenstein 3,600. On average, just over 20,000 Swiss move (back) to Switzerland every year as compared to the 30,000 that move abroad.

The net migration rate of the Swiss themselves is therefore as a rule slightly negative. During times of economic crisis this gap usually narrows. However, the migration flows in and out of Switzerland are dominated by foreigners. These figures dwarf the migration flows of the Swiss themselves. And it is the migration flows of foreigners that frequently lead to heated debate.

Based on the statistics for the first 10 months of the year, the net migration to Switzerland of foreigners (excluding temporary stays) in the crisis year of 2009 will be more than double the long-term average of around 36,000, thereby far exceeding official expectations. The net immigration figure of

65,500 as per the end of October represents a year-on-year decline of 27.9 percent, but a 6.6 percent increase on 2007 and a 76.3 percent increase on the equivalent figure of 2006. As **figure 2** shows, the introduction of the complete freedom of movement of peoples in 2007 (> see box on page 51) caused a huge leap in immigration. Until the end of 2008 immigration figures stood significantly above their previous year's equivalent, but annual growth rates fell back again in the wake of the financial crisis. In absolute terms, however, immigration figures remain at a higher level than during the period 2002–2007. Contrary to expectations, Switzerland has managed to retain its status as an >

attractive country to move to even during the crisis.

At the same time, the origin of immigrants has shifted increasingly toward EU countries, as Swiss legislation had intended, with the main focus on neighboring countries. In 2008, some 73 percent of all immigrants came from the EU, of which 48 percent were from neighboring countries and 33 percent alone from Germany. Cultural similarities and often a knowledge of at least one of the three main Swiss national languages ease both integration and entry into the labor market.

Fewer Germans Than Italians

One of the most striking aspects of these statistics is the rise in migration from Germany in recent years, particularly since the introduction of complete freedom of movement of peoples in mid-2007. Immigrants from Germany are increasingly catching up with those from Italy, traditionally the main country of immigrant origin, and Germans now form the major foreigner group in a number of German-speaking regions such as Zurich. However, in Switzerland as a whole German immigrants lag behind their Italian counterparts, both in absolute terms and relative to their respective homeland populations (Germany roughly 80 million, Italy roughly 60 million). Relative to their homeland populations, Austria and particularly Portugal provide a higher proportion of immigrants than Germany.

Where the quota-free influx of people from EU countries is concerned, migration is mainly driven by labor market forces: The issuance of a permit to stay is based on an offer of employment, the arrival of family members of immigrants already in Switzerland and the immigration of people who are financially independent. Immigration is therefore increasingly driven by the commencement of employment. At its low in 1994 this was the main reason for immigration in just 17 percent of cases, a figure that had risen to 52.1 percent by 2008; at the same time, the proportion of immigration accounted for by the arrival of workers' families fell from almost two-thirds to just a third. After a weak phase in the 1990s, the proportion of foreigners in Switzerland in employment had therefore risen by 2008, and at 74.4 percent is significantly higher than the Swiss equivalent of 66.6 percent.

The appeal of Switzerland as a destination for immigrants is also apparent in an international comparison. Relative to its own population, Switzerland attracts more immigrants

than any other country in Europe other than the Grand Duchy of Luxembourg (> see figure 3, right). The contrast with Germany could hardly be clearer. The net migration rate of the German population has been negative for many years (just like that of the Swiss themselves), but the net migration rate of foreigners has also been turning increasingly negative recently. In 2008, there was net emigration from Germany for the first time since 1984.

Rise in Appeal During Crisis

Immigration is a function of the appeal of the target country in comparison to the country of origin. To attract predominantly qualified migrants from neighboring countries, Switzerland must have a greater appeal than these countries, but of course these countries too are among the most developed economies in the world. When the assessment is restricted to economic criteria alone, the appeal of Switzerland can be broadly broken down into the following components: official immigration policy, economic structure advantages (tax, social security, etc.) and the state of the economy. How have these criteria developed during the crisis?

Immigration policy (for EU citizens) has remained liberal since the introduction of the complete freedom of movement of peoples in 2007, and will become even more relaxed once this freedom is extended to Eastern Europe after the expiry of the protection clause over the course of next decade (> see box on page 51).

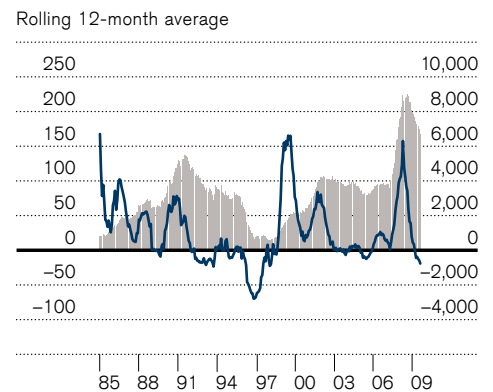
The macroeconomic structural advantages are still in place. The level of taxes and other salary deductions in Switzerland remains considerably below that of its neighbors. As long as Switzerland maintains its discipline where spending is concerned this should remain the case, as the much greater rise in government debt in other countries vis-à-vis that of Switzerland can be seen as an indicator of future tax increases in these countries. At the same time it can be argued that the quality of public services enjoyed by taxpayers in Switzerland is higher than in many of its neighboring countries.

Only in the sphere of the economy is a significant deterioration evident in Switzerland as compared to previous years; the financial crisis and its aftermath affected Switzerland too in 2009. That said, this deterioration should also be viewed in relative terms, since what matters are not absolute developments but the change in the relative picture as com-

2 Decline at a High Level in 2009

After a big leap in 2007, annual growth rates fell back in 2009. Yet in absolute terms immigration remains at a high level.

Source: SFSO, Credit Suisse Economic Research

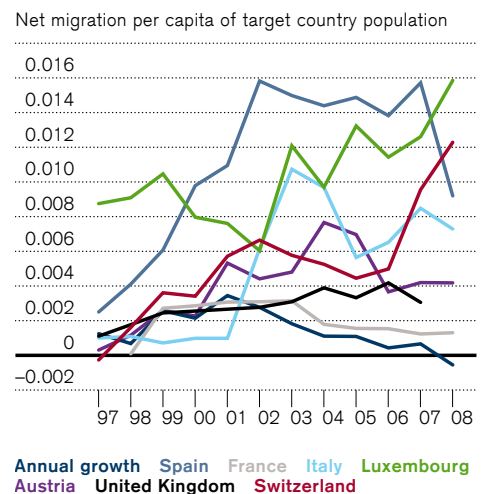


Net migration per month (right-hand axis)
Annual growth in % (left-hand axis)

3 Migration Relative to Population Size

Relative to its own population, Switzerland attracts more immigrants than any other country in Europe apart from Luxembourg.

Source: Eurostat, Credit Suisse Economic Research



pared to other nations. In this respect, Switzerland has held up well vis-à-vis other European countries. Switzerland's fall in GDP in 2009 was a fraction of that of its neighbors. Overall, the appeal of Switzerland in comparison to many immigrant countries of origin – and not least its neighbors – has thus broadly increased during the crisis.

Migration involves change, which in turn triggers adjustment costs. These become accentuated in a crisis. Admittedly, there is an automatic corrective mechanism in place in Swiss immigration policy: As immigration is largely based on the acceptance of paid employment, immigration potential will decline in the event of labor market deterioration. However, labor market developments and thus the development of immigration potential both lag economic developments. Switzerland has also fared fairly well in the crisis when compared to its neighbors, is a successful country and can retain its appeal.

