My high school algebra teacher used to say, "Be clear about your calculation process. If I don't know what steps you took, I don't know what steps you didn't take. If I don't know what questions you asked, I don't know what questions you didn't ask."

It's asking yourself the hardest question: does this data really show this? Or does this result just make us feel more successful or comfortable? and

At the end of the project, the Health Media Collaborative says it found that 87 percent of tweets about that very blatantly offensive quit-smoking ad expressed fear. But did they conclude that the ad actually got people to quit?

The answer is no, this is science, not magic.

So if we're going to unlock the power of data, we don't necessarily have to go blindly into Orwell's totalitarian future, or Huxley's obsessed with minutiae, or a horrific hybrid of the two.

What we need to do is honor critical thinking and take inspiration from precedents like the Health Media Collaborative.

thank you

(applause)

I experienced my first coup when I was four years old.

Because of the coup, my family left their homeland of Ghana and moved to Gambia.

Unfortunately, six months after we moved there, there was another military coup.

I distinctly remember waking up in the middle of the night, gathering my few belongings, and walking for about two hours to my hideout.

I slept under my bed for a week, afraid of bullets flying through the window.

Then, when I was eight years old, my family moved to Botswana.

this time unlike last time

there was no coup

Everything went well and I got a great education.

The infrastructure was good, and Botswana at the time had fiber-optic telephones long before they became widespread in the West.

The only thing Botswana didn't have was its own TV station. Only its own TV station.

Mandela refused to give up on his goal of ridding South Africa of apartheid.

And I was struck by how one great leader can make such a difference in Africa.

And when I was 12, my family sent me to secondary school in Zimbabwe.

It was a wonderful place in the beginning, a growing economy, great infrastructure, it was like a model for economic development in Africa.

After graduating from high school in Zimbabwe, I went to university abroad.

Six years later, when I returned to Zimbabwe,

everything had changed

the country was falling apart

Millions fled the country, the economy was a mess, and 30 years of development seemed to suddenly vanish.

How did Zimbabwe deteriorate so quickly?

Many people admit that it's all the leaders' fault.

A man named President Robert Mugabe single-handedly brought this country down.

Growing up in different African countries gave me two things.

First, love for Africa

Everywhere I went, I experienced the stunning beauty of Africa, and I saw the strength and spirit of its people, and that's when I realized that I wanted to spend the rest of my life working for Africa and making it a great continent.

At the same time, I realized that to make Africa a great continent, we needed to solve this leadership problem.

As I said, the countries I've lived in -- Ghana, Gambia, Zimbabwe -- have witnessed coups and corruption, but in contrast, Botswana and South Africa have seen great examples of leadership.

It turns out that the quality of leadership makes Africa either good or bad.

You might think that leaders are important everywhere.

But if there's one thing you can learn from my talk today, it's that Africa makes more of a difference to one great leader than anywhere else in the world, because --

Because Africa has poor social institutions, judicial, constitutional and civil society.

I can tell you empirically that in a well-established society, one leader is limited in what one leader can do, but in a poorly-established society, a single leader can build a nation or bring it down.

let's be more specific

Suppose you become the president of the United States

"Wow I finally climbed

You'll think, 'I've become the most powerful man in the world.

So when I thought about making a law,

All of a sudden, Congress taps me on the shoulder and says, "Hey, hey, you can't do that."

When you say "I want to do something like this"

The Senate stands in your way and says, "You can't do that."

"Let's print more money, the economy needs a stimulus."

when you say

central bank governor

they think you're crazy and they might impeach you

But if you're the president of Zimbabwe, "Because I like the presidency.

I'm going to do this for the rest of my life,' and -- (Laughter) I can be president forever.

you decide to print more money

I called the governor of the central bank and said, "Double the money supply."

The central bank governor will say, "Sure, is there anything else you need to do?"

This is the power of African leaders, and this is why leaders make such a difference in Africa.

The good news is that the quality of leadership in Africa is improving.

I believe there are three generations of African leaders.

The first generation came in the '50s and '60s.

People like Kwame Nkrumah from Ghana and Julius Nyerere from Tanzania.

Their legacy is African independence.

Let's give him credit for liberating people from colonial rule.

After them comes the second generation.

These people have done nothing but wreak havoc on Africa.

War Corruption Human Rights Violations

When people think of African leaders, they think of Mobutu Sese Seko of Zaire or Sani Abacha of Nigeria.

The good news is that most of these leaders have already disappeared and a third generation has emerged.

The late Nelson Mandela, Paul Kagame, most of today's African leaders are these people.

