

# KAMP SOLUTIONS

FOR PEOPLE AND PLANET

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ALZHEIMER'S**

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#05 SPRING 2021

# THIS MAGAZINE IS MADE FROM STONE!

The magazine you hold in your hands presents a major innovation (if you are reading this on a screen, click here to upgrade your subscription to the print edition!). It provides a solution to some of the biggest environmental challenges people and planet face.

KAMP SOLUTIONS is made from stone waste. The production requires no trees and no water. It can be recycled forever. And it helps clean up polluted mining environments. Stone paper offers a disruptive innovation: It can replace 50 percent of the world paper market. Stone paper is made from

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## AND WHAT ABOUT PLASTIC?

The use of 20 percent plastic—made from oil—does not seem to make stone paper environmentally sustainable. However, the plastic consumption stands in a different light given the never-ending recycling opportunity for stone paper. This an example of a good—and sustainable—use of a fossil fuel product. Used stone paper is shredded and subsequently warmed. The heat decomposes the substance into a paste that is turned into pellets. The pellets are pulverized into new powder for a new batch of paper, with no need for additional new plastic in the mix. Stone paper is a new, innovative product which keeps being improved. Recent tests show that stone paper can also be made with biodegradable plant-based plastic.

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- According to some estimates, old growth forests make up some 15 percent of the virgin tree fiber used for making paper products.
- One ton of paper requires the logging of 20 trees.
- One sheet of paper requires 10 liters of water.
- Around 15 percent of the agricultural land in the world is used for tree farms.
- The paper industry is the 3rd most energy-intensive of all manufacturing industries in the world and uses 12 percent of the total energy consumed in global industry.
- The paper industry is also the 4th largest contributor of greenhouse gases.
- The Covid19 pandemic has only accelerated the trend of online shopping. By 2023, Ecommerce will make up more than 20 percent of global retail sales. Last year, US online sales already crossed that mark. Amazon, AliBaba, bol.com, Fedex, DHL, UPS, and many others need more boxes every day. All these boxes can be made from—better, more sustainable and cheaper—stone paper cardboard.
- For stone paper cardboard to capture 5 percent of the packaging market, we need to build 100 factories in the world.
- Mining waste lands can be converted and cleaned up, land used for production forests can be returned to regenerate nature and reverse global warming while rural communities can be rebuilt with new economic opportunities.

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Water use	59,272 liters	22,114 liters	0
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Over a decade ago we awoke to the fact that the palm oil we use contributed to the loss of biodiversity such as these elephants, and we set on a journey to become a solution of sustainability. Since then, all of the palm oil we use has been covered by RSPO sustainable palm oil, and our brands donate directly to NGOs, allowing our consumers contribute to the conservation of biodiversity in Borneo.

Our goal is to involve all levels of society to improve the world we live in, preserving and connecting life for future generations so these elephants won't remain only as photographs.

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SARAYA donates **1%\*** of all sales of Happy Elephant and other selected brands to the Borneo Conservation Trust.

\*Of the portion corresponding to the manufacturer.

Photo: Borneo Elephants mother and child come for a drink / Taketani

## THE END OF THE LINE

**M**odern humans are very good at getting from A to B. We are masters of linear solutions. From the Roman armies, roads and bridges to Henry Ford's assembly line and fast-food chains, runs an impressive history of scientific and industrial successes via straight lines.

There is one problem: Linear successes put us on a collision course with nature. There are no straight lines in nature. Nature 'operates' in circles and loops. Nature's intelligence always seeks balance in winding, complex and multidimensional ways producing regeneration and 'healing' for all participants in the ecosystem. Linear solutions, on the other hand, often come with social and environmental damage.

In the past century, modern medicine has been very successful with linear solutions. Between public health policies and antibiotics many diseases have been conquered. These infectious illnesses—from tuberculosis and diphtheria to pneumonia and hepatitis—are all caused by one organism. There is one bacterium, virus, or parasite which is the target. In such cases, a linear approach works well.

However, today most people die from complex chronic diseases: cancer, cardiovascular disease, Alzheimer's, Parkinson's, and more. In these diseases, cells and organs increasingly deteriorate and die over time. Lifestyle and environmental factors play a major role. There are many different causes; not one organism that can be targeted. Accordingly, one drug or one therapy is useless in such cases.

Nevertheless, drug companies still spend millions on research to find a miracle drug to cure a particular disease—in the case of Alzheimer's almost entirely without success. After decades of drug trials, pharmaceutical giant Eli Lilly recently announced the first 'successful' Alzheimer's drug. The drug slows down cognitive decline by 32 percent. It does not cure; it only delays the progress of the disease. Nonetheless, Eli Lilly's stock spiked in response to the news.

In KAMP SOLUTIONS, we regularly profile physicians who are offering 'integrative' and 'holistic' ways of healing. These doctors show success with approaches that are often at odds with current practices of mainstream medicine. They do not have access to the millions of dollars necessary for medical trials. The pharmaceutical industry is, for instance, not interested in researching the impact of food on disease because food cannot be patented. As a result, alternative solutions for healing spread slowly.

Professor Dale Bredesen, who appears on the cover of this issue, offers a solution that millions of people urgently need to know about. After more than 30 years of research, Bredesen has developed the first treatment program for Alzheimer's that stops and even reverses cognitive decline. In the past 10 years, Bredesen has treated some 5,000 Alzheimer patients with success in more than 70 percent of the cases (see story on page 48). People who could not be living independently anymore, are running their own businesses again!

Bredesen looks at 36 factors that can cause cognitive decline and treatment may vary substantially from patient to patient. But in all treatments food, lifestyle and environmental factors play major roles—no pharmaceutical drugs. 'The Bredesen Protocol' works and here is why that is of such enormous importance.

At the start of the Covid19 pandemic in early 2020, there were 330 million people living in the United States. So far, some 550,000 of them have died from the coronavirus. The number keeps growing, and it may ultimately hit one million. At the same time, based on current projections, from the same 330 million Americans who were alive in the beginning of 2020 more than 30 million will ultimately die from Alzheimer's disease. In other words, in numbers Alzheimer's is a much bigger crisis than Covid19.

A lot of that pain and suffering can still be prevented. It only requires a shift in thinking—from straight and linear to complex and multidimensional; a shift from 'single focus' drugs to a 'complex approach' including food, lifestyle and individual circumstances. With respect to the healing of people, we have come to the end of the line.



BY JURRIAN KAMP  
EDITOR & CURATOR

# KAMP SOLUTIONS

The solutions are there.

Not enough people know about them.

That is why innovation is not happening fast enough.

That is why problems are not solved fast enough.

That needs to change.

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# 'FOOD IS THE BIGGEST POLITICS'

GROWING MUSHROOMS TO END HUNGER: THE FOOD REVOLUTION STARTED FROM ZIMBABWE



**F**OR SOMEONE READING this magazine, hunger is a story, not a regular experience. We may come home hungry after a long hike or because we skipped lunch on a busy day. Hunger is not part of our daily worries. But it still is for an astonishing high percentage of people in the world. One in nine people does not have enough food to lead a healthy active life. Most of these people live in developing countries. However, according to a 2018 report of the United States Department of Agriculture, one in seven households with children in the US cannot afford to buy enough food for their families. The coronavirus pandemic immediately created very long lines of cars waiting at foodbank distribution centers.

"Food is the biggest politics in any society", says Chido Govera, farmer, campaigner, educator, and founder of The Future of Hope Foundation. At age seven, Govera became an orphan in rural Zimbabwe when her mother died from AIDS. She never knew her father. She always knew hunger. She helped her blind grandmother farm her little piece of land—there was never enough food. "When I was ten, my family wanted to marry me off to a man of forty simply so that I could have food."

Chido Govera ran away and sought refuge in the local church. There she was introduced to a project developed by Zero Emissions Research and Initiatives (ZERI), a global network of scientists and entrepreneurs that was started by Belgium

entrepreneur and author Gunter Pauli to provide solutions to problems of the world. Inspired by Professor Shuting Chang, a Chinese scientist who is credited with farming innovation in China, ZERI had developed a method to cultivate mushrooms on 'waste' that is within everyone's reach: grass clippings, coffee grounds, corn cobs, water hyacinth, etc. ZERI scientists had discovered that 100 kilos of water hyacinths could produce as much as 240 kilos of tropical mushrooms. Mushrooms contain many essential amino-acids and up to 25 percent of the protein found in meat. And mushrooms grow fast—within weeks. "It was an immediate solution", says Govera. "From that moment on I was no longer hungry for food; I was hungry for doing more."

From Zimbabwe, Govera started a global mushroom revolution. She began to teach how to grow mushrooms to young girls in Zimbabwe "so that they do not have to commit their young age to finding food". She began traveling, first to other countries in Africa: Ghana, Cameroon, Congo, Tanzania, and South Africa. Then to Australia, India, Colombia, Argentina, the Netherlands, Belgium, and more. Twenty years later there are an estimated 5,000 mushroom businesses in the world. Many are small women-run cooperatives like Govera started in Zimbabwe. But the mushroom business of Setas in Colombia generates some \$20 million revenue per year upon leftovers of sugar cane and coffee plants, and the annual online sales only of Back to the Roots in the San Francisco Bay Area—

## 'FROM THAT MOMENT ON I WAS NO LONGER HUNGRY FOR FOOD; I WAS HUNGRY FOR DOING MORE'

started by two college graduates after a visit of Govera in 2009 —top \$5 million. In the Netherlands, RotterZwam started collecting coffee waste from local restaurants and using it to farm mushrooms. In eight containers, the Dutch company converts 7,000 kilos of coffee grounds into 1,400 kilos of oyster mushrooms every month.

All these initiatives have one thing in common: they start with 'waste'; with something that is readily available for free. It is an approach that is radically different from the traditional institutional approach to eradicating hunger. Many big organizations—from the World Food Programme of the United Nations to dozens of international nonprofit foundations—focus on improving food security through advancing logistics and developing better farming methods. "This attitude breeds the mentality that governments and institutions can solve the problems of people", says Govera. She acknowledges that governments have a role to play, but ultimately in many parts of the world there are too many people in need to wait for governments to improve their lives. "People can solve their own problems", she says. With mushrooms.

As Govera has experienced herself and witnessed around her, the transformation is dramatic. Women who earned less than \$2 a day working on coffee plantations, began producing additional food—and income—using the waste from the plantations. A simple biological process leads to fundamental social emancipation—smiling faces, feelings of empowerment—with a surprising additional outcome in the traditional culture of Zimbabwe: girls who know how to farm mushrooms mandate a double dowry.

"Of course, people cannot only eat mushrooms", says Govera. She teaches women in rural areas that the mushrooms, like meat, should be added to traditional diets. In Zimbabwe, most poor people

eat sadza, maize porridge with vegetables. Adding mushrooms means adding critical nutrients—and health. But there is more. The waste of the mushrooms is perfect chicken feed, or it can serve as fertilizer to grow vegetables and grains. One simple practice kickstarts local economic development.

Govera has recounted her life story in her book *The Future of Hope*. The story prominently features her blind grandmother who at age 100 took care of young Chido. It was her grandmother who initiated Govera in the knowledge of mushrooms. She took her foraging in the forest. The young child would run around gathering mushrooms and then they would sit under a tree. Grandmother would smell and touch the mushrooms and would explain which ones they could eat and which ones were poisonous. With these lessons, grandmother prepared Govera for the mushroom opportunity that was ultimately presented to her and that would save her life. Govera: "In the forest my grandmother taught me we had to appease the gods so they would give us more mushrooms next year. Suddenly, I could grow and harvest the same mushrooms myself. It was like magic."

"I owe a lot of gratitude to my grandmother", she says. "She instilled the biggest hope in me. She gave me security and self-respect. Without her I would not have survived many challenges." Today, Govera provides the same "mother" support for a growing group of young orphans who she has adopted over time. "Every child needs to get that kind of a (grand)mother to shape them." Her book inspired the launch of *The Future of Hope* foundation, because "I did not just want to tell my story. I want to see action in real life". The foundation offers various programs teaching orphans how to sustainably feed themselves through growing mushrooms and more crops. *Future of Hope* also mentors mothers and grandmothers to take care of orphans and others in need.

Food sustainability stands at the core of all the work of Govera and her foundation. "When people learn to control their food, they can control many other aspects of their lives", she says. "Lack of food makes people do all kinds of things. They say a hungry man is an angry man. How can we build peace when people are hungry? How can children learn when they are hungry? There cannot be democracy with angry and hungry people. That is why food is so important." [JK]

More information: [thefutureofhope.org](http://thefutureofhope.org)

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# FIGHTING FIRE WITH LEMONS AND FLOUR

FLAME RETARDANTS PROTECT PEOPLE FROM FIRE. THEY ARE MADE FROM VERY TOXIC CHEMICALS. THERE IS A NATURAL, HARMLESS ALTERNATIVE: THE MOLECULAR HEAT EATER.

**W**HY IS YOGHURT the best extinguishing agent when your tongue is on fire with chili peppers? That was the question that Swedish inventor Mats Nilsson asked himself when he was looking for a healthy alternative for flame retardants. For decades, these chemicals have been added to many consumer products to protect people from fire and minimize damage as much as possible.

Of course, we do not want the cushions of our sofas, the mattresses of our beds, our curtains, our airline seats or the toys of our children to easily catch fire. But that understandable concern has created a new problem: Massive numbers of chemical cocktails have been and are still being released into the

environment. The annual value of the global flame-retardants market alone is 7 billion dollars and grows with 7 percent per year.

There are chemicals in the air we breathe, in the dust on the floor, and in the water we drink. Toxic flame-retardants can be found in human breast milk and in fish. Research shows that the quantities are dramatically increasing. According to some reports the concentrations of the toxins are doubling every two to five years. A growing body of evidence shows that many of these chemicals are associated with serious adverse health effects in humans. They can impact sexual function and fertility as well as neurologic function. They can cause cancer. Bromine compounds from polybrominated diphenyl ethers (PBDEs)—the main flame retardant category—in the blood and tissue of children are being associated with permanent brain damage and movement dysfunctions.





**THE MOLECULAR HEAT EATER IS A MIX OF CITRUS FRUITS, GRAPES, FLOUR AND CELLULOSE**

There is also the risk that our bodies mistake chemicals as hormones. The structure of the pentabromodiphenylether molecule resembles the structure of the thyroid hormone tyroxine. When pentabromo-diphenyl ether was forbidden some years ago, clever chemists replaced penta (5) with deca (10) to create decabromodiphenyl ether. However, when that molecule decomposes, it releases a similar toxic bromine gas.

It is not for lack of an alternative. Nature has been containing fire for millennia. In nature,

the exchange between heat and energy is managed through the balance between acidity and alkalinity measured in the pH value. That is why you want to 'cool' your mouth with alkaline yoghurt after eating an acidic chili pepper.