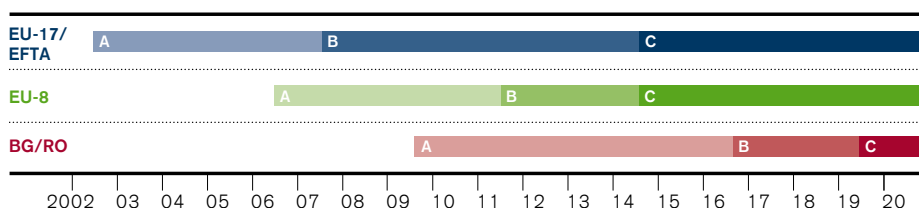
Switzerland: Victim of Its Own Success?

But Switzerland now faces two challenges: to design enduring appeal, and to ensure that the result is to Switzerland's own benefit. This in turn requires a politico-economic framework that can keep the immigration rate at a sustainable level, including the corresponding infrastructure and residential space planning, and finally increased training measures for residents with low qualifications (of which many are immigrants). Thanks to increases in the employment rate, labor force participation rate and the number of people of a salary-earning age (work volume), together with an increase in the level of education and technological advancement (work productivity), immigration can boost Switzerland's potential long-term growth – and thus its long-term prosperity.¹

As an aging continent with a declining number of inhabitants, Europe is faced with the question of how a dwindling number of wage earners can maintain the benefits of modern social welfare while an ever larger proportion of the population is increasingly drawing on these benefits as pensioners. Thanks to immigration, the Swiss population is gaining a boost from an external "baby boom," a new generation of well-qualified and eager-to-work taxpayers who will broaden the foundation of the social state. <

Swiss Migration Policy

The Swiss approach to migration policy is a twin-track one: free movement of persons from EU/EFTA and limited acceptance from non-EU/EFTA countries. As far as the latter are concerned, Switzerland is looking to move toward an active policy of selection, with prospective immigrants chosen on the basis of their qualifications and the needs of the Swiss economy. By contrast, Switzerland is relinquishing its own room for maneuver in connection with immigration from EU/EFTA (subject to certain transitional provisions). The introduction of complete freedom of movement of peoples is being staggered by both date and country group.



EFTA, Malta and Cyprus: Introduction of freedom of movement of peoples for the "old" 15 EU member states*

- A** Priority for Swiss citizens, initial control over wage and labor conditions up to May 31, 2004, quotas up to May 31, 2007
- B** Complete freedom of movement of peoples, but protection clause in the event of excessive increase in immigration up to May 31, 2014
- C** Complete freedom of movement of peoples

EU-8: Introduction of freedom of movement of peoples for the new EU member states**

- A** Priority for Swiss citizens, initial control over wage and labor conditions, quotas up to April 31, 2011, at the latest
- B** Complete freedom of movement of peoples, but protection clause in the event of excessive increase in immigration up to May 31, 2014
- C** Complete freedom of movement of peoples

BG/RO: Introduction of freedom of movement of peoples for Bulgaria and Romania

- A** Priority for Swiss citizens, initial control over wage and labor conditions, quotas apply for seven years from 2009 onward
- B** Complete freedom of movement of peoples, but protection clause in the event of excessive increase in immigration for a further three years
- C** Complete freedom of movement of peoples

Source: Integration Office DFA/DEA

* EU-15: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
 ** EU-8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia

¹ For a more detailed treatment of this question, see our study: Credit Suisse Economic Research (2007), More Growth Thanks to Migration? This can be found on the Internet under www.credit-suisse.com/research.

The Art of Asset Allocation

The financial market crisis presented us with the cold, hard fact that we live in a world paved with risk. While some of the more acute risks have been defused in the first tentative year after the global recession, the massive support that was required from governments and central banks has created new potential dangers. This is reason enough to ask how our own assets can best be structured for long-term investment success.

Text: Anja Hochberg, head of Investment Strategy

In itself, the concept of “asset allocation” is nothing new. It describes the distribution of assets across various categories of investment (“asset classes”), such as equities, bonds, alternative investments (e.g., commodities, real estate or hedge funds) and cash. The objective is to find the optimum balance of risk and return across the portfolio as a whole. This is possible because different asset classes generate different levels of return, and their values are naturally associated with different degrees of volatility. The rule of thumb here is that the higher the re-

turn, the higher the volatility – i.e., the risk – of the investment (>see figure 1).

For example, between 1994 and 2007 equities generated a return of just under 9 percent per year. In return, however, investors had to accept a risk, i.e., a volatility, of around 14 percent. In contrast, during the same period corporate bonds posted an average annual return of 6 percent, with a volatility of 6 percent. If both asset classes are combined in a portfolio along the gray line shown in figure 2, we can construct a portfolio that achieves a long-term return of

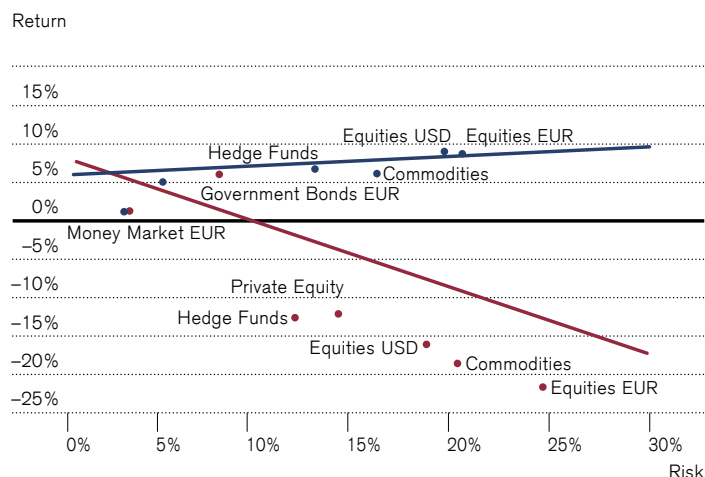
8 percent (more than bonds, but less than equities) at a risk of 10 percent (again, more than bonds, but less than equities), for example. If we change the relation between bonds and equities, then – depending on personal risk capacity and risk acceptance – we can target a return of 7 percent.