Such leaders are by no means perfect, but one of their achievements is that they have cleaned up most of the second generation.

They ended the conflict, I call them the Stabilization Generation.

They've been holding their people accountable and improving their macroeconomic policies. For the first time, we're seeing Africa grow, and it's the second fastest growing economy in the world.

These leaders are by no means perfect, but they are generally the best leaders in the last 50 years of history.

So where do we go from here?

I believe that the fourth generation, which will follow this generation, has a unique opportunity to transform Africa.

I think they can do two things in particular that previous generations couldn't do.

The first thing they should do is bring prosperity to Africa.

Why is prosperity important?

Because previous generations failed to tackle the problem of poverty.

Africa today is the fastest growing and poorest country in the world.

By 2030, Africa's working-age population will surpass China's, and by 2050 it will have the largest working-age population in the world.

We're going to have a billion people in Africa who need jobs. We need to grow our economy so quickly that it's like sitting on a time bomb, not just for Africa, but for the world as a whole.

Let's take the example of one person who is making this prosperity thing happen: Latisha.

Latisha is a young woman from Kenya who dropped out of school at the age of 13 because her family couldn't afford her tuition.

So she started a business raising rabbits, a delicacy in her area.

The business went so well that in less than a year, I had hired 15 women who were very profitable, and not only did I go to school myself, but through these women, I funded 65 children to go to school.

With the money she earned, she built a school that today provides an education for 400 children in the area.

she just turned 18

(Applause) Another example is Eric Lajonali.

I am from Madagascar

Agriculture is the cornerstone of job creation in rural Madagascar, but he realized that fertilizers were too expensive for most of Madagascar's farmers.

Madagascar has a special bat that produces highly nutritious poop.

In 2006, Eric quit his job as a CPA to start a company that makes fertilizer out of bat droppings.

Today, Eric's company makes millions of dollars in revenue, employs 70 full-time employees, and hires another 800 during peak bat poop season.

What I love about this story is that it shows that the opportunities to create prosperity are everywhere.

Eric is known as "Batman"

(Laughter) Who would have thought that you could build a multi-million dollar company out of bat droppings and all that stuff?

The second thing that this fourth generation should do is create our own social fabric.

The fourth generation needs to create a social fabric that doesn't allow some people like Robert Mugabe to do whatever they please.

All of this sounds great, but where does the fourth generation come from?

Wait for them to appear out of nowhere? Or will God send them?

no i don't think so

It's an important issue for us, so we can't leave it to chance.

We need to create our own African institutions and systematically and practically find and nurture leaders.

That's what we've been doing at the African Leadership Academy for the last 10 years.

Latisha is one of our young leaders.

Today, we are educating 700 people for Africa, and we hope to have 6,000 in the next 50 years.

but there is one problem

Every year, 4,000 people apply for the 100 spots for young leaders training, and there's a huge demand for leadership training courses.

we couldn't meet it

That's why today, for the first time, I'm sharing with you my plan to expand the African Leadership Academy initiative.

Establishing 25 new universities in Africa to train leaders for the next generation of Africa

We plan to train 10,000 leaders at a time on each campus and 250,000 leaders at any given time.

(Applause) We will train three million leaders to transform Africa over the next 50 years.

My hope is that half of them will be the entrepreneurs that we need, creating jobs, and the other half will work for governments and non-profits, work for governments and non-profits, and create the social institutions that we need.

they don't just learn

Learn how to be a leader and develop your entrepreneurial skills

So think of it as Africa's version of the Ivy League. But here, admissions aren't based on SAT scores or family wealth or bloodlines.

Yet all we are trying to create is just an organization.

We cannot transform Africa alone.

My hope is that many African organizations will flourish and work together around the same vision of developing the next generation of African leaders, the fourth generation, and teaching them about the common challenge of creating jobs and building social institutions.

Nelson Mandela once said, "Sometimes there's a generation that's called great.

You can be part of that great generation."

If we are careful to identify and develop the next generation of leaders in Africa, the coming fourth generation will be the greatest generation that has ever existed, not only in Africa, but in the world.

Thank you for your attention

(applause)

I think every aid worker in Africa at one point in his career wants to stuff the money that's been spent on projects like building schools and training programs into a suitcase, fly to the poorest villages, and drop that money out the window of an airplane.

Because for a seasoned aid worker, the idea of ​​delivering cash to the world's poorest people is not outlandish, and it really makes sense.

I came to this idea exactly 10 years ago, when I was lucky enough to find out that this idea actually existed, and it might just be what the support system needed.

Economists call this the "unconditional cash transfer," which literally gives you cash with no conditions.