Mats Nilsson learned how to manage fires as a child. His grandfather was a welder at a shipyard. He always had to be careful that he did not burn his shirt while he was working. Grandfather used to drink apple cider during his lunch breaks. He noticed that, when he spilled the cider on his shirt and let it dry, that spot would never get burn marks. Mats' grandfather began experimenting with extinguishing fires and involved his grandchildren in his investigations. Mats learned to put out fires shaking a Coca-Cola can and spraying the gas—carbon dioxide—on the fire. The experiment taught him the basics of a modern fire extinguisher that takes away the oxygen and removes the heat of a fire through spraying carbon dioxide on it.

His childhood experiences with his grandfather inspired Nilsson to get his fireman license while he was studying at university. He worked as a fireman for two years before he moved on to a career as product developer. Years later, a thermal energy company asked him to develop

a safe, toxic-free, and eco-friendly alternative for existing flame-retardants. Nilsson, who had studied mathematics, physics, chemistry and electronics, and remembered his grandfather's fire lessons, began researching citrus fruit. He knew that lemons have the same cooling effect as yoghurt and stomach acid. He also knew that people have been eating lemons forever without negative side-effects. Working with natural acids that people have been used to for thousands of years, seemed a much better idea than gambling with synthetic chemicals.

Nilsson experimented and developed a product. However, the invention ended up on a shelf. That is where it was in 2003 when Nilsson's wife was looking for an original entry for a Swedish competition for environmentally friendly products. The Molecular Heat Eater made it to the finals. More praise followed and that led to participation in the BBC World Challenge, a competition for ideas that "really make a difference for the world". To his surprise, Nilsson also reached the finals of that competition. From there, it went fast. Nilsson refined and completed the product and filed for a patent.

The Molecular Heat Eater comes in a powder, a liquid and a gel. The exact formulation is a trade secret, but Nilsson is clear that his product is basically a mix of citrus fruits, grapes, flour and cellulose. The mixture of alkaline bases and acids, that the human body can easily handle, absorbs the thermal energy, extinguishes the flames and cools the burning material. Nilsson's invention is, in scientific terms, a combination of carboxylic acids and inorganic alkalis that produces a sustainable salt that does not begin to decompose uncontrollably.

The Molecular Heat Eater is used to treat synthetic materials like plastics. Nilsson has since also developed another flame-retardant product, Bio-Eco, that is used to treat natural fiber materials. This product is very successful in preventing and containing forest fires without polluting the environment with chemicals. It can also be sprayed on buildings to protect them from fires. In tests, Nilsson's natural flame retardants perform as well—if not better—than conventional toxic chemical products.

The best news is that Nilsson's healthy alternative flame retardants are cheaper than

**THE NATURAL FLAME RETARDANT IS ALSO VERY SUCCESSFUL IN CONTAINING FOREST FIRES WITHOUT POLLUTING THE ENVIRONMENT WITH CHEMICALS**

the toxic chemical cocktails that pollute the environment and endanger public health because they can be made from the waste of plants. Moreover, according to Nilsson, existing chemical flame retardant production facilities can be adjusted to new natural substances for a one-time investment of only thousands of dollars. Finally, the use of plant waste also means that a natural flame retardant industry will contribute to reducing carbon emissions.

Despite these clear benefits and advantages, Nilsson's products are not yet sold on a large scale. Why not? "The flame retardant market is in the hands of a few large corporations that together form an oligopoly and are in no way open to change", says Nilsson. They also claim that their products are not harmful. It does not help that health regulations are set by parliaments that have very few members with a scientific background in chemistry. These representatives of the people are easy targets for lobby groups of industries.

Nilsson stands ready to share his inventions with any company who wants to produce them, ideally in local production facilities close to the waste materials. As global warming seems to lead to an increase in fires in nature around the world, the awareness about opportunities for natural flame retardants and fire protection should grow. And humans may ultimately learn that nature has the best and most healthy answers for almost every challenge. [JK]

More information: [www.trulstech.com](http://www.trulstech.com)



# TREATING UNTREATABLE CANCERS

[ by BRYAN HUBBARD ]

AROUND A QUARTER OF ALL CANCERS ARE UNTREATABLE BECAUSE OF A GENE MUTATION. BUT A NEW THERAPY, BRINGING TOGETHER HIGH-DOSE VITAMIN C AND FASTING, IS PRODUCING SOME EXCITING RESULTS.

**IT IS A SECRET**, oncologists rarely share with their patients: Around 25 percent of all cancers are currently considered untreatable, and the prognosis is worse for colon (colorectal) and lung cancers, with half of these immune to chemotherapy.

But the untreatable may soon be very treatable with a new therapy that blends two approaches that have always been relegated to the fringes of medicine: fasting and high-dose vitamin C, given intravenously. Both have had hit-and-miss research results when used independently but combining the two seems to have a super-boosting effect that kills these hard-to-treat cancer cells without affecting the surrounding healthy cells.

The therapy is still in its early stages. It has been tested on lines of colorectal cancer cells in the laboratory with “remarkable effects”, says lead researcher Valter Longo at the University of Southern California’s Longevity Institute. Each therapy killed some of the cancer cells on their own, “but when used together, they had a dramatic effect, killing almost all cancerous cells.”<sup>1</sup>

Longo and his team then tested the combined therapy on laboratory mice and saw the same positive results, and the cancer started to reverse. Excited by the results, five clinical trials on breast cancer and prostate cancer patients are now underway.

Although a variety of cancer cells were used in the experiment, the team discovered that the vitamin C/fasting

combination was especially effective against cells that had a special mutation, one that makes cancer untreatable. This mutation protects the cancer cells from even the most powerful and toxic chemotherapy drugs—and when the mutation is detected, oncologists are told not to treat as it will probably destroy the patient’s quality of life for no good reason.

The mutation is called KRAS (Kirsten rat sarcoma viral oncogene homolog), but aside from smoking, researchers are not sure why it happens. It is a gene that is responsible for sending signals to cells to grow and divide, but when it mutates those signals can start the process of cancer. If a diagnosis of cancer was not bad enough, one that has the KRAS mutation is a death sentence. In

one study, 63 percent of lung cancer patients who had the KRAS mutation died compared with 32 percent who did not have it.<sup>2</sup> In another, looking at 116 lung cancer patients, just 11 percent with the mutation had a five-year survival rate, but 64 percent of those without the mutation achieved the five-year mark.<sup>3</sup>

The mutation creates a protective shield around the cancerous cell. Chemotherapy drugs—such as panitumumab, cetuximab and erlotinib—have had no effect whatsoever in patients with KRAS-mutated colorectal and lung cancers.

Until Longo’s discovery, oncologists have been at a loss as to how to treat around a quarter of all cancers they see. Fasting and vitamin C have been prom-

ising options for years, but the research has not been consistent, with a positive result soon being overtaken by a negative one, and, as a result, both have been filed in the burgeoning folder of unproven cancer therapies.

There is a good scientific basis for fasting as a cancer therapy. While the American Cancer Society advocates the cancer patient eat plenty of calories and protein, especially during chemotherapy, it is also known the diet feeds the cancer. In 1931, the German doctor Otto Warburg noticed that cancer cells were relying on sugar—rather than oxygen—for their energy, and this process is recognised as ‘the Warburg effect’.

Starve the body of sugars and the cancer cell will also die, or so the theo-

## A fast of sorts

A true fast—no food and just sips of water—is extreme, and few can stay on it for very long, but it could be very good for us. Seeing the dilemma, Valter Longo at the University of Southern California’s Longevity Institute has devised a five-day fast that delivers the benefits but avoids the agony. Longo has developed his own commercially available fasting plan, L-Nutra, which ‘mimics’ a true fast, and consists of vegetable soups eaten twice a day, olives, vegetable chips, nuts and bars made of nuts. He has also developed supplements, and drinks and teas to keep the body hydrated.

He recommends people fast for five days every six months or so, but there are some key dietary changes that he advocates everyone should follow most of the time:

Reduce your protein: Eat just 0.31 grams of protein per pound of body weight a day. A person weighing 140 pounds (63.5 kg) would be allowed to eat 43 grams a day;

Cut down on fish: Eat just one to two servings a week. Replace with plant-based food, such as vegetables;

Reduce sugars: An essential part of any healthy diet, reduce your sugar intake to almost zero, and cut back on pasta and bread;

Take vitamins: The essential vitamins include essential fatty acids, omega-3 and -6, and vitamin C;

Eat good fats: Get your fats from olive oil, nuts and fish;

Cut back on alcohol; While fasting is good for almost everyone, Longo cautions that people over the age of 70 should check with their doctor before starting.

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## THE COMBINATION OF FASTING AND HIGH-DOSE VITAMIN C SEEMS TO HAVE A SUPER-CHARGING EFFECT THAT KILLS HARD-TO-TREAT CANCER CELLS WITHOUT AFFECTING THE SURROUNDING HEALTHY ONES

ry goes, and the process has been witnessed in laboratory tests. In one, 17 lines of cancer cells, including samples of melanoma, glioma and breast cancer, were 'starved', and the researchers said the results were as successful as anything achieved by chemotherapy; the cancer cells stopped growing and more significantly, those that were normally resistant to cancer drugs—possibly because of KRAS mutation—suddenly became sensitive to the drugs. Fasting made the untreatable cancer cells treatable.<sup>4</sup>

A five-day fast can produce a 50 percent fall in glucose—the sugar in the blood—which is feeding the cancer and helping it grow, estimates Longo. The fast, followed by the resumption of a normal diet, could also protect the cancer patient against the worst ravages of chemotherapy without him losing any weight.<sup>5</sup>

But to really see a turnaround in the cancer, the patient would need to follow a strict diet, with a 40 percent reduction in protein, for months, and this is where the theory hits up against the hard wall of pragmatics. No oncologist would allow his patient to be on such a strict diet for months during chemotherapy, indeed his ethical code would prevent him from even suggesting it, and so there the fasting approach ran out of road.

A strict fast is just that: No food whatsoever other than regular sips of water, and this is extreme for even a healthy person let alone someone with cancer. Seeing the dilemma, Longo has developed his own version of the fast, the fasting mimicking diet (FMD), which he says delivers all the health benefits of a true fast without starving the patient (see sidebar: A fast of sorts).

While fasting has been on the outer fringes of cancer treatment, vitamin C has at least been courted by the mainstream. Touted by American biochemist Linus Pauling more than 40 years ago, high-dose vitamin C (ascorbic acid) therapy was found to reverse end-stage cancers. The way the vitamin was delivered did not seem to matter; patients given the vitamin orally or intravenously were improving, the researchers said.<sup>6</sup>

But the therapy was quickly abandoned when two separate clinical trials, with high doses given orally, could not replicate the results. The cancer patients were getting sicker.<sup>7</sup> This could have been because Pauling got it wrong: it does matter how the vitamin is admin-

istered, and it has to be done intravenously. One study showed that cancer patients on a vitamin C drip, being given an average of 10g a day, were improving<sup>8</sup>, but a later trial, following the exact same protocols, failed to see any improvement in a small group of patients with advanced cancer.<sup>9</sup>

But why were researchers coming up with such different results? High doses of the vitamin can trigger a biological process where a KRAS-mutated cancer cell produces ferritin, a protein that binds iron, and iron is associated with cancer growth, especially of colorectal cancer. There is a direct correlation between levels of iron and chances of survival in colon cancer cases; the higher the level, the lower the survival rate.

And this could be why Longo's two-punch approach of fasting and vitamin C is working. Fasting reduces levels of ferritin in the body, and this allows the vitamin C into the cancer cell and kill it.

The approach could also make chemotherapy more effective, but that is a short-term gain. Longo sees the day when mild drugs without the neutron-bomb effects of chemo will be given to the cancer patient. And, possibly, the day will come when cancer is not treated with any drugs at all, but just with a short fast and vitamin C.

### How much C?

Longo recommends going on a vitamin C 'feast' for a few weeks every six months when up to 6 g should be taken very day, or up to the level of bowel tolerance. Beyond that the vitamin can cause diarrhea.

But therapeutic doses for treating cancer and other chronic problems can be higher still. Doses that have been given in clinical trials have ranged from 0.15 g to 0.7 g per kg of body weight every day. At the upper level, a person weighing 140 pounds (63.5 kg) would be taking nearly 10 g a day. That is 50 times the highest recommended dose of 2 mg, and a far cry from the recommended daily allowance of just 95 mg.

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**'CAN WE MAKE ALL THE ROADS WHITE? AND THE ROOFS? WE DIDN'T FIND A BREAKTHROUGH WAY OF DOING THAT'**

# 'I CAN'T GAMIFY SOLVING THE CLIMATE CRISIS'

SUN MICROSYSTEMS CO-FOUNDER BILL JOY WANTS TO HALVE GLOBAL CARBON EMISSIONS WITH THREE BREAKTHROUGH TECHNOLOGIES

**B**ILL JOY HAS a plan to cut global carbon emissions in half. More than 10 years ago, as a partner of San Francisco-based venture capital firm, Kleiner Perkins, he identified a list of 25 disruptive cleantech "grand challenges". He attacked the list with the same rigor and analytical ability with which the co-founder of Sun Microsystems, in the 1980s, designed the computer codes that laid the foundation for the online world we are living in today, and that made him a billionaire. Only three technologies survived the decade of thorough research and analysis. Joy put his money behind these "super impactful" innovations: "I'm convinced they can change the world."

The analysis of the technologies took so much time because Joy and his team tried to imagine how the selected innovations could truly transform society. One of the projects was an attempt

to replace the albedo that we would lose when the ice cap of the North Pole would melt, and we lose the reflectivity bouncing back the warming rays of the sun. "Can we make all the roads white? And the roofs?, we wondered", Joy says. "We didn't find a breakthrough way of doing that."

We are meeting in New York in early May, the day before one of these companies, Beyond Meat, goes public on Nasdaq. Six weeks later, the stock of the company, that offers plant-based versions of beef and pork, has quadrupled. Beyond Meat's success underscores the depth of Bill Joy's investigations. A 2016 study by the University of Oxford shows that 70 percent of the global warming problem would be solved if we would all become vegans. However, worldwide meat consumption has increased five-fold in the past 50 years and continues to rise. Joy: "If we want to quickly sub-

stitute the impact of protein, we need to match people's existing habits and expectations."

Meat substitution can reduce carbon emissions with some 20 percent, Joy is convinced. Still, changing behavior is the harder part of the challenge to reverse global warming to which Bill Joy has committed his resources and time. His number one, and "most impactful" solution is: "inexpensive, safe, non-toxic, abundant" batteries. Joy: "There's a clear trend towards electrifying everything. So, we need renewable electricity. The easiest way to get that is from solar and wind. With batteries we can make the grid 100 percent renewable." But these batteries need to be cheap and energy-dense enough "to fully electrify the grid and fully electrify transportation".

Today's lithium-ion batteries don't meet Joy's conditions to power the

## 'IS IT ANY SURPRISE THAT THE ADDICTIVE STUFF OUT-COMPETES THE NON-ADDICTIVE STUFF?'



world: "They are expensive, toxic, unsafe, non-rechargeable, and they are made from rare raw materials." In these batteries, ions are kept separate from electrons in a liquid. And liquids come with dangers. That's why we keep hearing stories of lithium-ion batteries that exploded. The use of liquids also limits the options for chemical reactions. Joy: "For example: sulphur is something you would love to use in a battery. It's light and almost free but when you put it in a liquid you get re

Joy has invested in a company that has invented a battery technology where the liquid is replaced with a polymer. That polymer is the game-changer he was looking for. It makes the battery chemistry safe, cheap and rechargeable. Furthermore, the use of a polymer takes away the restrictions on materials and "opens up the whole periodic table". "You don't have to mine the deep ocean or the Congo for resources like cobalt and nickel", Joy adds.