The Advantages of Diversification

This exercise illustrates that diversifying a formerly bond-only portfolio with equities permits an additional return of around 0.75 percentage points at a constant level of risk

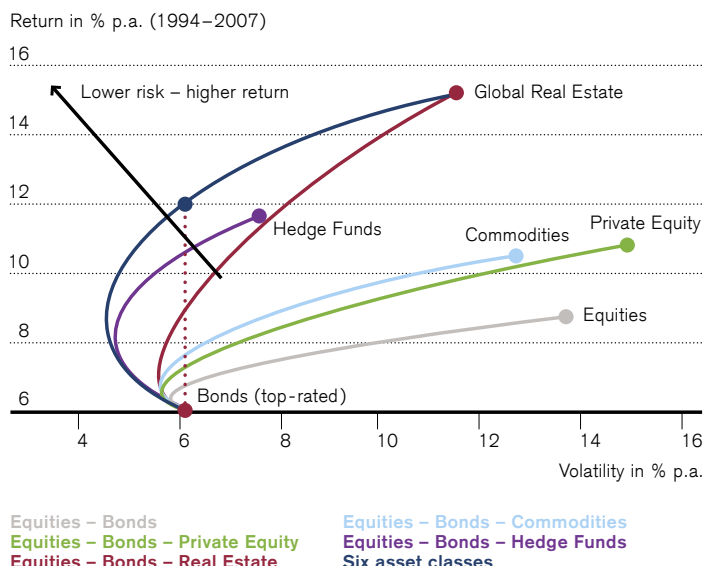
1 Higher Returns Possible Only at Higher Risk

Different asset classes display different levels of risk. Under normal circumstances and over a long investment horizon, higher risk will be rewarded by higher returns. Source: Credit Suisse



2 Advantages of Diversification

We can achieve the optimum portfolio by combining different asset classes that react differently to changing economic and financial market circumstances. Source: Credit Suisse



(e.g., 6 percent). This is possible because these two asset classes react differently to changes in economic or financial market circumstances. Bonds, for example, tend to perform well when economic activity is weak or contracting, and interest rates are trending downward. These debt instruments respond much more negatively when interest rates are rising. Equities, meanwhile, prefer a promising economic climate, in which bonds will generally weaken. These investments are termed “uncorrelated” or “weakly correlated” (> see figure 4). This means that these investments do not move in step with each other, and thus balance each other out in the portfolio. The image of a seesaw, as we all know from childhood, is useful here in picturing equities on one side, and bonds on the other. Only the two asset classes together can guarantee a balanced portfolio, i.e., one that is geared to differing economic and financial market situations. However, if an investor concentrates on a single investment category, their assets will be left just sitting there like a lone child on the aforementioned seesaw.

Giving a Portfolio Legs

The potential risk of inflation shows that risk in such cases is not limited merely to equities – regarded as higher-risk investments. Even if a cautious investor is happy with an average long-term (15-year) return of 3 percent to 4 percent, rising interest rates may mean that the overall return on a conservative bond portfolio falls well below this figure in the medium term, or even becomes negative.

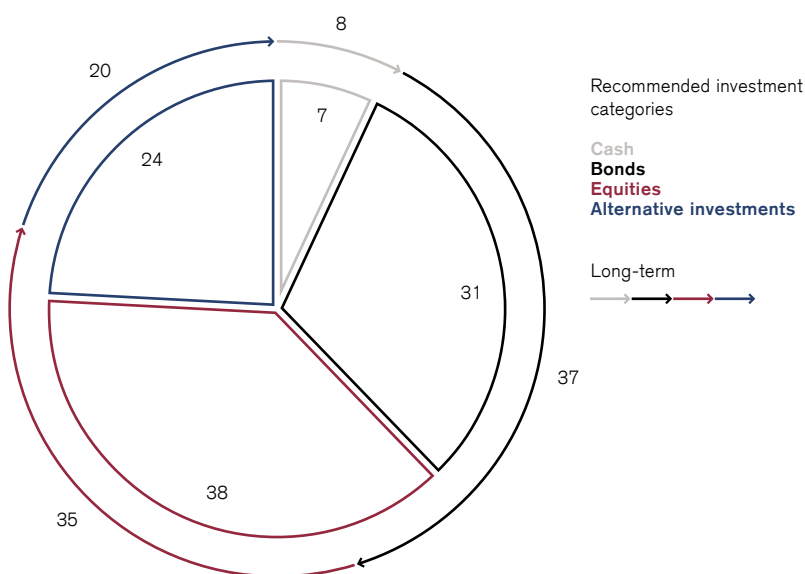
This can be countered by structuring portfolios more strategically, and thus by including a variety of asset classes. After all, a chair always stands more strongly on four legs. To be well armed for all phases of the economic cycle (including expansion, overheating, downturn and recession), we recommend the following positioning for a balanced risk profile in Swiss francs (> see figure 3). Investors should therefore check whether they have an appropriate relationship between risk and return in their portfolio.

This kind of investment strategy lays the foundation for successful investing over the long term. Academic studies have shown in striking form that the right asset allocation is the biggest determining factor in investment success. The Credit Suisse Investment Committee defines the framework for this investment strategy. Made up of

3 Portfolio Management Investment Strategy

In addition to the long-term division of assets across various asset classes, we also believe in active management from a tactical perspective. We currently favor equities and alternative investments (e.g., commodities, hedge funds).

Source: Credit Suisse, Ibbotson



representatives of privately held asset management firms and experienced analysts, in addition to defining the investment strategy, the Investment Committee also examines both short-term and long-term market opportunities.

Risks Require Active Management

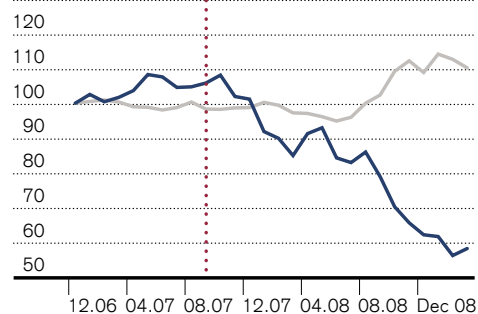
The very phase of the economic cycle in which we now find ourselves is characterized by major volatility in the financial markets. This will continue to hold true. Long-term bull runs on the world’s stock markets have also been interspersed with years of below-par performance in the past. Following on from hefty price gains, the next phase of the economic cycle, with all its latent risks (e.g., the financial system, public-sector debt, rising interest rates and inflation) is likely to take on a more measured pace. This kind of environment will still throw up some interesting investment opportunities, however. For example, a tactical investment strategy might raise a portfolio’s equity allocation sharply for a given period, and concentrate on a particularly promising region. Furthermore, the bond allocation could and should be managed actively to take advantage of the opportunities presented by the market. Under the right circumstances this might, for instance, mean the temporary inclusion of

higher-yielding bonds, or specific maturity management to counter the risks of rising interest rates. Actively managing your own portfolio, for example with the support of a private portfolio manager, can help you make the most of this potential for higher returns. <

4 Diversification Pays Off Even In a Crisis

Diversification proved its worth even in the financial crisis, because bonds and equities reacted differently to the market climate.

Source: Credit Suisse



Barclays Global Bond Index
Global Equities (MSCI AC World)



Lighting

Good and sufficiently strong lighting not only brings better visibility, but also contributes to a positive atmosphere.



Visibility

Additional windows increase the amount of natural light and can lead to a greater sense of security through eye contact.



Switches

Light switches that glow in the dark are easier to locate. In hallways and corridors especially, motion detectors are an advantage.



Handgrips

Handrails in the hallway provide a feeling of security and help to prolong independent freedom of movement.



Stairs

The steps should have a nonslip surface. To allow for the later addition of a stairlift, the stairs should be at least 120 centimeters wide.

Custom-Built Senior Housing as an Attractive Investment

Who doesn't dream of living out their twilight years comfortably in pleasant surroundings? Demographic and socioeconomic forces are likely to fuel demand for alternative forms of senior housing significantly in the years ahead.

Text: Martin Bernhard and Karim Cherif, Global Real Estate Analysts



Storage

Wardrobes and other cupboards must be easily accessible. Keys on pieces of furniture increase the risk of injury. Magnetic locks or handles are preferable.



Terrace

The doorstop of a balcony or terrace door should under no circumstances be higher than 3 centimeters.