Developing country governments have been doing this for decades, but only now are they able to use their experience and new technologies to create a model of assistance delivery.

Pretty simple idea, right?

So why did I spend ten years doing something else for the poor?

Honestly, I believed that money could do better for the poor than they could do for themselves.

There were two assumptions about this. First, poor people are poor because they don't have access to education, so they can't make good choices. Second, they need professionals like me to identify and deliver their needs.

But in reality it wasn't

There's been a lot of research going on in recent years about what happens when you give cash to the poor.

A lot of studies have generally found that the cash we get is used to improve our lives.

Pregnant women in Uruguay buy nutritious food to give birth to healthy babies.

Sri Lankan men invest in business

Researchers who have studied our work in Kenya have found that the investments that local people made were very varied, from livestock to tools to home improvement, and that one year after receiving the cash, they were also increasing their income through business and farming.

Nor did people spend more on drinking and smoking, and people didn't work more on drinking and smoking.

In fact, it's the opposite, you'll work more.

So far it's been material needs

In Vietnam, there were elderly beneficiaries who bought coffins In Vietnam, there were elderly beneficiaries who bought coffins

It may go against Maslow's hierarchy of needs, but I think it's a very humbling choice to prioritize spiritual needs.

I don't know if I'd give you food, or things, or a coffin, but the question is, how good are we at allocating resources on behalf of the poor?

Is it cost effective? about it

Again, let's look at the empirical evidence: what happens when we deliver what we choose?

A compelling study of a program in India found that in an effort to provide livestock to the destitute, 30 percent of recipients turned away and put the livestock up for sale, and what they got was cash.

Now here's the real irony: if you paid $100 worth of stuff in this program, you would have spent another $99 on paperwork and stuff.

So what if we could use technology to deliver cash, whether it's from aid organizations or anyone else, putting cash directly into the hands of the poor?

Today, three-quarters of Kenyans use mobile money. It's like a bank account on any mobile phone.

The sender pays 1.6 percent and with one click the money is sent to the recipient's account, no middleman.

Just as technology can destroy existing industries, just as technology can destroy existing industries, payment technology in poor countries may destroy existing aid.

Mobile money is so ubiquitous that it will one day reach the billions of poor people in the world.

That's why we launched GiveDirectly

We are the first organization to provide cash transfers to the poor.

So far, we've reached 35,000 people, one-time $1,000 transfers per family in rural Kenya and Uganda.

So far, I've been looking at people who live in extreme poverty in poor villages, who live in mud and thatched houses instead of cement and steel. People who live in mud and thatched houses.

Suppose you were this family

We come to your house with an Android phone in hand

I'll ask for your name, I'll take a picture of your face, a picture of the hut, and I'll get the GPS coordinates.

That evening, when all the data is sent to the cloud, each data is reviewed by a team of experts, including satellite imagery.

And then I'll come back to your house, and if you don't have a cell phone, I'll ask you to buy me a simple cell phone, and I'll transfer money there in a few weeks.

What seemed impossible five years ago can now be done efficiently and without fear of corruption.

If giving more money to the poor proves to be successful, we need to reconsider other forms of aid beyond cash transfers.

I think the logic behind aid work today is, "At least we're doing something good."

If you set this as your goal, you'll become complacent, thinking that you're doing nothing because you're helping, and you'll end up with inefficiency in your investment. You'll think you're doing something revolutionary, and you'll focus on writing reports, or you'll spend money on planes and cars.

If the logic of aid work was, "Can we do better than handing cash directly?"

What aid organizations should aim for is that poor people can do better than they can on their own.

Of course, just handing out cash doesn't create public goods. We also need to eradicate disease, strengthen public institutions, and so on.

i look forward to help

I think most relief efforts are doing better than dropping money from planes.

But I'm also convinced that much of our current aid doesn't work as effectively as giving money directly to the poor.

I hope this will be reversed in the future

thank you

(applause)

George and Charlotte Blonsky are a married couple living in the Bronx, New York, who have an invention.

In 1965, it was patented, and it's called, "a device that helps women give birth."

This device consists of a large round table and attached equipment.

When a woman goes into labor, she lays her back on top of it and secures it to a table, and then spins the table at high speed.

The child pops out, so you used centrifugal force.

If you take a good look at this patent, especially if you have the technical background and talent, you'll quickly realize that there is a flaw or two in this design.

The answer is that the woodpecker's brain resides in its skull, but the way it sits is different from our brain, the human brain.

Woodpeckers generally peck at trees and bang their heads against trees thousands of times every day, every day!