"With this technology, we can completely eliminate toxic lead acid batteries, and I can give you enough rechargeable batteries to power your house for 24 hours forever for a one-time investment of \$1,000. That's really cheap." Ionic Materials is working with battery producers to introduce the new technology in their production processes. "When the battery is fully fleshed out, we have reduced 25 percent of the emissions", says Joy.

The third component of his 50 percent greenhouse gas reduction strategy is focused on the construction sector that is responsible for between five and seven percent of the emissions. Cement is bonded with water and, in the process, CO<sub>2</sub> is released. Solidia cement is a breakthrough innovation: the bonds are made using carbon dioxide instead of water. Joy: "This cement takes CO<sub>2</sub> from the air; it draws down emissions."

The very technology that has brought humans on a collision course with nature in the past decades, also has to save humanity. That's the—controversial—key message of Joy's climate plan. In 2000, he published a gloomy essay about the future of technology in *Wired*

under the title "Why the future doesn't need us". He's still apprehensive and conflicted. "If technology is sufficiently powerful, and we just let the market take us to wherever random chance takes us, we may end up in a really undesirable outcome", he says.

Joy misses the ethical commitment by business and political leaders "to do the right thing". "The capitalism machine just runs. Marketing people create desire. The oil companies knew about global warming. Pharmaceutical corporations know that opioids are addictive. Facebook knows it's addictive. Smart phones are addictive. Is it any surprise that the addictive stuff out-competes the non-addictive stuff? That's Darwinism. That will only change when you decide to stop."

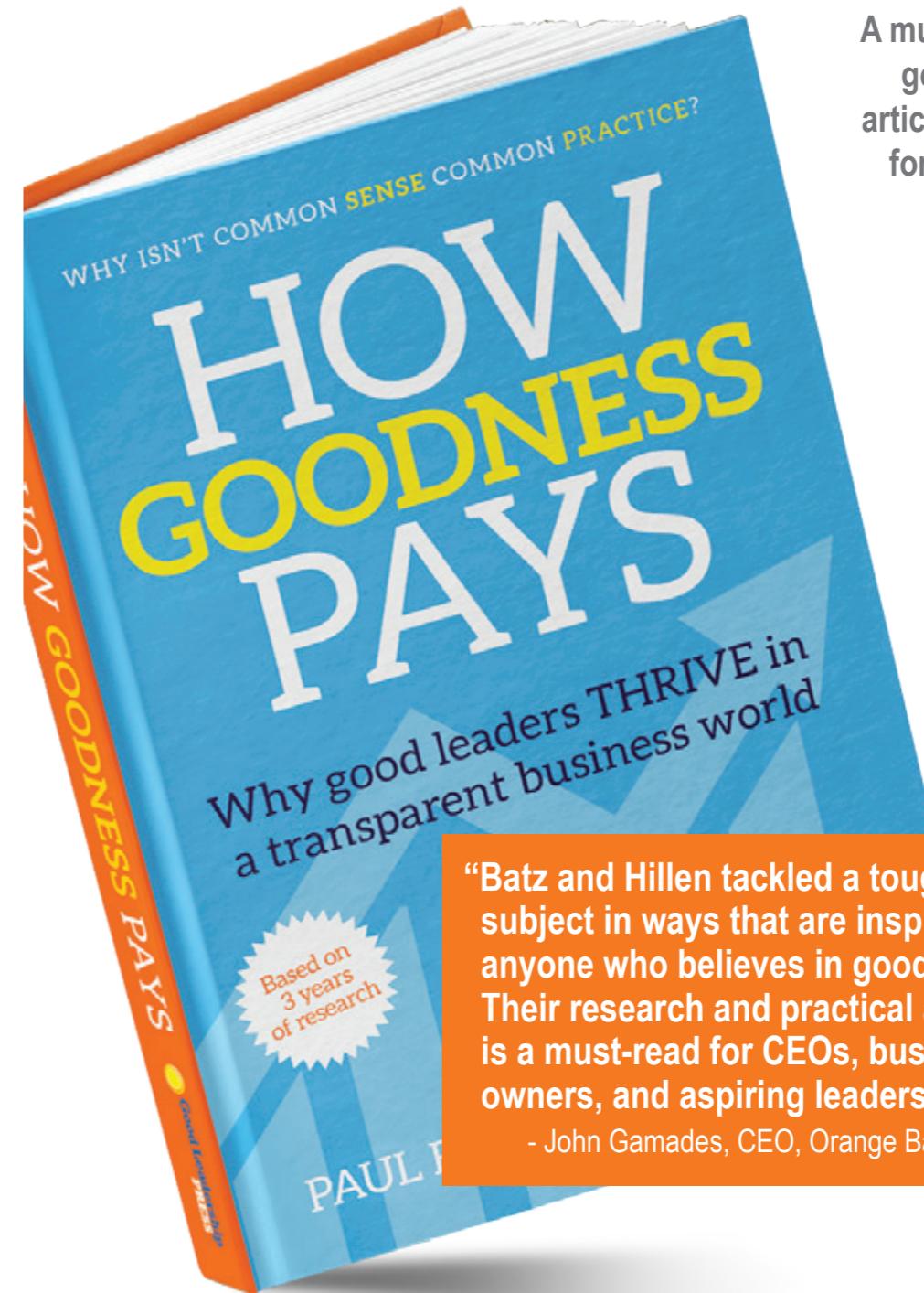
Joy knows that that decision to get serious about the sustainability issue won't come soon in the current "very anti-intellectual" political climate in the United States. "I thought that the melting of the North Pole ice cap, the hurricanes and the wildfires in California would have already made us realize that we have got to stop." He stresses the tipping points that drive environmental challenges. "People keep hearing that CO<sub>2</sub> levels are going up, and it seems like nothing changes much. There always seems to be more time. However, there's point where things are barely in balance anymore. The forest that has become drier every year for 10 years because of climate change suddenly becomes a massive fire. Then people ask: 'What happened?'. It probably wasn't very much; it was a tipping point."

Joy knows there could be a catastrophe at which point choices may be limited. His mission is to help humanity to be ready for that moment: "I have tried to get the best tools in place—like a survival kit—that we can quickly scale up when the time comes to push the panic button. It's not expensive to fix. But if people are not feeling the pain enough, it's really hard to focus on things which aren't necessarily very fun to solve. I can't gamify solving the climate crisis." [JK]

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# THE BIGGEST DEVELOPING MARKET IN THE WORLD IS NOT A COUNTRY, IT IS WOMEN

ANDREA JUNG, PRESIDENT AND CEO OF MICROFINANCE INSTITUTION GRAMEEN AMERICA, AND HER MISSION TO ERADICATE POVERTY IN THE UNITED STATES.



**W**ITH EXTENSIVE STIMULUS programs, governments around the world try to protect their citizens from the painful economic impacts of the corona pandemic. Recently, US Congress approved an almost \$2 trillion stimulus package. It is clear that people need help. But the best governments can do is offering a temporary solution.

In the 1970s, Muhammad Yunus started Grameen Bank in Bangladesh. The bank offered microloans to poor people who live in ongoing economic crises

situations. Grameen Bank showed that a little money would change lives and that borrowers repaid their loans almost 100 percent—a figure traditional banks can only dream of. Microfinance has become a successful system for—mostly—women in developing countries to overcome poverty. For his innovation and his contribution to poverty alleviation, Yunus was awarded with the Nobel Peace Prize.

When the Great Recession hit the United States in 2008, Yunus insisted that the same microfinance model would work for poor women in the richest country in the world. He started Grameen America.

The microfinance institution is led by Andrea Jung. Jung is the former Chairman and Chief Executive Officer of Avon Products. She is also a board member of General Electric and of German automotive corporation Daimler (Mercedes). Jurriaan Kamp spoke with Andrea Jung about what microfinance can do for people in wealthy countries and about a different kind of economic stimulus with groundbreaking, life-changing and long-lasting impact.

**JURRIAN KAMP:** *Microfinance has contributed to poverty alleviation in many developing countries. Why is such a system necessary in the United States, the richest country of the world?*

**ANDREA JUNG:** There are differences, for sure. But the basic situation is the same: Traditional banking disadvantages women, people of color, anyone who does not have a fair credit score. The financial system shuts these people out. They need a mission-based banking system—that is not focused on making profits—to get going as entrepreneurs. That is what Grameen America is.”

*Does it work?*

“After 13 years, we have provided loans for over \$1.8 billion to more than 134,000 women and their families in 15 cities in the US. The pay back ratio has

been well over 99 percent. The evidence is clear: If you give a woman in poverty the right to be banked, the impact on their families, their children and their education, and their communities is huge. What was proven in Bangladesh, works in the United States in exactly the same way.”

*The default rate of small businesses which get loans from traditional banks typically hovers around 20 percent. The women entrepreneurs of Grameen America repay their loans at more than 99 percent. How do you explain that difference?*

“Grameen’s philosophy which won Muhammad Yunus the Nobel Peace Prize is to turn the banking system on its head. Traditional banking is based on your past, not on your future. It is about your past behavior, your past credit score as opposed to your commitment to change. Grameen America does not require a credit score. We require the discipline to attend weekly group meetings with some 30 fellow entrepreneurs. We also require our loan recipients to follow a financial training. They can learn to establish their own credit, become banked and make a difference.”



## LASTING IMPRESSIONS THE STORY OF GRAMEEN MEMBER SHEILA

Sheila owns Lasting Impressions Hosiery and Accessories, a mobile boutique on 125th street in Harlem, next to the iconic Apollo Theater. She started her business selling hosiery, jewelry and accessories from a table as a street vendor. It was physically demanding, and the harsh New York winters made it difficult for Sheila to work outside year-round.

Through her resourcefulness, Sheila purchased and refurbished a truck to house her mobile boutique. By expanding her business to a nimble truck, Sheila is now able to travel with her mobile boutique and run her business throughout the colder months. With her first loan from Grameen America, Sheila added contemporary and vintage clothing to her

store and the business began to thrive. “By having loans from Grameen America, I am able to plan,” Sheila said. “Where before I had a wish list, now I am able to grow my product line and expand my business through loans from Grameen America.”

Sheila has seen her profits and credit score grow, and as a mother of two adult children, she is proud of being a role model to her family. In the future, Sheila’s goal is to move towards more recycled and sustainable pieces, and one day expand to a storefront location in the same neighborhood.

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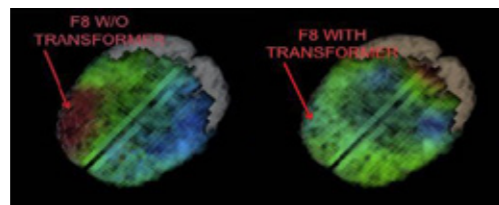
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## 'TRADITIONAL BANKING IS BASED ON YOUR PAST, NOT ON YOUR FUTURE. IT IS ABOUT YOUR PAST BEHAVIOR AS OPPOSED TO YOUR COMMITMENT TO CHANGE'

program. Many of our operations are fully sustainable. Last year, we made close to \$2 million of excess income in our first operation that we opened in Jackson Heights (New York City) in 2008. All that money went back into fueling other programs, funding more members. Grameen is, according to the definition of Muhammad Yunus, a 'social business'. Our business is designed to serve society, not to generate profits for shareholders."

*People often say: 'Go and get a job'. Grameen says something else: 'Go and create your own work'. Does that work for everyone?*

*How has Grameen been organizing these weekly group meetings during the pandemic?*

"Almost overnight we had to pivot our model to go virtual. Today, we are hosting 2,500 Zoom meetings with 30 women each week. The meetings have an attendance rate of 80 percent or more. Our women are eager for the social connection and they want the training—even if it cannot be provided in person."

*Grameen America has so far successfully reached 134,000 disadvantaged women in the United States. There are the needs of millions more women and their families to be addressed. How quickly can you multiply Grameen's reach?*

"Today, through our 134,000 members with on average three children we impact more than half a million people. There are more than 40 million people living in poverty in the US. That is our opportunity. We need to be exponential in terms of our expansion. Ten years from now, we should be reaching millions of women. But this should not be just Grameen's mission. This also applies to all community development financial institutions (CDFIs). It is just unacceptable that most members of disadvantaged communities do not have access to fair capital. That needs to change. A little bit of capital is life changing to Main Street."

*Regular for-profit businesses generate the cashflow they need to finance their operations. As a non-profit, Grameen America, is dependent on donations. Does that model threaten the long-term sustainability of the initiative?*

"Grameen is a non-profit business. It is still a business. We make business decisions all the time: How can we make operations more efficient; how can we scale? The only difference is that the profits do not go to shareholders. They go back into the

"One of my favorite quotes of Muhammad Yunus is: 'Human beings are not born to work for each other'. A caveman did not wake up in the morning thinking 'which other caveman is going to employ me today?' Humans are self-sufficient. Sometimes I hear people say, 'I do not have an entrepreneurial spirit'. I think that is wrong. Every single person can be entrepreneur. It is simple. You get a loan. You buy a chicken. The chicken lays eggs. You sell the eggs. You pay us back. You do not have to have a job. You can make a job. The 134,500 women who received our small loans have created 141,000 new jobs. That is the magic of our program."

*Grameen America focuses its services exclusively on women. Why?*

"There have been many studies that show that giving women equal pay and equal access to capital would add trillions of dollars to global GDP. The lack of inclusion and lack of equity are the biggest potential growth drivers. When Muhtar Kent was CEO of Coca-Cola, he said: 'The biggest developing market in the world is not a country, it is women.' If we give women the opportunity, they will make life better for all of us. I have seen tens of thousands of women who are waiting for a chance to realize their dream." [JK]

You can listen to the podcast of Jurriaan Kamp's interview with Andrea Jung at the **Kamp Solutions Podcast Series** at Spotify or Apple Podcasts.

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# MY REASONS FOR OPTIMISM ABOUT THE FUTURE OF RACE RELATIONS

[ by MICHAEL TAYLOR ]

**M**Y FIRST EXPERIENCE with racism occurred when I was approximately 10 years old. I was teasing a white female classmate of mine about being smarter than her because I had more A's on my report card. The next day she approached me and said, "my mom says you are not smarter than me because white people are smarter than niggers".

My most painful experience of racism occurred while I was in high school. During that time, I met and fell in love with my high school sweetheart. She was a fun, spirited, sweet, caring and beautiful girl who loved to skip school and hang out at the beach. When we met, she was a C and D student who would rather be hanging out with her friends instead of going to school. After dating for a few weeks, I convinced her to stop skipping school and focus on her grades. Within a few months she became an A and B student.

Everything was perfect! We shared that high school infatuated-type love that you remember forever. But there was one small problem. She was white.