Living

In the living area, attention must be given to having sufficient space between pieces of furniture and in front of cupboards and doors.



Doorstep

Every unevenness is a potential stumbling block. Doorsteps should therefore be avoided when a floor surface changes. Doormats can also be built into the floor.

Modern senior housing facilities should provide integrated services such as health care and social activities, but also enable their inhabitants to live independently and flexibly. Exposure to the senior housing sector can offer appealing long-term growth potential for real estate investors. But also from a cyclical point of view, the time for such investments looks rather attractive currently. In this article, we will mainly analyze the US market due to the lack of data available for other regions. But these findings should be transferable to other developed countries in Western Europe and Japan.

Population Aging Accelerates

The aging population in developed countries will be an important demographic factor impacting real estate markets in the near future and the longer term. By the year 2030, the number of people over the age of 65 is expected to grow by 26 percent in Japan, by 39 percent in Europe and by 78 percent in the US. In addition, citizens in developed countries are living longer, extending the term of tenancy for senior housing units, especially for independent living facilities (see box for different forms of senior housing). According to OECD data released in 2006, the remaining life expectancy of females and males at age 65 averaged about 20 and 17.5 years in the US, 22 and 18.5 years in Switzerland, and 23.5 and 18.5 years in Japan, respectively.

Hence, the population of “very” old persons will likely grow substantially over the coming decades as well. According to US Census

data, the number of Americans aged 85 and older is expected to rise 145 percent from 2010 to 2040, far surpassing the projected 30 percent growth rate for the overall US population during that period. Figure 1 shows the expected evolution of the US population by age group through the year 2050. In Western Europe and Japan, the United Nations expects the number of seniors aged 80 and older to grow by about 90 percent between 2010 and 2040.

As the 2006 Medicare¹ Current Beneficiary Survey results in figure 2 illustrate, the need for assistance or health care services and subsequently the demand for senior housing increase as seniors grow older. The percentages in the chart show how many Medicare beneficiaries are reporting that they cannot perform a specific daily living activity without external help due to health or physical problems. The importance of long-term care for seniors will increase accordingly. In a study for Germany, the consulting company Avivre Consult GmbH also found that the likelihood of care requirement exponentially increases with the seniors’ age.

Rising incomes of elderly people could generate further demand for senior housing real estate. The US Census Bureau reports that the share of US people over the age of 65 living in poverty or with a low income decreased from 49.2 percent in 1976 to 35.6 percent in 2006. In the past two to three years, the wealth effect has been negative due to the setbacks in the housing and in the stock market. Nevertheless, demo-

graphic and socioeconomic factors should play a supportive role for senior housing demand in the years ahead.

Delaying Moving for as Long as Possible

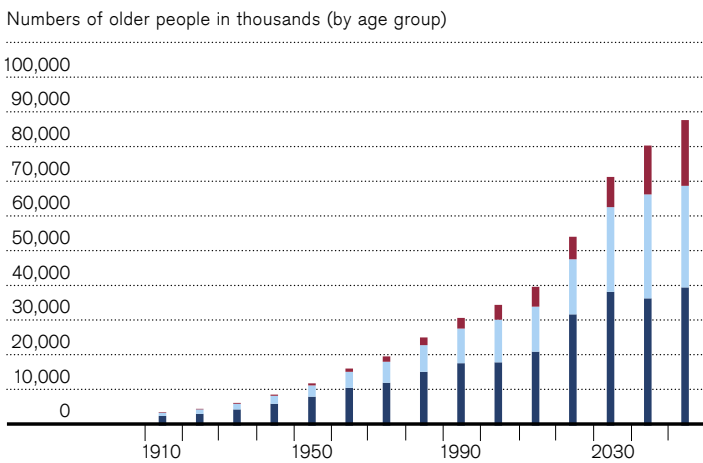
Convincing seniors and their families to choose age-qualified facilities rather than remain in their own homes is a difficult and often emotional challenge for the senior housing industry. This is also a cultural issue: Societies’ traditions differ in taking care of the elders. The latest National Housing Survey of Adults Age 55+ shows that the share of US seniors who have moved to age-qualified housing significantly increased between 1998 and 2007. Yet, the decision to enter an age-qualified facility generally still seems to be needs-driven. According to the same survey, the desirability to live in assisted and independent living facilities has declined slightly over the same period. Consumers may thus still consider age-qualified facilities as places where they might need to live, rather than places they would like to live in. Further efforts of developers and operators are required in order to accommodate the expanding needs and wishes of the senior population. This is especially true for independent living facilities, where the challenge is to offer such an attractive environment that even very healthy seniors find it desirable.

Attractive Entry Opportunities

Rental income and capital appreciation are the two main return drivers of senior housing investments. Rental incomes depend mainly

1 Likely Surge in the US Population Aged 65 and Older

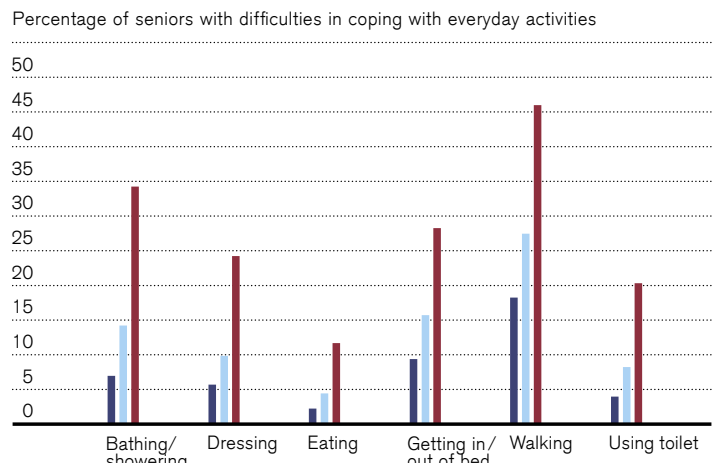
By 2050 the number of people in the US older than 65 will more than double. Source: US Census Bureau, Credit Suisse



65-74 75-84 85+

2 Care Needs Surge With Age

With increasing age, the dependence on outside help in everyday life also increases. Source: Medicare Current Beneficiary Survey (2006), Credit Suisse



65-74 75-84 85+

on the supply and demand balance in the local occupier markets. In the US, for instance, the weak economy weighed on senior housing demand in the past two years. Additional strain came from the downturn in the overall US residential sector. Many seniors were unable or unwilling to sell their homes in a depressed housing market, preventing them from moving into independent-living facilities or into Continued Care Retirement Communities (CCRCs). While rents (or entrance fees) for CCRCs were relatively stable during the downturn, occupancy rates declined for all forms of senior housing. The declines for assisted living and skilled-nursing facilities were less pronounced as demand for these facilities is mostly needs-driven and consequently more insulated from business cycle forces. But with the economic recovery under way and the US housing market stabilizing, Credit Suisse believes that occupancy rates will find a floor for all senior housing classes in 2010.

Health Care Reform a Factor of Insecurity

On the investment side, transaction volumes in the US senior housing market fell strongly and capitalization rates have risen accordingly in recent quarters. A very tight credit market remains the main obstacle for a pick-up in sales activity. Another concern is the uncertain impact of US health care reform on the financing of seniors' care. But with valuations improving further, Credit Suisse foresees investors returning to the market in 2010 and transaction activity reviving. Hence, 2010 could offer attractive entry opportunities in the US senior housing sector from a cyclical point of view.