As far as we know, woodpeckers are still okay.

I wonder why?

The woodpecker's brain, like the human brain, doesn't move inside.

The brain is so tightly packed that at least it can withstand a head-on impact.

It's only in the last few years that this research began to gain prominence, especially here in the United States, as people began to wonder what was going on in the brains of football players who bang their heads over and over again.

You thought it had some resemblance to the woodpecker.

A few years ago, there was a paper published in the British medical journal The Lancet, "A man whose injured finger smelled putrid for five years."

Dr. Caroline Mill accepted this patient as a team, but had no idea how to treat him.

This man cut his finger while processing chicken, and then he started to smell really bad.

When he entered the room, it smelled so bad that the doctors and nurses there would run away.

it's really intolerable

I've tried every drug and treatment imaginable.

One year later, it still stinks—

Two years later, it still stinks—

And three, four years later, it still stinks.

After 5 years, the odor naturally disappeared.

it's a mystery

New Zealand's Dr. Leanne Parkin and others tested the validity of ancient local practices.

We have a lot of big hills in our town, San Francisco class hills.

In the winter it gets really cold and freezing

There will be many injured people

Dr. Parkin and his colleagues tested it by stopping people on their way to work in the morning and asking them to do something.

have them try one of two conditions

It is customary in this town to wear socks over your boots in the winter.

And what the experiment found -- and it's pretty self-explanatory -- is that it's true.

Wearing socks above the inside of the boot makes it easier to walk without slipping and falling.

Now, I hope you agree with me, but all of the things I've talked about so far deserve recognition (Laughter).

In 1991, I started the Ig Nobel Prize ceremony with my friends.

Awards are presented to 10 individuals and groups each year.

There is only one selection criterion, very simple.

You made people laugh and you made them think

What you did made people laugh and think

Whatever it is, it's important here.

A week later, it's still spinning around in my head, and it's kind of like the urge to tell a friend.

that's the level we want

Every year we receive about 9,000 new nominations for the Ig Nobel Prize.

Of these, always 10% to 20%, of these, always 10% to 20%, are self-nominated candidates.

These self-nominated candidates never get the award.

Statistically, it's pretty hard to aim and win prizes.

Even if you're not aiming for it, it's pretty difficult numerically.

About the selection of the Ig Nobel Prize winners, please be aware of this, we will be contacting the winners privately.

We are offering you the opportunity to decline this honor.

Fortunately, almost all of them have received awards.

What do you get for winning the Ig Nobel Prize?

there are some

Ig Nobel Prize Winner ― [“Breaking glass with a hammer in an emergency”]

The design is different every year, but [“Emergency breaking the glass with a hammer”]

Handcrafted from very cheap materials

This is a picture of the award given in 2013.

In the world, we usually give the prize money to the winner as a supplementary prize.

we can't do that because we don't have money

Rather, we ask the winners to attend the award ceremony at their own expense, but most of them come.

But last year I was able to squeeze in a little money.

We gave 10 Ig Nobel Prize winners, each with $10 trillion.

One Zimbabwean 10-trillion-dollar bill.

We've gone so far as to print banknotes with denominations up to 100 trillion dollars.

By the way, the Governor of the Reserve Bank of Zimbabwe has won the Ig Nobel Prize in Mathematics.

The winners will then receive an invitation to an awards ceremony at Harvard University.

When I get there, I go to the largest auditorium at Harvard.

The 1,100-seat auditorium is jam-packed, and Nobel laureates are waiting on stage to shake your hand and hand you the Ig Nobel Prize.

This is the heart of the award ceremony.

It's kept a secret from them until that moment -- Nobel Prize winners shake hands, but they don't know who they are until the announcement.

Now, let me tell you a little bit about other award-winning research in medicine.

So far, 230 awards have been awarded.

There are many winners around you.

you could be a winner too

About 30 years ago, I wrote a paper called "Injuries from Falling Coconuts."

Dr. Peter Valls announced that he is Canadian-

As Dr. Valls explained at the award ceremony, when he was a young doctor, he wanted to know the world.

go to Papua New Guinea

He worked at the hospital there, and he was interested in what made patients come to the hospital.

When I looked at the records, I found that an astonishing number of the patients who came to the hospital had been injured by falling coconuts.

A classic example is this: a person who lives in highlands, where there are not many coconut trees, visits relatives in coastal areas, where there are many coconut trees.

They find it just right to rest or lie down by a coconut tree.

But a coconut tree is about 30 meters tall and bears a kilogram of fruit, and the fruit can fall at any time.