After dating for approximately a year, I received a phone call from her father and he was not happy. During our conversation I mentioned how happy his daughter was and how she had turned her life around and become such a good student. I told him how much I really cared about her and he should be happy she was doing so well. He then went into a rage about how he would never allow his daughter to date a nigger.

When I mentioned that his daughter should have the right to date who ever she wanted to, this is what he said: "There is no way I will allow my daughter to date a nigger. I will kill you before I let that happen!" I was stunned! It was not just the words that hurt, it was the anger and vitriol I heard coming through the phone that broke my heart. It was apparent that he hated all black people and it did not matter to him that I was actually a very good influence on his daughter.

As racial tensions have escalated over the past four years due to the former president's refusal to denounce white supremacy and the unnecessary killing of George Floyd which ignited the Black Lives Matter movement, it is easy to conclude race relations are getting worse in the United States. But is that really true? Are race relations getting worse?

As a man who happens to be black and has experienced every imaginable type of racism, my answer to that question is "no". I do not believe race relations are getting worse.



Coach **MICHAEL TAYLOR** considers himself to be an irrepressible optimist with a passion for the impossible. He is an entrepreneur, author, and motivational speaker who empowers men and women to transform their lives from the inside out through his books, courses, and lectures. His new book is: **Don't Believe the Hype of the Negative Media.** [www.coachmichaeltaylor.com](http://www.coachmichaeltaylor.com)

According to the late futurist and author Barbara Marx Hubbard, human beings are still evolving. We are evolving to what she calls Homo-Universalis, a human who is more aware. In my book *Shattering Black Male Stereotypes*, I identified a Collective White Belief System (CWBS). In America, this belief system has implemented systems and laws that falsely promoted white supremacy. In the beginning, most white people accepted this belief system. During the Civil Rights Movement the CWBS began to shift. It has been said that it takes a majority of 51 percent to change people's beliefs, consciousness and culture. We are still in that process. This country and the world will continue to become more diverse. Ultimately, the CWBS will evolve into the CHBS, the Collective Human Belief System.

As I reflect back over my short 60-year life span, I am encouraged by the progress we have made. If we remain on the same trajectory, I believe we will get to a point where racism no longer exists and all human beings live in harmony.



# EATING COFFEE, SAVING LIVES AND RAINFORESTS

[ By GUNTER PAULI and JURRIAN KAMPI ]

AN INNOVATION FROM LATVIA  
INTRODUCES A GROUNDBREAKING NEW  
BUSINESS MODEL THAT CREATES  
ABUNDANT VALUE FOR COFFEE FARMERS  
AND HEALTH FOR CONSUMERS WHILE  
REGENERATING RAINFORESTS.

**T**HIS IS A STORY about coffee—to be precise: about eating coffee. It is also a story about potentially the largest—and surely the only profitable—regeneration of nature project ever undertaken. It is a story that begins in a small country with two million inhabitants on the Baltic Sea between Lithuania and Estonia.

Few readers would picture groundbreaking coffee innovation to come from Latvia. But it is the home of passionate cyclist, Raivis Vaitekuns. For years, Vaitekuns spent most of his free time cycling through the forests that cover more than half of his county. Then, one day with two cousins he decided to make his favorite activity their business. They opened a bicycle repair shop in Riga that quickly became the meeting point for the biking enthusiasts in Latvia's capital. As more and more people chose the shop as a starting point for their bike rides, Vaitekuns thought they could add a dimension to their business by serving coffee to the cyclists. An espresso bar was added which only made the place more popular.

The initiative allowed Vaitekuns to explore another hobby of his: enjoying coffee. He had always been an aspiring barista and now he had the perfect business excuse to develop his talents. As his barista expertise and his appreciation of good quality coffee grew, Vaitekuns began to realize there were many places where the coffee was not as good as he liked it to be. He realized that during his travels he was often ordering tea simply because he did not like the quality of the coffee that was served at, for instance, airports.



# MEET THE MAN WHO CALLED THE 2020 STOCK MARKET CRASH.

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A barista in Riga, Latvia



## A COFFEE FARMER GETS 1.5 CENTS—OR 0.5 PERCENT—OF THE \$3 THAT STARBUCKS CHARGES FOR A CUP OF COFFEE

a pure coffee substance that looks and feels like a chocolate bar but has a strong coffee character. In 2016, they introduced Coffee Pixels in Latvia and began production in a small local factory.

The whole berry Coffee Pixels offer a solution to a big problem in the coffee industry; a problem that contributes to the unhealthy trend of deforestation in the tropics. The cup of coffee you drink contains some 2 grams of the harvested bean. That harvested bean is only 0.2 percent of the harvested biomass. That means that coffee farmers produce 99.8 percent waste to serve you a cup of coffee. The waste does not produce any income for the farmers. We should not be surprised that coffee farmers struggle to make a living and are obsessed with producing more and more to make ends meet while they keep cutting trees along the way.

Four hundred years ago, coffee was a mysterious custom in the Islamic world. It was only commercially cultivated in Ethiopia and in Yemen on the Arabian Peninsula. You could find the world's first coffeeshop in Constantinople at the Bosphorus where Europe and Asia meet.

With his cousins, Gundars and Andrew Vaitekuns, Raivis began thinking about creating a high-quality coffee product that would be suitable for travel. A take-away cold brew coffee drink seemed a solution, but they also realized that such a cold product would not have a great market in a Nordic country like Latvia... Instead, they decided to look into an edible coffee product that would also solve another problem: the enormous amount of waste—coffee grounds—that is produced in the coffee shops.

They started developing a bar made from the whole coffee berry. They recombined the roasted coffee beans with the dried antioxidant-rich husk—the cascara—of the coffee berry. Subsequently, they used a taste- and odor-less cocoa butter to create

Today, coffee is one of the most widespread and best understood words in the world, coffeeshops are everywhere, 25 million farmers in 70 countries grow the crop, and the 8 billion inhabitants of plan-



Gundars, Andrew and Raivis Vaitekuns

## THE WHOLE COFFEE BERRY PROVIDES MORE ANTIOXIDANTS THAN ANY OTHER KNOWN SUPERFOOD

et Earth consume 825 billion cups of coffee every year. Coffee connects the world. It has become an exceptionally valuable commodity—exports are worth over \$25 billion a year, and retail sales dozens of times more. The history of coffee illustrates the rise and the success of global capitalism. It is also a painful story of environmental destruction and social inequality.

Coffee trees need water and humidity, and they grow best in the tropical zone between the tropics of Cancer and Capricorn at altitudes between 500 and 2,000 meters. The rich ‘tropical’ soil provides coffee its flavor. Coffee trees can be found in any rainforest. They grow under the protection—in the

shade—of the canopy made up by giant tropical trees. As coffee’s popularity grew, cultivation took off. Farmers began clearing parts of the rainforest to plant coffee trees. Few consumers may realize that drinking coffee has been connected with massive deforestation from the very beginning.

Coffee farms practice monoculture—over the past century, ever more aggressively squeezing more plants on a piece of land than ever thought viable. Intensive farming exhausts the soil and makes the coffee trees more vulnerable to pests. The farmers respond with chemicals—fertilizers and pesticides—further depleting the soil and provoking a downward spiral. The soil loses the micro-organisms and the fungi that keep it together and make nutrients available to plants. That means that the heavy tropical rains wash down the remaining healthy soil from the mountain slopes causing more and more erosion. Landslides happen often and destroy the income of farmers forever.

The negative trend is escalated by the ‘colonialists of the 21st century’: multinational corporations. Despite the fact that the average size of 80 percent of the 25 million coffee farms in the world measures not even 1.5 hectares, more than a third of the glob-

al coffee trade is controlled by a dozen multinationals: Neumann (Germany), Nestlé (Switzerland), Lavazza (Italy), Starbucks (USA) and others. These corporations negotiate the prices that set the world market and force smallholder farms to adhere to a business model that always prioritizes output per hectare at the lowest possible price regardless of environmental or social costs.

As a result, almost half of the coffee farmers live in poverty and hunger. According to a recent Financial Times calculation, a farmer may get 1.5 cents of the \$3 that Starbucks charges for a cup of coffee. That is 0.5 percent for the farmer! The profits are made by the intermediaries down the supply chain: the traders, the roasters, and the coffee shops.

A large 2005 study of ‘food insecurity’ among some 500,000 coffee farmers in El Salvador, Guatemala, Nicaragua, and Mexico found that almost two-thirds struggled to meet their most basic food needs. The drama presents the farmers with a painful choice between undesirable outcomes that all involve the loss of resilient livelihoods built up over generations. They may consider shifting to the very profitable production of coca for the—illegal—drug industry. In their despair, they may join revolutionary movements and the fight for radical and violent change. Many choose migration and leave their homelands in search of a better future in another country.

In the past 50 years, the world has seen all of these outcomes in coffee-growing countries. There were 50 million coffee farmers some 50 years ago; today there are 25 million left. The political debate about immigration in the United States—the number one consumer of coffee in the world—is directly linked to a completely failing coffee industry in Central America. In 2019 alone, more than 200,000 people in Guatemala—once the number one coffee producer in the region—felt forced to flee their home country making Guatemalans the single largest source of migration toward the US that year. The daily coffee drinking habits of millions of Americans force the farmers to leave their lands and knock on the door of the United States—where they are unwelcome!

What about fair trade? Premium-priced fair-trade coffee somewhat softens the hardship for the farmer, but it does not fundamentally change the business model. Fair trade is not a good system; it is less bad. Fair trade producers are still focused on reducing their costs as much as possible while still maintain-

## THE DAILY COFFEE DRINKING HABITS OF MILLIONS OF AMERICANS FORCE FARMERS IN CENTRAL AMERICA TO LEAVE THEIR LANDS AND KNOCK ON THE DOOR OF THE UNITED STATES—WHERE THEY ARE UNWELCOME!

ing the standards they have signed up for. They are basically running the same race with extra handicaps which very much seems to explain why—after decades—fair trade is still a niche concept.

To radically change the lives of the coffee farmers, we need a new business model that is based on using locally available resources as much as possible. Coffee farmers cannot afford to discard 99.8 percent of the biomass they cultivate. They cannot survive if they throw away everything of the berry they harvest except for the pit, the coffee bean. That is why Raivis Vaitekuns’ Coffee Pixels is such a groundbreaking initiative. His innovation gives value to the whole coffee berry.

The story gets even better than Vaitekuns ever imagined when he was envisioning to bring a good coffee experience to travelers. He did not know that coffee is a superfood. In fact, it is the most valuable known superfood on the planet. In the past decade, many health-conscious people—particularly in the western world—have become used to the special benefits of goji berries, chia seeds, turmeric, and much more. There is a scientific rating for the health benefits of these superfoods: The Oxygen Radical Absorbance Capacity (ORAC). The ORAC value of a food comes from a lab test that determines the ‘total antioxidant capacity’. Less oxidation in the body means less inflammation means better health.

The popular goji-berries have an ORAC value of 25,300 for 100 grams. Blueberries score 6,552 and another health food favorite, kale, 1,773. They do not come close to the top 10 superfoods that in-

## GROWING COFFEE IN THE RAINFOREST WILL MAKE THE LIVES OF FARMERS MUCH BETTER

cludes cloves with an ORAC value of 314,446 and cinnamon with 267,536. But here is the surprise: The coffee berry has an ORAC value of 343,900. The whole coffee berry provides more antioxidants than any other known superfood.

There is little scientific research about the health benefits of the coffee berry, but the available studies show strong results. The University of Novi Sad in Serbia did a small study with 20 athletes. For four weeks, the athletes took 800 milligrams of a coffee berry extract every day. At the end of the study, their 'total antioxidant capacity' (TAC) was "significantly higher" than at the start of the project. Studies with mice done at Meiji University in Japan indicate that coffee berry extract slows the growth of cancer cells and improves immune function.

Extract from the skin of the coffee fruit supports cognitive health too. Researchers of Auburn University in the United States found that taking the extract daily is associated with improvements in reaction times and accuracy. Another study—by Applied BioClinical, a bioclinical research facility in Irvine, California—showed substantially increased levels of the protein abrineurin (brain-derived neurotrophic factor or BDNF) in the brain as a result of treatment with whole coffee fruit concentrate powder. The data of the study show that BDNF levels increased with 143 percent. This is especially significant because people with Alzheimer's disease tend to have lower levels of BDNF.

The potential for coffee berry extract is massive. All other top superfoods need to be farmed. Instead, the pulp of the coffee berry is a waste product that is already widely available for little additional investment if it were not dumped in rivers or left to rot on the 25 million coffee farms around the world. With an annual coffee harvest of 10 million tons, the current waste supply is 50 million tons. At least half of that can be sold as highly valuable coffee berry extract.

There is a virtually unlimited supply of the highest-ranking superfood. For the first time, there is a super nutritious food that can be made widely available at affordable prices. Coffee farmers will be able to offer healthy nutrition to millions of people around the world. At the same time, their revenue would substantially increase. The potential for change is huge. In 2018, cascara pioneer Aida Battle from El Salvador told Bloomsberg that she was receiving \$7 for a pound of the coffee berry skin compared to \$1.20 for a pound of the beans—that is almost 6 times as much! Please note that Battle with her own specialty coffee brand, receives a much higher price for coffee than the average farmer who may only get \$0.15 for a pound. The cascara factor for that farmer is an amazing 47!

By volume, coffee farmers have more cascara to sell than coffee. A quick calculation: 50 percent cascara volume of the current coffee waste supply of 50 million tons comes to 25 million tons. That volume translates to 50 billion pounds. At the above-mentioned price of \$7 a pound, 25 million coffee farmers would generate an additional annual revenue of \$350 billion—or \$14,000 per farmer per year! The conclusion is simple: Cascara can dramatically transform the lives of farmers while bringing more health to their customers throughout the world.

However, there is more that Raivis Vaitekuns did not foresee when he launched his Coffee Pixels. Cascara offers a groundbreaking business model to maintain and regenerate rainforests. Today, consumers pay a higher price for 'shade-grown coffee'—coffee cultivated in the rainforest where it originally belongs. However, the higher price for shade-grown coffee is not enough to motivate a massive return of coffee farmers to the rainforests. Their production costs go down. Forest-grown coffee does not require fertilizers and pesticides as the rich ecosystem of the forest balances and protects hundreds of species and does not need human 'chemical intervention'.

However, these savings in production are not enough to overcome a substantially lower yield. A coffee farmer gets an average yield of 4,500 kilograms per hectare of his open field farm. When he takes the coffee back into the forest, his annual harvest tumbles to about 750 kilograms per hectare. How could a farmer be interested in such a transition? Despite the higher price for shade-grown coffee, the loss of the income of 4,500 - 750 = 3,750 kilograms appears to be too much for the farmer to change his course.

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## HEALTHY FORESTS CREATE A HEALTHY PLANET AND HEALTHY PEOPLE

This is where the value of the ‘waste’ of the coffee berry, the cascara, radically changes the business model of the farmer. The farmer’s yield of ‘only’ 750 kilograms shade-grown rainforest coffee beans per hectare means he also has a harvest of at least 1,500 kilograms of cascara. And for that superfood he gets a much better price (see sidebar) that makes his return to the rainforest very profitable. In fact, growing coffee in the rainforest will make his life much better.