Long-Term Exposure Recommended

Over the longer term, growth prospects of the senior housing sector appear very favorable as a result of an aging population in most developed countries. Senior housing as an attractive investment theme is thus likely to gain further importance within the real estate universe in the coming years. While the US is currently by far the most developed market for senior housing investment products such as real estate investment trusts (REITs), Credit Suisse expects the investment opportunities in Europe and Asia to evolve further in the future too. At the current stage, we would recommend that investors gain exposure to the senior housing and health care theme via specialized real estate funds. <

Different Forms of Senior Housing in the US

The forms of senior housing available in the United States are based on three predominant classes that are distinguished by different levels of care and support:

Independent-Living Communities are designed for seniors who are healthy and able to live without assistance. Most of these communities offer some common infrastructure (swimming pools, hairdressing salons, etc.) and encourage social activities.

Assisted-Living Facilities offer seniors who are unable to live completely on their own, but at the same time would like to spend their retirement as independently as possible, assistance whenever needed.

Skilled-Nursing Facilities cater to elderly people who need 24-hour medical care in addition to custodial care. Skilled nursing includes, for example, specialized Alzheimer's care / dementia facilities.

Continued Care Retirement Communities (CCRCs) are long-term care schemes that combine all of the three classes described above. Residents in CCRCs are able to move from one care level to another as their needs change.

¹ State health insurance for people aged 65 and older (and other population groups such as individuals with certain disabilities) in the US.

Using Digital Networks To Connect and Enhance The Real World

Now that the crisis year of 2009 is over, the IT sector is once again looking forward with optimism to the new decade. The launch of the iPhone in particular has decisively underlined the fact that the Internet is all around us all the time. The combination of mobile Internet and social networking smoothes the path toward a wealth of exciting and innovative business models.

Text: Uwe Neumann, Senior Equity Analyst

The new decade has got off to a promising start for the IT sector. Industry analysts are expecting to see strong growth again following the crisis year of 2009. After a decline of almost 10 percent last year the industry is forecasting growth of between 5 percent and 10 percent in 2010. The reason for the positive outlook – besides the general economic recovery – is the increasing digitalization of society, which is moving ahead by leaps and bounds (> see figure 1 on page 71). The expectation therefore is that businesses will upgrade their communication networks step by step in order to meet the challenges of the coming decade. After all, the last upgrade cycle took place almost 10 years ago as IT systems were modified to deal with the requirements of the Internet/intranet and equipped for the new millennium. Today it's all about the way that people and media are changing. Mobile Internet and social net-

works play a central role here. The combination of the two enables new business models, which, thanks to the growing market penetration of Internet-capable mobile devices, could gain in significance and rapidly become mass market-capable in the near future. Since the launch of the iPhone, private consumers have abandoned their previous reluctance to use mobile Internet. According to Informa, an international provider of specialist information and services, the number of mobile Internet access points is due to rise by a factor of five between 2008 and 2013, while fixed-line Internet connections will double at most and tend to become comparatively less important.

Innovative Trends of the Mobile Internet

Numerous new business models emerge from Internet blogs as well as from industry and investment analysis that looks at inno-

vative trends in digital networking. In our opinion, the following five technologies that use the mobile Internet, and from which many more potential uses could be derived, illustrate the theoretical diversity of the new business ideas.

1) Information glasses for everyday use:

This functionality is best known as “augmented reality” and refers to information that the user receives via a smartphone display. The input device in this case is not the keypad but the camera. In other words, the camera recognizes the object or person in its field of vision and provides relevant information via the camera display without any action on the part of the user. Whether restaurants, people, book covers, groceries in the supermarket or a statue in the park – everything is identified, data sources are tapped and information is provided. The smartphone acts as both a

magnifying glass and an information channel. This is made possible by the combination of GPS, a compass, movement sensors, RFID, and the use of information platforms such as Wikipedia and Lexika or social networks such as Facebook. Many SMEs – such as Sekai Camera (Japan), Layar, Graffiti Geo or Mobilizy (Austria) – are currently developing applications of this kind that can be used on iPhones or smartphones running Google’s Android operating system.



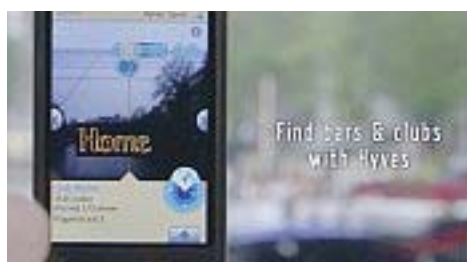
Reality can be augmented through the lens of a smartphone camera ...



... with all kinds of information from the Internet.



It could, for instance, tell users which properties are for sale in their field of vision ...



... or which direction to go in to get to the “Home” club.

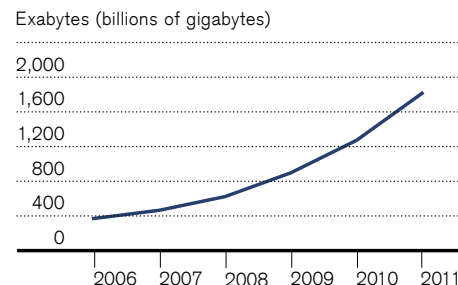
2) GPS: A second, not quite so new trend is the use of GPS on mobile phones. Innovative wireless applications will tend to make “geo-location” a must-have rather than a nice-to-have feature. When used in combination with data pools such as social networks (e.g., Facebook, Twitter) it is possible to provide interaction and communication features that are used for targeted marketing purposes or for obtaining information. For example, a user would be able – easily and, above all, in real time – to locate the best party or event or the nearest cinema with seats available.

3) Paying by mobile: This trend has also been around for some time. In many countries it is already possible to pay for items such as car parking or railway tickets by SMS. However, mobile Internet access makes new kinds of transaction possible. It is conceivable that in the future smartphones could become credit cards. For example, Jack Dorsey, one of the co-founders of Twitter, launched a new company (known as Square) at the start of December 2009 which plans to enable users to pay for their shopping via an iPhone. Using a plug-in device and a loadable application, the iPhone becomes a credit card and a card reader. The person making the payment can enter their PIN or provide a signature on the iPhone display to authorize a purchase. Many other companies plan to implement mobile payment systems based on mobile phones. Obopay, Nokia’s new payment platform, is intended to come online gradually in the spring of 2010. The aim is to turn the mobile phone into the most widely used credit card, especially in emerging countries where payment systems are not as sophisticated or widespread as in developed countries.