Coffee can drive and inspire the trend towards agroforestry to regenerate rainforests. Agroforestry environments are far more efficient than monoculture farms. According to one study, agroforestry needs just 0.2 calories of energy to produce 1 calorie of food. The reason is simple: instead of focusing on one product of a monoculture farm, agroforestry offers multiple products and multiple outputs. That kind of efficiency changes the game of food production.

Not only do forest farmers generate a much-deserved higher income, they also produce more food with more nutrients. This is essential as the world faces the challenge of hunger and malnutrition. That is why the FAO advocates agroforestry as a key solution towards a food system that is healthier for people and planet. Agriculture has been an enemy of the environment, according to the UN organization, but there is increasing recognition that regenerative forest farming provides environmental benefits and sustains livelihoods. The FAO also points out that agroforestry increases climate resilience. One study suggests that every hectare of agroforestry can prevent the deforestation of two to eight hectares.

Today, there are about 100 million hectares of agroforestry in the world. This number includes 6 million hectares of shade-grown coffee. There is an enormous potential for growth. Combining growing trees with farming supports the regeneration of vital natural environments; it protects and rebuilds biodiversity; it offers one of the most promising strategies to reverse global warming; it increases food production, and it improves the livelihoods of people. In the end, the message is very simple: Healthy forests create a healthy planet and healthy people.

Coffee cultivation with a whole berry focus can lead and inspire this critical trend. Taking coffee



The Coffee Pixels factory in Latvia

back into the forests where it belongs is a major first step. Subsequently, the farmer needs to be able to rely on a regular sales channel. There is a clear and established market for his shade-grown forest coffee. However, cascara is yet to be discovered as a superfood by a larger audience of consumers. How can the farmer rely on the cascara market while he changes his business? That is where the Coffee Pixels initiative offers the critical link.

Coffee Pixels may not be only and last initiative that offers coffee farmers a market for their whole coffee berries. There will be many more market opportunities for the cascara superfood. However, as outlined in the sidebar, a business model based on shade-grown coffee and cascara that is currently discarded as waste radically transforms the lives of farmers and adds ongoing value to rainforests. In the meantime, Raivis Vaitekuns has teamed up with experienced entrepreneurs and investors to take Coffee Pixels to a global audience. In France a revolutionary new factory is being built that will be a symbol for manufacturing in alignment with nature. The factory will be connected with forest farms in Madagascar and Colombia.

## COFFEE PIXELS MAKES CONSUMPTION OF COFFEE A REGENERATIVE PRACTICE

Coffee Pixels makes consumption of coffee a regenerative practice on a potentially massive scale. If Coffee Pixels only captures a small percentage of the big global market of energy bars and energy drinks, hundreds of thousands of hectares of rainforests will be regenerated. That kind of regenerative consumption does not exist in our current reality. That is the innovative coffee solution!

Excerpted from **GUNTER PAULI** with **JURRIAN KAMP**, **Coffee Solutions: How new business models for the world's favorite beverage regenerate rainforests and restore livelihoods.**

# COFFEE CAN CHANGE THE WORLD

## THE BUSINESS MODEL TO REGENERATE RAINFORESTS



What would happen if you would eat one solid coffee bar every day for the rest of your life? Crazy idea?

Maybe not. One billion people in the world drink coffee. Most of them every day. Many of them more than one cup a day. Every year 825 billion cups of coffee are served.

So, one coffee bar a day is not an outrageous consumption pattern.

In fact, it would serve your health extremely well. There is nothing you can eat or drink in the world that has a higher antioxidant value than the complete coffee berry including the skin and pulp or cascara. A coffee bar a day would keep your brain sharp like nothing else.

However, there is much more.

With every coffee bar you eat, you would regenerate 1,000 square centimeters of rainforest. That may not seem like much. But at about 30 x 30 centimeters—roughly one square foot—you can stand. After 10 days of eating a coffee bar every day, you can dance on your 'own' square meter rainforest. Another 10 days and you can comfortably sleep in your 'forest bed'.

The average reader may live another 40 years. Over that time, they will regenerate almost 1,500 square meters of rainforest. Your consumption is regrowing a rainforest—one bar at a time—while you daily serve your body with optimal nutrients.

Not impressed with your contribution? Do you only re-

generate 1,500 square meters of forest when you eat a coffee bar of 10 grams every day for the next 40 years?

Let us put this differently: If all the 825 billion cups of coffee serve in the world every year would be coffee bars instead, we would immediately begin to reverse the deforestation in the tropical regions of the world.

Before human civilization emerged, about half of the land mass of the planet was covered by forests. Humans have cut trees for centuries and, today, forests cover only some 31 percent of the surface of the earth. Deforestation continues. In 2019, an estimate 3.8 million hectares of tropical primary forests was cut. Many scientists argue that for long-time survival of the planetary ecosystem—including humans—we need to restore that 50 percent forest cover of the world. Harvard biologist Edward O. Wilson recently made this case for the conservation of biodiversity in his book *Half Earth: Our Planet's Fight for Life*.

We need a business model to reverse that trend.

Back to the coffee bars.

The consumption of 825 billion coffee bars a year would regenerate more than 8 million hectares annually. We would indeed reverse the loss of rainforest and begin to restore the forest cover of the planet. Yes, restoration through smart consumption.

We have grown up thinking badly about our consumption patterns. We feel guilty causing pollution and exploiting precious resources for our own pleasure. Here is your opportunity for guilt-free consumption. In fact, the world needs your consumption. In the first place,

the coffee farmers who have been struggling to make a living for decades, need your consumption to build back a livelihood for themselves and their communities. But, as the farmers get their lives back, the planet regenerates.

The farmers become custodians of the forests, collaborators of ecosystems or participants in Nature—rather than miners who deplete fertile topsoil. When they begin to grow coffee under trees again, they will experience a drop in their yields. However, in the same shade, they will plant cacao (and much more). The cacao butter is used for the coffee bar; the cacao powder can be sold separately. We may conservatively project their harvest of coffee and cacao at one ton per hectare (compared to an average of 4.5 ton per hectare on an open field coffee farm).

With a harvest of one ton, we can produce 100,000 coffee bars of 10 grams. A consumer will pay \$1 for a bar. The total revenue for the harvest of one hectare rainforest coffee farm will be \$100,000. Let us allocate 25 percent of that amount for the farmers (Remember that the farmer gets 0.5 percent of the price of a Starbucks coffee). That means the farmers receive \$25,000 for the harvest of one hectare—more than double the world market price for, for instance, goji berries, a favorite of the health-conscious community; and 100 times more than the \$300 per hectare farmers get today for their monoculture coffee.

Will the lives of farmers get better when they make \$25,000 per hectare growing coffee in the forest?

Of course.

Will they invest in the next hectare of forest to grow more coffee under more trees?

Of course.

Will they plant cacao, coconut, pepper, and many more trees to grow their harvest and income in a rich ecosystem that does not require any additional fertilizer or irrigation? And that gives jobs to the whole family?

Of course.

Will a rainforest re-emerge?

Yes! Planting trees works. Regeneration of ecosystems works. When we do so, nature generously responds adding more and more species and increasing biodiversity. With the coffee bar business model, a natural revolution is bound to happen.

That revolution begins with your daily coffee bar. Your bar of 10 grams is 1/100,000 of the one-hectare harvest of the farmer. That is why each bar you consume has the potential to generate 1,000 square centimeters of forest. And the annual consumption of 825 billion coffee bars—as many as we drink cups of coffee every year—we would generate more than 8 million hectares of forest, each year. After 40 years that is 320 million hectares—that is a landmass a little smaller than India. [G P] [J K]

*More information: Coffeepixels.com With your special code "Nature15" you will get a discount to start your regeneration of the planet adventure.*



# GOOD MORNING

Sunrise at the California coast through the eyes of photographer Stephen Vella.



**STEPHEN VELLA** had a near-death experience in his mid-40s. The experience gave him a deep gratitude for each new day. “Every new morning is very special for me. It is

the beginning of another day of my life. The morning is about renewal. It is a rebirth that happens every 24 hours,” he says. “I promise myself to make it a good day—to make a difference.”

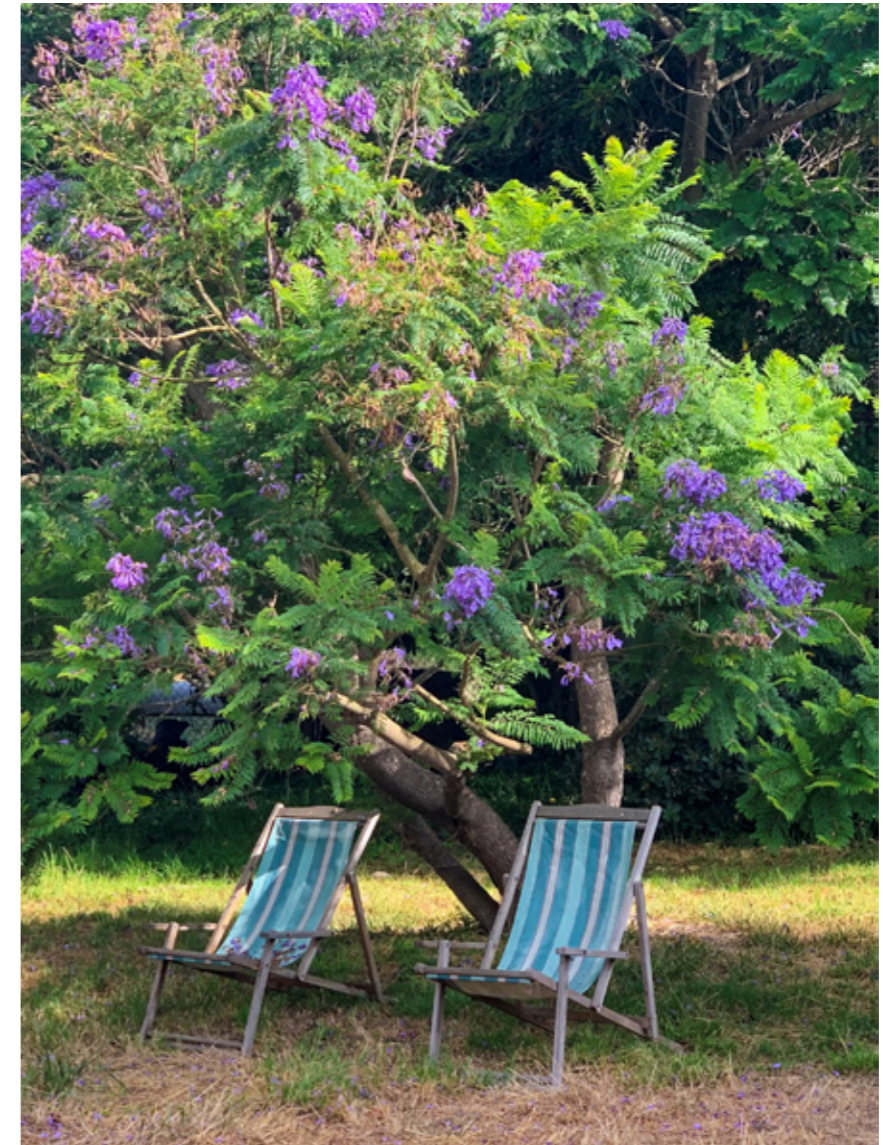
Often at sunrise, Vella takes a walk with his camera. He started this habit in his teens when he was growing up in Gibraltar—the

small British territory at the tip of the Iberian Peninsula. In this environment where the overwhelming forces of the Atlantic Ocean meet the soft, undulating landscapes of the Mediterranean, Vella found endless inspiration.

Vella started each day surrounded by the deep blue sea, bright yellow sunshine, endless shades and shapes of the clouds and greens pine trees. All colors were intense in ever changing panoramas. Today, Vella experiences the same multi-sensory experience of color in Southern California where he spends his winters. “I might not have taken up photography if I would have been born amidst vast, flat agricultural farms.”







Vella started creating art as a painter working with water colors—"Oil was too expensive in my youth". He made big canvases and discovered that moving those was not practical for a young man at the start of his professional life. "It was much easier to just grab a camera". Small pocket cameras in his early days. Today, he switches between his iPhone and professional cameras with good lenses to capture the scenes that catch his eye. "I never studied composition. That is something that came quite naturally."

Although Vella has made his main career in aviation asset management, he is always carrying a camera during his travels around the world. "Photography is a release for me. It takes me away from the intensity of my business life. Often when I am facing a stressful day, I first take my camera and go to the beach. Maybe I shoot something. Maybe not. One recent morning I looked up while I was walking and there were the pelicans."

**Good morning.**

# WIT'S END

AFTER SPENDING BILLIONS ON RESEARCH, MAINSTREAM MEDICINE STILL DOES NOT HAVE A MEANINGFUL TREATMENT FOR ALZHEIMER'S DISEASE—THE FASTEST GROWING LEADING CAUSE OF DEATH IN THE WORLD. BUT ONE DOCTOR HAS DEVELOPED THE FIRST PROGRAM TO PREVENT AND REVERSE COGNITIVE DECLINE. INTRODUCING: **DALE BREDESEN.**

**E** DWARD WAS A successful businessman with companies on both the East and West coasts of the United States. He would meet with his accountants and add columns of numbers immediately in his head before the accountants could do so on their calculators. As he approached 60, however, he began to have memory problems. One day at the gym, he panicked when he forgot the combination to his locker, and his lock had to be cut. His memory continued to decline. He could no longer add columns of numbers rapidly in his head and he had difficulty remembering people he had met. A PET scan revealed Alzheimer's disease.

From then a rapidly accelerating journey downhill began. When he turned 69, tests indicated marked memory loss. He scored in the 3rd percentile—that means that 97 percent of people perform better—of a standard Alzheimer's memory test. His doctor suggested he wind down his businesses and plan for the full-time care he would soon need.

Soon after that depressive news, Edward and his wife heard a radio program about a new treatment regimen developed by Professor Dale Bredesen that had been documented to reverse early-stage Alzheimer's disease. They contacted Bredesen and Edward started the experimental treatment. Six months later, his wife and his staff noted that Edward was clearly improving. After almost two years on the program, Bredesen persuaded his patient to take another test with the same neuropsychologist who had given him the original bad news.

"I was driving up the California coast when my cell phone rang," writes Bredesen in his bestselling book *The End of Alzheimer's*:



## 'WE USED TO SAY: 'EVERYBODY KNOWS A CANCER SURVIVOR; NOBODY KNOWS AN ALZHEIMER'S SURVIVOR'. THAT IS NO LONGER THE CASE.'

The first program to prevent and reverse cognitive decline. Edward's neuropsychologist asked him to come over to discuss the results of the new tests. Edward had improved from the 3rd to the 84th percentile. "In 30 years of practice I have never seen such results", said the neuropsychologist.

When we meet on a sunny Tuesday morning in January in Santa Barbara, California, Bredesen reflects on the experience: "We used to say: 'Everybody knows a cancer survivor; nobody knows an Alzheimer's survivor'. That is no longer the case."

Edward's remarkable journey of recovery started in 2013. Since then, some 5,000 people have followed the 'Bredesen Protocol' with many of them experiencing equally impressive results. In a new scientific study by Bredesen, which is about to be published, results show that more than 70 percent of Alzheimer patients experienced clear progress. They do better after the treatment. "It is most encouraging that we know why the remaining patients are not succeeding", adds Bredesen.

It is estimated that some 50 million people suffer from Alzheimer's in the world today. That is almost three times the number of current cancer patients. Alzheimer's disease is the only cause of death in the world's top 10 that is becoming more prevalent over time. Since 2015, Alzheimer's and other types of dementia are already the leading cause of death in the United Kingdom. There are 330 million Americans living today. It is projected that 10 percent of them will die of Alzheimer's. Alzheimer Disease International (ADI) estimates the financial burden of dementia included unpaid care provided by family members at \$1 trillion. In other words: Alzheimer's poses a major—financial and social—threat to society.

According to mainstream medicine, there is no cure for Alzheimer's. In past decades, more than 200 drugs have gone through clinical trials—which often come with a \$50 million price tag. All these tested drugs have failed, and billions have been lost.

"Alzheimer's is not a simple disease", says Bredesen. He refers to the fact that, a hundred years ago, people were dying from "simple illnesses". Most of these dis-

eases—tuberculosis, diphtheria, pneumonia, hepatitis, etc.—were infectious. Such illnesses are caused by one organism. There is one bacterium, virus, or parasite which is the target. Bredesen: "The great success of 20th century medicine is that between public health policies and antibiotics most of these diseases have been conquered."

Today, people die from "complex chronic degenerative illnesses": cancer, cardiovascular disease, Alzheimer's, Parkinson's, and more. In these diseases, cells and organs increasingly deteriorate and die over time. "The problem is that we use the same strategy to treat these diseases as we have successfully used with the simple infectious diseases," says Bredesen. Conventional medicine is searching for one drug to cure Alzheimer's—a degenerative disease that is caused by lifestyle and environmental circumstances in which many different factors play a role.

In his book, Bredesen describes 36(!) "inputs" which could lead to Alzheimer's—from food to stress and sleep patterns, and from environmental toxins to genetics. The point is that if the disease can be caused in many different ways, there will be many different cures as well: There is not one Alzheimer's drug. Bredesen compares the challenge with a roof with many leaks. "If you want to keep the water out of your home, you need to patch all the holes. Patching one of the holes with 'one pill' does not make a lot of sense..."

Bredesen notes that humans have become very familiar with complex technology in other sectors of society—with computer programs that fly aircraft and drive cars, for instance. When these programs fail, there are many possible causes, and it requires a diligent and precise approach to check all the elements of the system to find the root of the failure. "Nobody would accept it, if a car mechanic would simply tell you: 'We know this problem. It is called the car-not-working-syndrome. We have no solution for it.' But that is basically the message of modern medicine when it comes to degenerative diseases. 'There is no drug. Please go home; you are going to die'. You expect the car mechanic to begin checking things and get your car to work again. You should expect the same from your doctor."

Bredesen began his career as a researcher of neurodegenerative diseases at the University of California, San Francisco. He worked under Professor Stanley Prusiner who later received the Nobel Prize in Medicine for his discovery of 'prions'—the term he used to describe agents, smaller than viruses, that cause rare neurological diseases. In the late eighties, Bredesen established his own lab at the University of California, Los Angeles. He spent years studying "programmed cell death", the process that drives degenerative disease. Why do cells under specific conditions begin to "commit suicide"?



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## 'THE GOOD NEWS IS THAT YOU HAVE A LONG TIME TO ADDRESS COMPLEX CHRONIC ILLNESSES'

and biochemistry. "This is the era of 'programmatic medicine,'" says Bredesen, "We are ending the era of mono-therapeutics: It is not 'one size fits all.'" To reverse cognitive decline, patients should act as "competitive athletes", he says. "We want everything in your body to be as optimal as possible."

In a healthy body, there is an ongoing—balanced—process of cell growth and death. Disease results when that process is disturbed. When there is too much cell growth, there is cancer. When there is too much cell death, there is degenerative disease. Bredesen: "We discovered that the process of cell death started when certain cells are not receiving the input they need. There is a mismatch. When that mismatch becomes chronic, the system begins to deteriorate."

Physical deterioration is a very gradual process. "It can take one or two decades from the moment of the first symptoms to full-blown Alzheimer's disease", says Bredesen. "The good news is that you have a long time to address complex chronic illnesses."

Bredesen distinguishes three progressive phases in Alzheimer's. In the beginning, there is "subjective cognitive impairment" (SCI). The spouse of a patient may notice that there is something wrong, but memory tests do not yet show anything. There is "mild cognitive impairment" (MCI) when patients begin to test abnormally and they themselves know there is something wrong. Finally, there is the advanced stage of the disease.

Bredesen developed an extensive protocol to test for the 36 factors that may influence Alzheimer's and subsequently treat the patient based on the individual results. After almost ten years of treating thousands of patients, Bredesen says: "Virtually 100 percent of the people with SCI get better. The majority of the people with MCI get better. We even see some patients with full-scale Alzheimer's disease getting better. That was initially an enormous surprise to us."

Remarkably, Bredesen argues that "compliance" is the biggest cause for unsuccessful treatments. "It is not easy to address all the different factors that may play a role. We recommend that patients use a health coach." In addition to challenging dietary restrictions, it can be hard to change circumstances. People may have exposure to toxins in their home. They cannot or do not want to move and/or choose to stay in the home while the problem is being fixed. It is not uncommon that the cleaning process increases the toxic exposure while the disease keeps deteriorating.

As the circumstances and conditions of patients vastly differ, the 'Bredesen protocol' is a highly personalized program based on an individual's genetics

The treatment program is offered by Apollo Health, a company partially owned by Bredesen. The treatment is not cheap. The extensive 'baseline blood test' may cost up to \$1,000. Based on the outcome, the expenses of supplements for the patients may come to \$400 a month although many people pay less. There are consultations with practitioners who have been trained by Bredesen. As Bredesen's pioneering work is only beginning to be recognized, not much of these expenses is covered by health insurance providers. Then there are possible additional expenses for mold remediation or protection from electromagnetic fields at home or at work.

Bredesen argues that the cost of his protocol should be compared with the expenses of an Alzheimer patient living in a nursing home and needing 24-hour care with an annual bill that can be more than \$100,000. That is a fair comparison. The challenge is that in the current situation insurances cover the costs of the nursing home but not the costs of the Bredesen protocol. For that to change, mainstream medicine has to change.

Fellow scientists assert that Bredesen does not have enough data to support his groundbreaking conclusions about stopping and reversing cognitive decline. They dismiss the fact that some 5,000 people have gone through the program with mostly outstanding results because, so far, only about a hundred of these cases have been documented in studies published in scientific journals.

"You have to start somewhere", Bredesen shrugs.

He points out that his proposal for the first comprehensive clinical trial with Alzheimer's and pre-Alzheimer's patients was turned down because "it was too complicated". The review panel argued: "You do not understand how to do a clinical trial because you are recommending changing more than one variable."

"You do not understand Alzheimer's", Bredesen responded, "this is not a single-variable disease."

The exchange goes to the core of the challenge Bredesen and other pioneers in medicine are facing. "Classical medicine was about what", Bredesen says, "What is the diagnosis? It is heart failure? Cancer? Or diabetes? The new medicine is about why. Why did you get this disease? You need to look at all the different pieces and classical medicine, unfortunately, does not do that."

## 'YOU NEVER CHANGE THINGS BY FIGHTING THE EXISTING REALITY. TO CHANGE SOMETHING, BUILD A NEW MODEL THAT MAKES THE EXISTING MODEL OBSOLETE'

[BUCKMINSTER FULLER]

In a way, medicine needs to go back to its roots. Ancient healers and shamans had a holistic perspective on human health, and they understood the relationship between the brain and the body. However, they had no knowledge about DNA, RNA, microbiomes and the inner workings of cells. Modern doctors have a much more detailed understanding of the human body. But they lack the ability to connect all the different parts. "Systems medicine is a new thing", says Bredesen. He argues that doctors need to be trained in both the ancient and modern traditions.

Bredesen's thinking about Alzheimer's begins to resonate in mainstream medicine circles. In 2017, the British medical journal *The Lancet* set up one of its special commissions on 'Dementia prevention, intervention, and care'. In its 2020 report, the Commission identified a long list of 'lifestyle' risk factors for dementia that echo Bredesen's findings: obesity, diabetes, depression, lack of exercise, air pollution, low social contact, less education, excessive alcohol consumption, and more. Controlling these factors, the Commission writes, can delay or even prevent up to 40 percent of dementia cases.

The success of Bredesen's program and the report of *The Lancet* Commission clearly invite further investigation and research of the impact of lifestyle choices on Alzheimer's disease. Nonetheless, most of the research remains focused on amyloid—the plaque-like protein that attaches on nerve cells in the brains of Alzheimer's patients and interferes with their brain's signaling system. Pharmaceutical companies are still spending millions trying to develop drugs that can get rid of this plaque. It is remarkable that Bredesen's research draws a completely different conclusion about amyloid. "We have found that amyloid is made in the brain as a protective response when there is a lack of essential inputs", he says. Amyloid appears when the brain is downsizing, a known characteristic of Alzheimer's patients. Bredesen: "Again, the question is: why is that happening? Just getting rid of amyloid simply does not make sense."

Bredesen sees the problem: "Medicine has a history of being about tradition and permission rather than about precision and remission. Unfortunately, there is a lot more adherence to tradition than to truth in the medical world." He is convinced that all major chronic illness is the result of a mismatch between the input the body receives and the nutritional needs of the cells. The mismatch causes—chronic— inflammation. And inflammation lies at the root of all degenerative diseases—at least on that medicine agrees today.

Does that mean that the Bredesen protocol would also work against other diseases? "The mismatch is different for each disease", Bredesen says. In other words: Alzheimer's is different from Parkinson's, multiple sclerosis, Lou Gehrig's disease or macular degeneration. "But the fundamental principle is the same." Indeed, Bredesen's website quotes a French doctor reporting "encouraging results" treating his Parkinson's patients with the protocol.

*The Three Musketeers of the New Medicine: Dale Bredesen, MD with David Perlmutter, MD, author of **The Grain Brain** (center), and Mark Hyman, MD, author of **Food Fix** (right).*



The challenge is massive. More than 40 percent of the adults in the world are overweight. Thirty percent of overweight people have type 2 diabetes. And type 2 diabetes doubles the risk for Alzheimer's. Bredesen: "We now essentially live in a society in which we are giving ourselves Alzheimer's disease."

Bredesen opens his book *The End of Alzheimer's* with a quote from Buckminster Fuller: "You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."

The words describe the journey of a dissident. "I never set out to be an activist", Bredesen says, "I set out to be a physician and a scientist, but I learned 20th century medicine and we are living in the 21st century."

A reluctant activist perhaps. After a moment of reflection, Bredesen looks back at his youth in the 1960s watching the hippies and listening to The Beatles. "Everything was about activism, about going against the establishment." Half a century later, he sees a similar crisis: "Unfortunately, the establishment is not giving us optimal medicine today. Alzheimer's and other neurodegenerative diseases should be rare diseases and we can make them rare diseases today! Let us reduce the global burden of dementia. Let us reduce the global burden of neurodegenerative disease, and—ultimately—let us reduce the global burden of complex chronic illness. You have to keep looking at the goal: How can we make things better?" [JK]

More information: [www.apollohealthco.com](http://www.apollohealthco.com)

## A ROOF WITH 36 HOLES

Alzheimer's can be caused by many different factors. Dr. Bredesen has identified at least 36 "inputs" that may cause the disease. He compares the challenge with a roof with many leaks. "If you want to keep the water out of your home, you need to patch all the holes. Patching one of the holes with 'one pill' does not make a lot of sense..."

A first prevention checklist:

- Optimize sleep. Get at least seven hours every night. Sleep is one of the most powerful weapons against Alzheimer's, says Bredesen. Sleep apnea, a disorder that is "extremely common" usually goes undiagnosed.
- Fast at least 12 hours, and ideally 14 hours, between your evening meal and next day's breakfast. You want your body to get into the state of ketosis which is triggered by fasting.
- Aerobic exercise for at least 30 minutes at least 5 times a week. Any exercise supports cognitive function; getting your heart beat up—aerobic exercise—has the most favorable effect. Strength training supports the healthy impact of exercise on the brain.
- Eat a mostly plant-based diet with as much organic fruits and vegetables as possible. Bredesen recommends

- 0.8 to 1 gram of clean protein for each kilogram of body weight. If you weigh 60 kg (132 pounds), you need 48 grams of protein (2 eggs and 140 grams—5 ounce—wild caught salmon). Note that fruit, vegetables and nuts also contain protein.
- Eliminate gluten and sugars. Gluten causes inflammation in everyone. Minimize simple carbohydrates (pasta, bread, rice, sodas). Our evolutionary makeup allows for 15 grams of simple carbohydrates per day—one soda contains two and a half times as much, says Bredesen.
- Avoid air pollution including indoor pollution from, for instance, paraffin candles. Consider using a HEPA air filter at home.
- Use a water filter. Tap water often contains bacteria, viruses, metals, toxins, drugs and other contaminants.
- Check your home for mold.

- Cognitive decline is increasingly associated with molds and their toxins.
- Avoid toxins in health and beauty aids. Toxic substances can also enter the body through the skin.
- Avoid eating fish high in mercury. The larger the fish, the more mercury it typically has.
- Avoid dental amalgams (high mercury content).

Bredesen emphasizes that the above is only a summary. Patients regularly require more than these listed adjustments. Remember, this is a roof with potentially 36 leaking holes..

Source: **DALE E. BREDESEN: The End of Alzheimer's Program**. The first protocol to enhance cognition and reverse decline at any age

# SEÑOR MOMENTS

The story of Alzheimer survivor Frank

Last February, I was at a doctor's office with my wife. We were trying to get some billing information translated into English for insurance purposes. The secretary asked me if I could remember the dates of the last two visits. I thought about it for a second and without hesitation said, "December twenty-sixth and January fifteenth."

No big deal, right? For a guy who was diagnosed with early-onset Alzheimer's nine years ago, it was huge. It was one more incident proving that the Bredesen Protocol is indeed reversing the symptoms of my disease.

At the time I was diagnosed it was a big deal for me if I could remember to zip up my pants and buckle my belt before leaving the house. That would be after twenty minutes of trying to find my keys and my phone. I found my phone in the refrigerator one morning.

Six years ago, we moved to Mexico, convinced that I would soon need more care than my wife could provide, or we could afford.

I think my wife suspected I had dementia long before I was willing to admit it to myself. She was seeing the destruction I was wreaking on my once-successful business and our personal finances. Eventually the evidence became so overwhelming that I became convinced I must have Alzheimer's. Still, I sought no medical help.

I had put it off for a couple of reasons. It was 2011. Most of the world had yet to hear of Dr. Bredesen. It was a few years before his first study was presented to the world. At that point

almost everyone agreed Alzheimer's was fatal and incurable. I did not even know how to spell the word, but I knew that I was going to die from it.