4) Social CRM: Facebook and Twitter are social communication platforms that practically everyone now knows. While these are generally used for personal networking, this type of social network looks likely to have a major impact on businesses. Real-time communication with colleagues and/or clients via chat platforms on, for example, a smartphone or other mobile device can encourage new kinds of interactivity and customer care, with positive knock-on effects on both revenues and earning power. Yammer, for instance, is a kind of Twitter for businesses and offers a real-time communication platform. It can be used as a discussion platform for spreading ideas, links and news (e.g., the results of meetings) quickly and efficiently. >

1 The Digital Data Tide Just Keeps On Rising

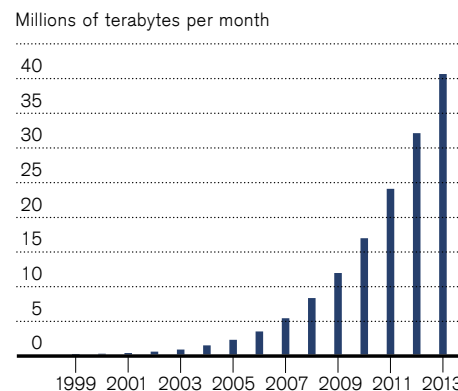
The global digitalization of society gives the IT sector reasons to be cheerful about the future. Source: IDC



Digital information created worldwide

2 Global Internet Traffic

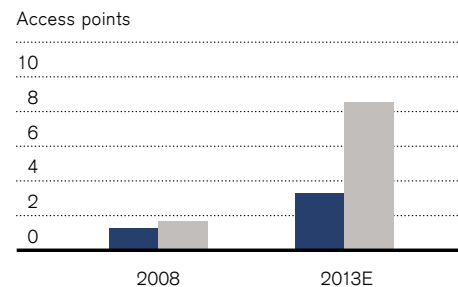
Because mobile access to the Internet is increasing, global data traffic on the network is expanding rapidly. Source: Cisco VNI



Global Internet traffic

3 Mobile Wireless Versus Fixed-Line Network

According to market observer Informa, the number of mobile access points will grow by a factor of five between 2008 and 2013. Source: Infonetics



Fixed access points (bn)
Mobile access points (bn)

Photos: www.layar.com

5) Videos on mobile devices: The success of Youtube in the fixed-line network of the telecoms companies looks likely to be replicated on the mobile Internet. Mobile wireless networks are becoming faster and faster. Given this fact and the growing numbers of smartphones with built-in video cameras, it can only be a matter of time until live video streaming, music videos and cinema trailers become commonplace on mobile devices.

Who Will Benefit From These Trends?

Although the road to success – e.g., for “augmented reality” – looks likely to be rocky because applications are operating in a free and as yet unregulated legal environment, a comprehensive market will likely develop in the next five years. At present only small start-up companies (e.g., Sekai Camera, Layar, Graffiti Geo and Yelp) have taken an interest in this topic. However, the world’s most successful companies in the expanding digital world are most likely to be those that provide or create information and communication platforms used as central hubs for the above-mentioned services and a host of others that have yet to appear. The two leaders in this field are IT giants Google and Apple. However, investors should also watch companies like Facebook and Twitter, which will presumably make their way onto the stock market in 2010 and whose market value will then become apparent. At the end of 2009, estimates of Facebook’s value were running at 10 billion dollars in the gray market, even though it apparently generated revenues of only 500 million dollars in 2009. This shows the high expectations being placed on the revenue growth and earning power of these platforms. Revenue sources look likely to come from advertising (which still focuses primarily on TV, radio and the print media), access charges for defined “communities,” “content sales” or commission charges for transaction processing or service agreements. In the interim, businesses that provide the infrastructure for this digitalized “virtual” world should also benefit by making the rapidly growing data traffic on the communication networks possible in the first place. These include software companies like Oracle and SAP as well as data managers like EMC and business network providers like Cisco. Smartphone manufacturers like Apple, Nokia and RIMM – which provide hardware and integrated software platforms for communications, payments and downloads – should also benefit in the long term. <



1



2



3

- 1 Paying by mobile:** Payments can be made in seconds via a mobile phone without any additional charges. **2 A member of the audience can use the smartphone camera to scan the speaker and so access additional information about the presentation.** **3 Instead of having to enter a URL by hand, the link can be established instantly by photographing this QR code.**

Good to Know

Definitions and Book Reviews From the Business World

ASEAN [Association of Southeast Asian Nations]: "Declaration of Concord," "Treaty of Amity and Cooperation," "Zone of Peace, Freedom and Neutrality" – such are the names of three contracts between the member states of → ASEAN. These names make clear how much store this organization sets by the cultivation of close neighborly relations. Founded in Bangkok in 1967, the development of ASEAN has progressed so far that it is now aiming to create a comprehensive economic area modeled on the European Union. The most important dialog partners of the organization include regional giant China as well as Australia, New Zealand, India and the EU. Important contacts are also cultivated with the US, Canada, Japan, South Korea and Russia as part of wider transpacific cooperation. The greatest problem within ASEAN is the extremely diverse characteristics of its member states: Different political models rub shoulders with different religions and different economic approaches, which at times makes for considerable integration problems within this politico-economic community.

Diplomacy [representing the interests of a country abroad; negotiation skill]: Tactical, polished, skilled, → diplomacy is the art of successful negotiation. Official representatives of a country strive to achieve good relationships between two or more states or multinational organizations. The main focus here is on preserving the interests of one's own country abroad. On average, around 70 percent of all diplomatic contacts of a country involve economic relations. In addition to the bilateral form of diplomacy – i.e., between two nations – multilateral diplomacy involves a larger number of nations simultaneously attempting to reach agreement on an issue that will be binding to all parties. Important platforms of multilateral diplomacy include the UN but also the EU and ASEAN (see above). Diplomatic exchanges often take place via the official channels of national

embassies, but they may also be of an informal nature. For example, in China the US cultivates informal contacts with members of political foundations so as to convey its views clearly without this being made clear through official channels.

Good Neighbor Policy:

A dispute with your neighbors? You have three options: move house, continue the dispute, or find a constructive solution. In the event of a dispute between two nations the first of these is not an option, and the second tends to result in military conflict. The third of these routes has entered the history books under the name of a → Good Neighbor Policy. US President Franklin D. Roosevelt applied this kind of policy until around 1938 vis-à-vis the countries of Latin America. For example, the US refrained from intervening militarily when its interests were threatened, but instead placed mutual respect and support at the heart of its policy for the first time. Other countries pursue a good neighbor policy too, for example China. After the Asian crisis of 1997–1998, China stepped up cooperation with ASEAN (see left) in particular. China's Prime Minister Wen Jiabao has underlined this attitude by positioning his country as an "initiator of peace, friendship and cooperation in the region." **ctv**

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The Art of Conflict Resolution

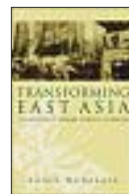


Crucial Confrontations: Tools for Resolving Broken Promises, Violated Expectations, and Bad Behavior

Kerry Patterson, Joseph Grenny, Ron McMillan and Al Switzler
McGraw-Hill, 2004
284 pages
ISBN: 978-0071446525

Playing kids, barking dogs, rampant trees – often little things are the trigger for long-standing neighborhood feuds. getAbstract recommends this handy manual on conflict resolution to everyone who prefers solving problems peacefully. Although confrontation is difficult for many people, it is often necessary. Confrontations can help bring people back to a more productive course. However, confrontations also can go off track and become shouting matches (or worse). Authors Kerry Patterson, Joseph Grenny, Ron McMillan and Al Switzler outline a constructive method for resolving conflict. Boiled down to its essentials, the methodology consists of focusing on facts, remaining calm, listening to the other person with respect and working to motivate the other person and to enable a change in behavior. Although the book is light, anecdotal and easy to read, it offers much sound and useful advice. ©getAbstract

East Asia on the Move



Transforming East Asia: The Evolution of Regional Economic Integration

Naoko Munakata
Brookings Institution Press, 2006
220 pages
ISBN-13: 978-0815758877