That thinking kept me from seeking any help for a very long time. My strategy had been to try and hide the multiple mistakes I was making on a daily basis and hope no one would notice.

There was another thing going on. I could not remember much of what was occurring. I would borrow money from myself to complete company projects, thinking I would repay the loan at the project's completion. By the time it was done I would forget that I had borrowed money to complete it. It created an illusion of the company being okay.

I had been seeing a doctor for depression, a psychiatrist. When I finally told him I thought I had Alzheimer's, he said I was too young. I didn't know back then that there were many varieties of dementia and many stages of Alzheimer's. The doctor believed my problem was that I was still severely depressed and adjusted my medication. It was a good idea. The depression lifted a great deal, but my memory continued to decline.

After some standard cognitive tests, he agreed that I might have mild cognitive impairment. I must have been driving him crazy. I kept saying, "There is nothing mild about what is happening to my life."

He may have been right. I have often wondered why I did not immediately google memory loss and find out a few things. I guess I just did not believe there was anything good to be found.

Eventually, in 2012, I was diagnosed with early-onset Alzheimer's. I had been taking notes of the bizarre things I was doing every day. I was going to write a book called *Descent into Dementia*, chronicling the whole thing for as long as I could.

When we moved to Mexico, I was convinced it was only a matter of time before I would be such a drain on my wife I would have to execute the "final solution," which I had acquired the means to do several months before.

We had been in Mexico less than a year when I had the great good fortune to overhear a conversation about Dr. Bredesen. He had just released the results of his study with the first ten subjects. I googled the report and was stunned to find that some of the case studies were people experiencing exactly what I had been going through. I knew that somehow I needed to meet the man. I also started trying to do the same things the people in the case studies had done.

After several months and many emails, I got him on the phone. His secretary told me I would be lucky to get five minutes of his time. It was a Friday afternoon. We spoke for twenty-five minutes. I told him my experience and the fact that I had been writing a book about what was happening to me. I was asking for a face-to-face interview. I also told him I was seeing some improvement after trying his protocol.

He did most of the talking, asking me questions. He seemed more interested in my case than any of my own doctors. He invited me to his lab in Marin County, where he was putting on a pre-

## 'AS LONG AS I CONTINUE TO FOLLOW THE PROTOCOL, I HAVE A NORMAL LIFE.'

sentation of his protocol. He said there would be someone there that I should meet.

I was still very ill, and the idea of traveling alone to California was frightening. It ended up being the best thing I ever did. After his presentation, we spoke for about half an hour, during which he explained the protocol in simple terms that I could understand, and he answered all of my questions. It was the beginning of regaining my life. I met a woman who had had the exact same symptoms as I had and had completely recovered. She was sharp as a tack. She made me a believer. I left California committed to giving the protocol everything I had. And I took with me something I had left behind years ago: hope.

Eventually I started feeling more and more like myself. I had a relapse in my second year. Away from home doing some business at the border, I binged on junk food the whole time. Three pounds of licorice, McDonald's, a huge jar of peanut butter, about six or seven large cinnamon rolls, and several milk shakes. I gained five pounds in three days.

Okay, I gained the weight. Bad enough by itself. Unfortunately, it led me back to eating the junk food I had lived on for years. Without even knowing it, I had stopped taking my supplements and exercising. It did not

take long. I ended up unable to hold a thought and once again terrified.

I made a phone call to someone who knew much more about the protocol than I did. He told me it was not uncommon for people to fall off the wagon. More important, he told me most of them were able to regain their cognition.

It was harder the second time. It seemed to take longer. But eventually I was once again myself. Have I been cured? I look at it the way alcoholics look at sobriety. As long as they do not drink, their lives are like those of other men or women. If they go back to the booze, they go back to misery. That is how I feel about Alzheimer's. As long as I continue to follow the protocol, I have a normal life. If I do not, the nightmare will begin all over.

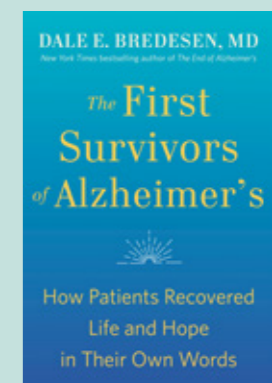
If you are wondering if you can do it, I am here to tell you that you can. Can your loved one do it? With your help, there is a good chance she can. First, get the testing done so you know what you need to address. Then start where you are able. For me, the change of diet was the hardest. I never knew how much I loved sugar and bread. I rarely ate salads or fish, even when living in the Caribbean. I have been learning more about the protocol and adding things to my daily plan for as long as I have been

doing it. It would have been impossible to do so without my wife. In the beginning I had to be reminded every day to take my supplements.

I have been thinking clearly for the majority of the last four plus years. I realize now that my problems in cognition started much earlier than I originally thought. In my mid-50s I was having occasional incidents that I simply chose to ignore or blamed on stress.

Do not do what I did. Do not delay seeking help. The sooner you address your problems or start living a healthier life even if you do not yet experience problems, the better a life you will have. The protocol prevents the disease. You do not need to go where I went.

Oh, I finished the book. *Descent into Dementia* ended up being *Defeating Dementia*, and with Dr. Bredesen's endorsement, I like to believe it has helped spread the message to many lands. I remain forever grateful.



Excerpted and reprinted with permission from DALE E. BREDESEN, MD: *The First Survivors of Alzheimer's*, Avery, New York, 2021

# THE LIVING, BLACK GOLD

[ by SELINA TENZER ]

SOIL IS IN THE SPOTLIGHT AS A CLIMATE SAVIOR. THE HUMUS IN SOIL STORES CO<sub>2</sub>. BUSINESSES ARE TRADING 'HUMUS CERTIFICATES'. ARE SUCH CARBON STORAGE CERTIFICATES A NEW, CLEVER BUSINESS CONCEPT OR A CRUCIAL STEP TOWARD FOOD SECURITY AND SAVING THE PLANET?

**S**MALL CHANGES IN the global humus balance in soils can have a major impact on CO<sub>2</sub> concentrations in the atmosphere. Humus is the organic component of soil that is formed by the decomposition of leaves and other plant material by microorganisms. The higher the soil organic carbon content becomes, the more it contributes to mitigating CO<sub>2</sub> in the atmosphere.

Research shows that a three percent increase in the carbon content of the top 30 centimeters (12 inch) soil of all farmland in Germany alone would result in a reduction of 77 million metric tons of CO<sub>2</sub>. That amount comes to about half of all CO<sub>2</sub> emissions from agriculture in the world. And global agriculture is responsible for about a fifth of all carbon emissions.

It is no wonder that soil is on everyone's lips in the current climate debates. Soil is becoming a business model. Emissions trading with CO<sub>2</sub> certificates is booming. Companies are selling humus certificates and with the income they invest in growing

more humus in the soil. The business makes perfect sense. If the agricultural soil of the world contains more humus, everyone benefits—not just the farmers who use the soil to grow food.

It is important to note that building up humus and thus putting carbon into the soil has limits. A three percent increase in carbon content may not sound like much. However, it can take years to build up a few percent of humus. There is another challenge: At some point, saturation occurs—the carbon reservoir gets full. But if the efforts to increase the carbon content are suspended, the humus may get consumed and the carbon storage may get emptied again.

The development of the soil certificate business must therefore start from the end. How can it be ensured that humus build-up is sustainably maintained over time? In other words, how can it be prevented that a certificate system is created based on the filling of carbon reservoirs that subsequently get emptied again?



It is also important to take the initial state of the soil—before the start of humus building—into account. Soil that has been severely depleted by decades of intensive monoculture farming has a high potential to increase their carbon content rapidly. But that will not be a long-term healthy carbon intake pattern. In other words, maintaining and enriching carbon in soil requires a comprehensive, long-term transformation of the agricultural system. It is an effort that takes time and resources and involves millions of farmers worldwide.

The challenge is massive. Peatlands must be rewetted; farmlands need to be reintegrated in varied natural environments; soil must be protected from pesticides and overfertilization; and our eating habits must become as diverse as the diversity of edible plant species.

The transformation can be supported by an 'upside-down gold rush'. Soils can be actively restored through burying large amounts of biochar in the ground. Biochar is created by burning organic ma-

terial like straw, wood chips or waste from the food industry without oxygen in a process called pyrolysis. This is how our ancestors have made charcoal for thousands of years. Instead of digging up a soil treasure like gold, a treasure—carbon—is deliberately being put underground.

Successful efforts to restore soil have to be holistic and must go beyond merely putting carbon back into the ground. Carbon is just one element of soil. It is essential that all efforts focus on the most important contribution of the soil: Its function as a habitat for the trillions of creatures that diligently break down, digest and transform organic material. Bacteria, fungi, algae, springtails, earthworms and countless more depend on healthy soil. And our lives depend on them.

Pure humus—CO<sub>2</sub>—certificates are a first step. Much more comprehensive 'habitat certificates' could be a next step. Ultimately, future generations may not need certificates anymore as humanity realigns itself again with the abundance of nature.



# SOIL

## CERTIFICATES STIMULATE REGENERATIVE AGRICULTURE

Progressive companies are shifting from carbon offsetting projects in faraway countries to CO2 sequestration in the soil initiatives closer to home. A conversation with two German pioneers of this new trend: Stefan Baumeister, Managing Director of myclimate Germany, and Tom Weseloh, CEO of positerra.

[ by FRITZ LIETSCH ]

**I**N RECENT YEARS, it has become a common practice for companies to offset their carbon emissions. Most of these certified emission reductions are being generated by projects in developing countries where it is much cheaper to implement offsetting initiatives. However, forward-thinking entrepreneurs are beginning to look at opportunities to offset their carbon footprint closer to home. They are buying 'humus certificates' that confirm they have stored a certain amount of CO2 in humus.

Domestic farms get paid for building up humus and thus bind the CO2 from the air as organic carbon in the soil. This CO2 binding is continuously measured, calculated and offered in the form of certificates. The additional income that the farmer receives for his commitment to climate protection means that he no longer has to maximize his yield by exploiting the soil to the maximum.

Mr. Weseloh, a healthy and productive soil should be in the interest of every farmer. Why should farms receive financial support in the form of 'humus certificates' from positerra?

"I am sure that farmers have a fundamental in-

terest in cultivating healthy soil. But in order to be economically successful—at least in the short and medium term—a healthy soil is not absolutely necessary. Through the use of modern agricultural chemicals, high yields can often be achieved at low cost. This practice comes at the expense of the environment as it threatens long-term biodiversity and the purity of groundwater. Maintaining healthy soil requires know-how, commitment and the implementation of additional measures that take time and money. That is why we support the participating farmers through our premium."

*Would that not be a task of politics?*

"We would welcome it if politicians would focus more on sustainability and climate-friendly agriculture. However, it is a fact that EU agricultural policy still does not offer farmers sufficient economic incentives to switch to regenerative farming. Therefore, we want to give farmers a financial incentive to build up humus, improve soil life and secure long-term yields by converting their farming practices. The aim is to give farmers a new perspective and to counteract the decline of soil. Positerra does not give 'certificates' for building up humus and improving soil life but 'humus premiums'. We



want to express that the focus of our work is on increasing the humus content by vitalizing the soil, not just on increasing the CO2 content."

*Mr. Baumeister, why has myclimate, that has offered global carbon offset projects for almost 20 years, recently started presenting regional EU projects as well?*

"We received explicit requests for carbon offset projects here in Germany. Despite the fact that regional climate protection projects are five to ten times more expensive than international climate protection projects, demand from companies for domestic projects has increased sharply. Our customers are willing to pay a much higher price per CO2 ton."

*Which domestic projects lend themselves to climate protection?*

"At myclimate, we have so far included three project types. First, peatland restoration. Peatlands have an enormous potential to sequester CO2 through rewetting and they also have an extremely high value for biodiversity. When peatlands are rewetted, rare plants and animals—such as cranes—return. That is one of the reasons why our

partner Lufthansa Group includes such projects in their compensation portfolio. Forest renunciation is a second approach. In this case, the economic use of a forest is deliberately renounced for at least 50 years. Over the decades, a cultivated forest is transformed back into an original forest and can thus bind approximately twice the amount of CO2. Finally, we offer offsetting through agricultural humus build-up. Various suppliers have entered the market in the last two to three years. A crucial question in humus cultivation is whether it is possible to guarantee that CO2 remains bound over a long period of time—at least 50 to 100 years. The methodology of the providers here varies in robustness. Myclimate so far offers the 'Soil Fertility Fund' project of the Bio-Foundation because we are convinced by their approach and methodology. And we are currently in talks with Positerra."

*Mr. Weseloh, what are the key quality characteristics for a high-quality humus cultivation project?*

"The companies that work with us want concrete quantities of CO2 to be removed from the atmosphere and stored permanently. This must be documented in detail and it must be traceable. These companies are also interested in regional commit-

**‘COMPANIES WANT TO BE ABLE TO SHOW THE PROJECTS TO THEIR EMPLOYEES AND CUSTOMERS. THAT IS VERY DIFFERENT FROM SUPPORTING A PROJECT ON THE OTHER SIDE OF THE WORLD.’**



Stefan Baumeister



Thomas Weseloh

ment. They want to get to know the farmers and see the areas that have been converted with their help. They want to be able to show the projects to their employees and customers. That is very different from supporting a project on the other side of the world. Positerra is also providing serious, expert advice to farmers."

*What should companies look for when selecting regional climate protection projects in the agricultural sector?*

"In a good project, farmers receive intensive advice tailored to their location. This requires soil experts who have been working on humus build-up for many years. They recommend the measures that the farmer can implement. In addition, the financial conditions should be attractive enough for the farmer to permanently change his farming methods."

*Positerra claims that regenerative agriculture can bind up to five additional tons of CO2 per hectare in the soil. There is scientific literature that shows very different values. On what basis are your values calculated and verified?*

"The amount of bound CO2 in the soil can be calculated by taking soil samples, using the humus content in the soil, the specific gravity of the soil and the skeletal content. In other words, it depends on the site factors on the one hand and on the humus content at the beginning of the conversion on the other. Our assumptions are based on the experience and results gained by qualified soil experts who

have been training more than 1,500 farmers in regenerative agriculture in the past eight years. Some of these farmers have demonstrably been able to build up an average of around 0.1 percent humus per year over the past ten years. Depending on the location, that corresponds to a value of around five tons of CO2 per hectare."

*However, scientists do not yet seem to 'easily' accept this quantification of organic soil carbon. Have your results been verified externally?*

"We regularly check the results using soil samples and continuously monitor the farms.

However, external verification is still missing. We would be very pleased to work on certification with other interested parties like positerra."

*How many farmers have already joined positerra and how great do you think the potential is?*

"We have been able to recruit more than 50 farms in a short time. Germany alone has 16.7 million hectares of agricultural land. It is critical to win over as many farmers as possible to join regenerative agriculture. With the appropriate support from companies, the public sector and consumers, we believe that ten percent of this land—1.6 million hectares—could be farmed regeneratively in the next ten years. In order to achieve that goal, we want to win over thousands of motivated farmers and committed companies so that we can be seen as the most credible platform for living, regional climate protection through CO2 compensation in Europe!"

*Last but not least, how do you ensure the so-called permanence—that CO2 remains bound in the soil for a long time (20 to 100 years)?*

"We are firmly convinced that a farmer who has switched to regenerative methods and learned about the advantages for his farm will not return to conventional agricultural methods and thus to depleting humus. On the contrary, we think that in the long term a humus content of five to six percent is achievable and important in this part of the world. At present, a large proportion of soils are in poor condition, with humus contents of between 1.5 and two percent. For these soils to reach a humus content percentage of five to six percent, we need many years of good, regenerative cultivation and that means long-term possibilities for carbon offsetting for companies."

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# THE MIND IS THE DOCTOR

ROB WILLIAMS FOUND A MECHANISM  
TO MANAGE BELIEFS AND THE MIND

**E**VER SINCE HE saw Disney's cartoon movie *Fantasia* as a young boy, Rob Williams dreamed of being a magician. Half a century later he may just have become one. He does not use magic to clean the kitchen like Mickey Mouse did—or at least tried to do—in the movie, he “cleans” something far more important: The subconscious that drives most of our behavior and experience.

There is no shortage of offerings for personal growth miracles in today's world. Yet many of these teachings and therapies fail when conscious commitments and intentions do not succeed in overwriting self-limiting beliefs at the subconscious level of the mind. Changing the subconscious, that drives most of our behavior and experience, is precisely the focus of the method that Williams developed almost 25 years ago. His PSYCH-K (referring to a combination of psychology and kinesiology) is a still little-known gem that offers a simple and direct way to help people overcome self-sabotage. PSYCH-K has contributed to spectacular breakthroughs in many lives. The method comes highly recommended by stem cell biologist Bruce Lipton who wrote the bestseller *The Biology of Belief*, in which he provides evidence that we can change our environment, our reality through changing our perceptions.

Rob Williams did not set out to become a psychotherapist. After his college major in philosophy he decided to take a job in the backpacking industry because as a teenager he had a powerful experience in nature that made him feel that everyone should enjoy the outdoors. He had moved on to executive positions in the energy management and telecommunications industries when one day he realized that his work was not providing the fulfillment he was seeking. He decided to take a master's degree in counseling. Subsequently he started his career as a therapist.

He quickly discovered that the worlds of business and counseling were far apart. In business he had learned “to get results, no matter what”; in therapy on the other hand, he discovered that it was all about the process: “The process is the end itself, you just need therapy.” That dichotomy felt unsatisfying and incomplete. Williams followed courses in NLP, hypnosis, Touch for Health, Educational Kinesiology and Reiki, in search of more effective treatments “to help my clients make positive and lasting changes in their lives.” Williams: “I was also frustrated by the limitations of the old counseling formula of ‘Insight + Willpower = Change’. Many of my clients, up to their eyeballs in insights about how and why they had become the way they were, were still not experiencing the satisfying lives they sought.”



## ‘UNTIL YOU CHANGE THE BASIC SOFTWARE OF THE SUBCONSCIOUS, YOUR HARD DRIVE, YOUR LIFE WILL NOT CHANGE’

Then one very frustrating December day brought Williams the answer he was seeking. He had spent the day putting together a mailing to promote his counseling services and ran into all the maddening printer and copier challenges that are so familiar to most of us, when he finally gave up, and ran into his garden and sat on a half-frozen lawn chair. Williams: “While fuming I said out loud: ‘Okay God if you do not want me to do what I am doing, what do you want me to do?’”

Not very susceptible to spiritual experiences until that moment, Williams was not really expecting an answer. “Not at all, I was just expressing my anger.” But to his astonishment, “within minutes the details of a pattern for changing subconscious beliefs showed up in my head, like on a teleprompter”.

He ran to his computer and typed down what he had seen. Most of what he saw on his own screen was new to him. That was the beginning of PSYCH-K.

We are meeting in a San Francisco hotel that looks out over the Golden Gate Bay. In the distance is Alcatraz Island once the site of a notorious prison; today the rather spooky, empty buildings provide a popular tourist destination. Staring in the direction of Alcatraz Williams says: “Many people are prisoners of their own beliefs. PSYCH-K is all about breaking out of these prisons.” He speaks fast and formulates well, still more the business executive than the counselor who is comfortable with long pauses. But there is a warmth and passion in his eyes and voice that radiate that he is foremost a pioneer of possibility who dedicates his life to making the world a better place for his fellow human beings.

Williams expresses a refreshing modesty about his achievements. After 30 plus years he is proud to have trained just over 30 Certified PSYCH-K Instructors who teach workshops around the world. In addition, there are several hundred PSYCH-K Facilitators who offer private sessions, in person, or online, who are listed on the PSYCH-K website. There is no aggressive PSYCH-K marketing machine, no desperate attempts to get publicity; the therapy and the training are available for those who find them and are ready for them. Authenticity and sincerity stand on top and Williams does not feel a need to shout from any roof.

PSYCH-K works with sets of paired statements like ‘the universe is a friendly place’, ‘the universe is an unfriendly place’ or ‘I love myself’, ‘I hate myself’ and uses muscle testing to communicate with the subconscious. Scientific research has shown that the subconscious directs the motor function in the body and controls muscle movements. That is also the idea behind lie detectors. Muscle testing can be used to detect agreement or disagreement with important self-referential statements like ‘I respect myself’ or ‘I do my best, and my best is good enough’. The muscle tension will be strong if our subconscious agrees with such statements. But quite often the programming in our subconscious is different, like ‘No matter what I do or how hard I try, it is never good enough’. In that case that limited belief will influence most of our experience as neuroscience has verified that the subconscious mind determines our actions and experiences 95 to 99 percent of the time.

Williams: “You can repeat affirmations until you are blue in the face, it seldom makes any difference. Most of the time it is not about positive thinking. It is not about: oh, cancel, I do not want that thought. You already had the thought. So until you change the basic software of the subconscious, your hard drive, your life will not change.”

The problem is that our subconscious ‘records’ experiences from our earliest moments onwards. “We are brought into this world into various cultures that have a whole bunch of mindsets already in place for us. We start internalizing those even before we are out of the womb. Your parents start to treat you in a way that fits the society’s norms and their own beliefs. By the time you’re 12 years old, generally speaking, you are quite asleep at the wheel of your own life because you are ‘inculturated’ by whatever your culture and your parents say is true and right. That is not all bad. But you want to change the beliefs that are not serving you, that are limiting you in some way,” says Williams.

Muscle testing reveals any disagreement between your conscious desires and your subconscious beliefs. Then the process of reprogramming the subconscious mind can begin. For this it is critical to, as Williams says, “speak the language of the subconscious”. The subconscious mind thinks ‘literally’, ‘child-like’, he argues. That means that the simple thought ‘I want to be happy’ is too vague. You have to specify the details of your goal. You do not just ask for ‘more money’, you need to ask for a specific amount. And you have to do so in sensory-based language. What will you see in your life when you have accomplished your goal? What will you hear other people saying about you? How will you feel when you have succeeded and where in your body will you feel that?

PSYCH-K also uses “belief points” on the body. These—acupuncture—points from Chinese medicine relate to specific organs that are associated with certain emotions. The heart stands for love, the lungs for self-esteem. Et cetera. Addressing these points helps to transform self-limiting beliefs associated with the points.

Even when Williams explains how PSYCH-K works, there remains a magical dimension in the process, that has to be experienced: “Magic is possible in the world, but you do not do it until you are wise enough to use it properly.” Whatever

the workings, the results often seem miraculous. Williams first tested his new approach with himself and a few close friends before he dared try it with his clients. “I felt physical changes in my body. I was astounded, because I am not that sensitive. I do not feel things in my body, but I did then.”

He vividly remembers his first major case with a client, a woman addicted to smoking and drinking who came to him from a rehab center. She also had Crohn’s disease. After about 45 minutes into her first PSYCH-K session, lying down on a body-table in Williams’ office, she said: “I do not know what, but something just happened.”

Williams: “I said: ‘That is great, I do not know either’. A few months later I heard from the woman that the doctors who had diagnosed her Crohn’s disease could not find it anymore. New tests and x-rays did not show anything. The doctors said that they must have misdiagnosed because Crohn’s is an ‘incurable’ disease. This was my first mayor indicator that I was onto something.”

Many years and many miraculous changes later, Williams explains how he believes healing works: “All these supposedly ‘incurable’ diseases are not so incurable after all. That incurable really means, incurable from the outside. If you want to interrupt a physical process called disease, you need to leverage belief systems that will activate biological responses that trigger a self-healing response. PSYCH-K does not heal anything. It is a catalyst for the body to heal itself. The mind is the doctor. The pharmacy is in your head. With the right instruction by the mind our bodies produce all kinds of things that are similar to the drugs that are made by the pharmaceutical industry.”

“It is very simple: If you have a disease, and all of a sudden you have an altered subconscious belief that your body is in perfect health, a dynamic tension arises. That tension has to be resolved in favor of the consciousness because that comes from a higher energy dimension. And consciousness will use all the magnificent resources of the mind-body system to make that new reality come true.”

In about eighty percent of the cases the changes are long lasting, according to Williams. He compares it with a program on your computer: “You change a document and you press the save command. That is the version that remains. You do not

## 'DECIDING WHAT IS WORTH WANTING IS A LOT HARDER THAN GETTING WHAT YOU WANT. PSYCH-K CAN TEACH YOU HOW TO GET WHAT YOU WANT'

open the document the next day to find that is has changed to an earlier version. It is the same thing with PSYCH-K. There is literally an edit and a save command in the process. You can take that same thing that you have done and overanalyzed for years and you write some new 'software' and then that becomes what you boot up with in the morning."

Where PSYCH-K fails it is mostly in the case of, what Williams calls, "secondary gains". "Somebody may say: 'I want to get well and get back to work'. And then, when they do, they find that they are missing something. They were getting attention, for instance, when they were sick. A disability was also an ability to get something else. In such cases people may fall back to old behavior."

Listening to Williams I realize that, while we are observing dysfunctional political debates in most Western capitals and while we keep reading about the damage done by big business to society, we are also on a high speed track towards a healthier and wiser world. Just think about it: When more and more people embrace opportunities like PSYCH-K—and that is happening on a large scale—more and more people will be able to transform their self-sabotaging lives and become happier and more true to their own life's missions. Many of us are changing and because of that the societies around us are bound to change.

Williams also focuses his work on the business community. "Most of the businesspeople making decisions that are trashing the planet, do not want to do that", he says. "They just do not know any other way. In order for them to get out of these destructive patterns, they have to be able to change their subconscious beliefs."

He pauses. Then adds philosophically: "In today's society money management is the most important skill. That is wrong. Mind management is the most critical skill. If you manage your mind, you will always be in a good state."

"There are big books that describe the different psychological disorders. I think there is really only one disorder: I call it the Illusion of Separation. If you believe you are separate from the source of all that is and separate from each other, you will have all kinds of problems in your life. The illusion of separation gives us the idea that we can harm somebody else and not harm ourselves at the same time. You cannot bomb another country if you realize that these kids are our kids. You cannot make a decision in New York or São Paulo to destroy a rainforest, if you know that forest is part of the eco-system on which your life depends."

Ultimately Williams sees PSYCH-K as an instrument for spiritual growth: "I think we all have one purpose and that is to manifest our full divinity while we are incarnated in physical bodies." At the same time he observes that still few people pursue this highest of goals: "I think the biggest misuse of PSYCH-K is that people settle for too little. All they want is money or health, or the right partner. All those things that people think they want. But if they get them, they find they are hopelessly inadequate to get what they really need. These things do not produce the stuff that really counts—love, joy, purpose, satisfaction and peace—in fact they are often distractions to achieving those life-enhancing goals."

"Someone may say: 'I want ten million dollars'. But if you delve deeper you will eventually come down to an emotion. An intangible. That person wants to be happy. People think they need tangibles to get to the intangibles. They think they know what they want; seldom do they know what they need."

Laughter and music rise from the street beneath the window of the hotel. San Francisco is enjoying summer. My thoughts go back to the wizard in Fantasia as Williams concludes: "Deciding what is worth wanting is a lot harder than getting what you want. I can teach you how to get what you want." **[JK]**

More information: [www.psych-k.com](http://www.psych-k.com)

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(the above message is based on the teaching and inspiration of Ken Wilber)

# THE CLASH OF THE TITANS

[ Astrology by Pi ]

THE SIGN OF  
AQUARIUS  
REFOCUSSES THE  
OUTLOOK OF THE  
WORLD TOWARDS  
DETACHMENT,  
ALTRUISM, AND  
COMMUNICATION

**U**RANUS IS THE planet of sudden change. It is the disruptor. Disruptive sudden change is innovation. It is also revolution. Saturn is the planet of structure. It is solid and steady. It does not particularly like change. 2021 sees them at war. This year they are not compatible bed fellows.

When Saturn dances positively with Uranus, inventions that transform the world appear. New technologies enhance the lifestyles of mankind. Dynamic leaders take command of countries and corporations. In such times, change is for the greater good.

However, when the two planets are out of step and challenge each other, the world becomes a different place. Saturn will always be a dampener to the excitable Uranus. In the world of astrology, they are at 90 degrees to each other. This is known as a square. Squares do not bring harmony. They bring challenge.

Challenge with friction.  
Challenge with polarisation.

Freedom questions authority. The old guard attempts to quash the new revolutionaries. We have this energy every day of this year. And it is all over the world. It never promises a smooth journey.

These sky Gods clash three times this year. The tension rises and falls in waves with peak energies on these dates: 17th February, 14th June, and 24th December.

Why does this happen three times I hear you ask?

Well, it is because planets move retrograde. They appear to move backwards but they do not actually.

They seemingly align three times. Often we see an event on the first occasion, the second occasion brings a crisis and the third occasion brings resolution. The build ups unfold over several weeks.

Let us take a look at what has happened so far. Then we will know what is going to happen next!

Arguably, the middle of February saw the new administration settle into the White House. During the preceding weeks in January, we saw the planet of structure battling it out with the planet of explosive change. The Capitol was stormed. Modern revolutionaries challenge the traditional protocols. Uranus and Saturn showed the very same angular displacement in 1861 when civil war broke out in the United States.

This February, the stock market and indeed, the tech stocks all made major highs.

Uranus is the ruler of these sectors—innovation, invention, new technologies and concepts. Uranus is in Taurus, the sign of money. Saturn places restrictions on these areas. Saturn is in Aquarius, the sign that it rules. Taurus and Aquarius are 'fixed' signs. They do not like change. Not at all. Can you see how this could play out?

This year will see exceptional volatility in the tech stocks and their friends. The entire planet has also been under the disruptive effect of the pandemic. This is a classic definition of the Uranus Saturn Battle. Very few of us can claim that our lives have not changed over the last 18 months. This planetary war is a demolition bulldozer. It is breaking apart everything that was not working. It is clearing a new pathway.

There is good news. The planet of growth, Jupiter, is also in the sign of Aquarius. This means that the Sky Gods are presently clearing the way for much greater and better things! The year 2021 is a year of transformational change!

Embrace it!



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