Sudden economic growth and increased stability in East Asia are shifting Asia's geopolitical environment, and the effects are reverberating around the world. Naoko Munakata, a director in Japan's Ministry of Economy, Trade and Industry, has been a close observer of this transition. She offers a distinctive perspective on East Asia's economic progression, the result of deepening neighborly cooperation among its individual states. She is particularly critical (though always diplomatically so) of American missteps, such as the US's failure to participate in stabilization efforts during the 1997/98 Asian financial crisis. Munakata recounts past events with an eye toward a future in which the US, Japan and China will accept and adapt to the new realities of East Asia. getAbstract finds that this detailed analysis deserves the attention of anyone whose responsibilities include Asian affairs. ©getAbstract

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On the Way to Immortality

Holder of 19 honorary doctorates, the scientist, inventor and future researcher **Ray Kurzweil** is considered to be one of the most important visionaries of the modern age. In his latest book, he charts the path to immortality. His motto: **Live long enough to live forever!**

Interview: Daniel Huber

bulletin: I've read that you take 200 pills or so every day to prolong your life, or your youth, whatever you want to call it, in order to live to the point where we will be able to live forever. Do you never get tired of life?

Ray Kurzweil: Well, people don't want to die unless they are suffering, unless they are in great pain physically or emotionally. I don't accept the idea that death gives meaning to life because it makes time precious. The truth is that death is a great robber of meaning from life. It destroys knowledge and skills and relationships. We've rationalized death as a good thing, because we've had no alternative. In real life we respond to it as if it is a tragedy, which in my view, is the correct response. What gives life meaning is what you can do with it.

But are you actually convinced that very soon we will overcome death and live forever?

We don't actually have the technologies to radically extend life in our hands yet. But what we do have is the means of prolonging our lives to get to a future point where we will have these technologies. We talk about bridges in the two health books I've co-authored with Dr Terry Grossman. We assume that we will cross from the first bridge to the second bridge, and then to the third bridge. Bridge one is what you can do now, bridge two is the full flowering of the biotechnology revolution. And then bridge three is the full flowering of the nanotechnology revolution through which we will go beyond the limitations of biology.

What in your view today is the critical age in terms of living until bridge two?

Even baby boomers like me can realistically talk about a plan to get to a future point where we will have the means of dramatically extending our lives.

So what about a person who actually gets all the way to bridge three and eternal life, but then crosses the street and gets hit by a truck?

Well, I'd like to get to a point where we can back up the information in our bodies and brains in order to restore the body after an accidental destruction. We can do that to a limited extent already. If you're a Parkinson's patient, part of your brain is destroyed by Parkinson's. You can now put a computer inside your brain that replaces that region that is destroyed. And that's not an experiment, but a proven medical therapy. There are many thousands of people, maybe tens of thousands, walking around with computers in their brains.

So where will this take us?

If we go out to the outer fringes of the third bridge, we'll be able to capture the information. And I'm really talking about information; it's not a metaphor. There's real data in our brains that reflects our memory, our skills and our personality; and we think nothing of backing up the personality, memory and skills of our computers. We'll be able to do that for our bodies and brains as well in the future. That's the ultimate end of the third bridge.

That all sounds very impressive, but you talk about gigantic strides within only 20 to 30 years. Isn't that rather optimistic?

Up till now we didn't have the genome, which is the software of life. And that's not a metaphor, either. The genome is the data >





Ray Kurzweil was born into a Jewish immigrant family in New York on February 12, 1948. He studied at the Massachusetts Institute of Technology (MIT). Kurzweil's inventions include a reading machine for blind people. This 1976 invention led to the blind musician Stevie Wonder coming into contact with Kurzweil, from which a close friendship developed. Stevie Wonder also encouraged Kurzweil to develop a synthesizer that finally came onto the market as the Kurzweil K250 in 1984. It was the first device that was capable of artificially producing the sounds of a concert grand piano and all the other instruments of a classical orchestra. In addition to 19 honorary doctorates, Kurzweil has also received recognition from three US presidents, including Bill Clinton in the form of the "National Medal of Technology," the highest technology award in the US.

Kurzweil is the author of six nonfiction books, of which four have become bestsellers. His work "The Singularity Is Near" not only made it into the New York Times bestseller list, but was also No. 1 on Amazon in the categories of both science and philosophy books.

in each gene that forms the basis of biology. And we're beginning now to understand how biology works as a set of information processes that start with the software represented by our genes. And that software, by the way, is out-of-date. It evolved thousands of years ago when conditions were very different. One gene, for example, the fat insulin receptor gene, says, "Hold onto every calorie, because next hunting season may not work out so well." That was a great idea a thousand years ago, because there were no refrigerators. You worked all day to get a few calories, and you needed to store them for the next day. It's not a good program today. We'd like to be able to tell our fat cells, "Look, don't hold on to every calorie. I'll have calories again tomorrow. We live in an era of abundance." This was actually accomplished in animal experiments. Scientists near where I work in Boston, the Joslin Diabetes Center, turned off the fat insulin receptor gene in animals. These animals then ate ravenously and remained slim. And it wasn't fake slimness. They didn't get diabetes, they didn't get heart disease, and they lived 20 percent longer. That's just one of the 23,000 genes we'd like to consider modifying to reflect our modern era.

But won't that take a lot longer than 20 years?

Once a technology becomes an information technology, as is happening right now with medicine, it's subject to my primary thesis, which is "The Law of Accelerating Returns," which states that information technologies grow exponentially, not linearly. In computing today, the power of computing per dollar, or per franc, is doubling every 11 months. And doubling is very different than linear growth. However, the method we use to intuit the future is linear, not exponential. We have these hard-wired predictors that are linear. But the reality of information technology is that it grows exponentially. If I take 30 steps linearly, one, two, three, four, five, I get to 30. If I take 30 steps exponentially, two, four, eight, 16, I get to a billion. It makes a huge difference. Back in the early '80s, I predicted a World Wide Web emerging in the mid-to-late 1990s. People thought that was ridiculous, at a time when the entire national defense budget could only tie together a few thousand scientists with the ARPANET, but I saw that it was growing exponentially, doubling every year and multiplying by a thousand in 10 years, a million in 20 years; and indeed, this happened right on schedule.

What will our everyday life be like in 50 years' time?

About 50 years from now we'll be spending a lot of our time in virtual reality environments in which we will have virtual bodies and three-dimensional, full-immersion virtual reality environments integrated within the nervous system. This will enable you to appear differently in different environments.

So the actual body of a human being will lose its importance?

Well, actually, the concept of having a body is and will remain important. Almost all of our intelligence is directed toward our bodies, meaning its needs and its desires. I mean, we have a whole hierarchy of needs as we know from Maslow. But we don't have to have just one body and one environment. I mean, in virtual reality, we'll be able to have different bodies. You can see already a harbinger of that in Second Life. People create a body for themselves – an avatar. Sometimes they create an avatar that looks like them, sometimes it's an idealized version of them, and sometimes it's a fantastic imaginary environment, an imaginary body. There are interesting psychological experiments, which

show that when people really immerse themselves in these virtual environments and something happens to their avatar, you can see that it's happening to them in their brain. So, we do actually identify with our avatar. But still, it's over here on the screen. Fairly soon, these imaginary worlds will be full-immersion, three-dimensional environments. We'll have glasses that beam three-dimensional images right onto our retina, so we'll feel like we're in the environment. But with the third bridge, we'll have nanobots go into the brain through the blood stream, through the capillaries. They'll interact with our biological neurons the same way that a brain, or neural implants, do today, but noninvasively. And we will put ourselves in a three-dimensional, virtual reality environment incorporating all the senses from within the nervous system.

“We’ve rationalized death as a good thing, because we’ve had no alternative.”

So we won't go outside anymore and take a little walk along the lake or anything if we can experience everything virtually from the comfort of our homes?

Well, we'll do that too. I'm not saying we'll spend all of our time in virtual reality. I mean, there are people who spend four or five hours a day on Second Life today, but still spend time in real reality. We'll be able to change our bodies and brains through nanotechnology as well in the real world. So, we'll have real bodies and virtual bodies. I'm just saying that virtual reality will become increasingly important.

How are we going to communicate? Will there still be different languages? If we have all this total intelligence in our heads, will there be a new universal global language or something?

I think we will have ways of communicating directly brain to brain when we have computation in our brains. When we send nanobots into our brain throughout the bloodstream; these little computers in our brain will be on the Internet. We will be able to think with a hybrid of biological and nonbiological intelligence. The nonbiological portion will be out on the cloud as well. So, some of our thinking won't be physically in our heads anymore, it will be on a cloud of computing, which can communicate very fluidly with other people who are also thinking out on the cloud. There are already harbingers of that existing today, such as the neural implants that are used for Parkinson's, which are constantly communicating outside the brain. You can download new software using wireless communication. There was an article a few weeks ago in the New York Times expressing concern about people hacking into the software that runs in people's brains using wireless communication. So, we'll have ways of communicating beyond today's languages. Already, we're beginning to break that barrier.

Will we still need money in the future?

There will still be money. Money will be used to pay for intellectual property. That's why intellectual property is such an important

issue, because that's really the future of our economy. We'll be doing work that we can't even define today, just as many of the jobs we do today did not exist 20, 30 or 40 years ago.

But why will we still have a body and use all the resources if we feel perfectly happy in a virtual world somewhere?

These concerns that we're going to run out of resources are true, if we restrict ourselves to 19th-century, first industrial revolution technology, such as fossil fuels. We are actually awash with resources. In terms of energy, we have 10,000 times more energy than we need, pouring down on us every day from the sun. We have not had an economical means of converting it, but that's changing. I did a study for the National Academy of Engineering with Larry Page. We looked at all the different energy technologies and we wrote the energy plan for the National Academy of Engineering. We selected solar, because it has the most headroom. There are other interesting emerging technologies as well. We're applying nanotechnology now to solar collection and solar panel technology, including energy storage. The cost per watt is coming down dramatically. The total amount of solar energy is on an exponential rise. And not just recently – it's been doubling every two years for the past 20 years. And there are only eight doublings to go before it meets 100 percent of our energy needs. And there is 10,000 times more sunlight than we need to do that. I believe it's going to happen.

And what about other resources such as water and staple foods?

There's a similar story with water. We're not running out of water. There's water everywhere. Look around you. The oceans are filled with water. We just can't drink it, unless we convert it. But there are already new technologies emerging, such as Dean Kamen's water machine, which is very inexpensive. In terms of food, we're

“And there are only eight doublings to go before it meets 100 percent of our energy needs.”

going to have another revolution in which agriculture is replaced with food manufactured in computerized factories. The reality is that we have plenty of resources for an expanded biological population. And the first thing that happens when countries become more prosperous is that the birth rates go down and the population growth rates become negative. They become positive again when we dramatically reduce the death rate. The doubling time of the biological population will still be very slow – 15 to 20 years – but the doubling time of the power of these technologies is one year, meaning it is going to be more than able to keep pace.

From what you're saying, it seems like in 50 years we will have artificial superintelligence that will surpass all our skills by far. Doesn't that make you afraid?

I don't see it as “us versus them,” because it's not an invasion coming from Mars. These are tools we're creating to extend ourselves. I mean, ever since we picked up a stick to reach a higher branch, we've used our tools to extend our reach, first physically, now mentally. I'm a lot smarter because I can access all >

of human knowledge with the smartphone I carry on my belt. So, we do use these devices to extend ourselves. They are part of who we are and we're going to change who we are. That's the nature of being human, to change ourselves. If you are asking me: When we start putting computers in our bodies and brains and change our organs, are we still human? Then I would answer: In my mind, yes, that's exactly what human beings are all about: changing who we are. We didn't stay on the ground, we didn't stay on the planet, and we didn't stay with the limitations of our biology. None of us would be here if we had done that.

I have a 17-year-old son and a 15-year-old daughter. So all they have to do is stay as healthy as possible for the next 20 years and all the rest will be taken care of? Intelligence will be put into their brain by computers and they will be floating around in various bodies in some virtual worlds. So, why should they bother to work hard to get on in life?

You know, if you asked a cave man or woman, "What are your challenges? What would you like to have?" They might say, "Well, I would like to have a bigger stone to put in front of my cave to keep the animals out; maybe some way to keep this fire going." If we asked, "Don't you want a more attractive Web site?" they would say, "What are you talking about?" So, I mean, people then didn't even know what was possible and what they might desire. We discover new desires and new needs. We don't spend

"That's exactly what human beings are all about: changing who we are."

much time worrying today about things that we were concerned with just 200 years ago. But that doesn't mean that we sit around doing nothing. So, decades from now, people will be doing things that we can't even define today.

Isn't the whole evolution that we're talking about just a concern of the first world, the rich, and won't four-fifths of the population keep on struggling through life as they have for centuries?

Take the mobile phone: 15 years ago, if someone took out a mobile phone at the movies, that was kind of a signal that this person was very wealthy and powerful. And they didn't work very well. Then over the next 10 years, we put out a billion cell phones. And then over the next three years, we put out the second billion. The third billion took 14 months. The fourth billion took eight months. Within less than two years from now, every person on the planet will have a cell phone. But they are already ubiquitous; half the farmers in China have cell phones with Internet access. These farmers can access all of human knowledge with a few key-strokes. They can write blogs and create knowledge. There are a hundred million blogs in China. They are a democratizing force. This means that the tools with which you can start companies like Google or Facebook are in everyone's hands. It's true of every form of information technology. Take AIDS drugs. Those cost 30,000 dollars per patient per year 15 years ago and they didn't work very well. Today, they cost 100 dollars per patient per year in sub-Saharan Africa. The patients are getting them and they work much better. Technology is moving in the right direction.

Are you a spiritual person? Do you believe in a higher power of being?

Well, I think of evolution as a spiritual process. If you look at what happens through evolution, entities become more complex, more intelligent, more creative, more beautiful and more capable of higher-level emotions, such as love. Well, now how is God described? God is an ideal that is infinite, unlimited in the very same things I just mentioned: all knowing, unlimited creativity, intelligence and love, and so forth. So, evolution moves in the direction of becoming more godlike, but never quite attaining that ideal, because it never becomes infinite. But it does explode exponentially until it approximates the way God is described. So, we can say evolution is a spiritual process and we've become more godlike as we have evolved. I envision that we will eventually spread out from this planet at an exponential pace and infuse the universe with our intelligence by converting much of it into intelligent computation and that's about as close to God as one could imagine. <

The interview took place in November 2009 prior to the Thought Leadership Conference of Credit Suisse in Zurich.

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