A European team of doctors has published a series of papers on colonoscopies.

Everyone knows about colonoscopies, and there are many ways to do it.

sometimes at the same time

In these papers, they're written to doctors who are doing the same, and they're telling you how you can reduce the risk of your patients exploding when they do a colonoscopy.

There were some challenges in the beginning

Because, as you know, we're basically looking at long, narrow, dark places.

I want more space

By inflating it with gas, it becomes easier to see inside.

You're adding gas to the methane gas that's already in your colon.

In the beginning, oxygen was often used

I added oxygen to the methane gas.

And to see inside, you need light, so you put a light source inside, and the light source at the time was pretty hot.

So oxygen and heat were added to combustible methane gas.

(Laughter) Patients rarely explode, but they do happen.

The last award-winning study I'd like to mention is that of Dr. Elena Bodner.

Dr. Elena Bodner invented a bra that can be quickly transformed into a pair of gas masks in an emergency.

One is to save your life, and the other is to save the life of someone who was lucky enough to be there.

Dr. Elena Bodner explained at the award ceremony that she grew up in Ukraine,

I've been treating victims of the Chernobyl nuclear power plant accident with fellow doctors.

They later discovered that many of the most severe medical illnesses were caused by particles inhaled by patients.

So she always wondered if there was a way to make a simple mask available everywhere in the event of an emergency.

A few years later, she moved to America

You can have children, and one day she looked down on the floor and her baby son picked up her bra and put it over his face.

So I had an idea

At the Ig Nobel Prize ceremony, Dr. Bodner demonstrated and introduced a prototype of the bra. I will give you one

thank you

(applause)

I have something to confess

I'm addicted to adventure When I was a kid, the flow of time stagnated and sometimes died I wanted to see the bird sitting in the tree outside the window and the blue sky rather than the blackboard covered with chalk on the plane

I wasn't paying attention in class, and my teacher suspected that something was wrong with me.

I'm left-handed, so I'm a little dyslexic, but other than that, I didn't find anything out of the ordinary.

But the doctors didn't look for "curiosity."

For me, curiosity is our connection to the world and the universe, our connection to the world and the universe.

It's about learning more about ourselves, not just our environment, by exploring beyond the reefs and trees.

Now, my biggest dream is to explore the oceans of Mars, but before I can get there, I think there are still quite a few secrets hidden in Earth's oceans.

In fact, if we were to put our Earth as a cosmic oasis for living space, it would have a volume of more than 3.4 billion cubic kilometers, of which we've explored less than 5%.

So I thought, well, there are ways to explore the depths of the ocean: submarines, remote-controlled drones, scuba diving.

But if you want to explore "the last unexplored region of the earth," you should try living there.

In other words, you have to build a log cabin on the ocean floor.

So when I visited TED Award-winner Dr. Sylvia Earle, it sparked a curiosity in my soul.

you all know her

Two years ago, Dr. Earle petitioned to save the last underwater oceanographic laboratory and try to bring it back to land so that it wouldn't be abandoned.

So far, there are only about a dozen undersea laboratories.

Now there's only one left, it's 14,000 kilometers from the coast, and the water is 20 meters deep.

called "Aquarius"

Aquarius is, in some ways, like a dinosaur, an ancient robot chained to the bottom of the sea, called Leviathan.

can be said to be a heritage

That visit made me realize that life is short if you want an experience like Aquanaut.

After years of intensive training and two years of preparation, I headed to Aquarius, and this abode was like a new home, waiting to welcome me.

The purpose of undersea exploration is not to retreat into Aquarius.

I don't live in a place the size of a school bus.

It gave me time to wander outside, to explore, to understand the last unexplored areas of the ocean.

Megafauna also came to visit

This spotted eagle ray is a common creature in the ocean.

But the reason this picture is important -- the reason I'm showing you this picture -- is that this spotted eagle ray, instead of attracting other eagle rays and acting like a roaming creature, has started to take an interest in us, to our new neighbor who's moving to the bottom of the ocean and looking for planktonic creatures.

As we watched different creatures, they came closer and closer, and we had plenty of time, so these creatures -- the "reef dwellers" -- got used to us.

This spotted eagle ray was swimming around us for all 31 days of the mission.

Mission 31 wasn't about breaking records.

The purpose was to connect humans to the sea.

Because we had so much time, we were able to see sharks and groups of groupers that we had never seen before.

It's like a dog and a cat playing together

We've also been able to come into contact with animals that are much larger than us, such as the endangered pineapple, which is found only in the Florida Keys.

Of course, just like our human neighbors, if they get bored after a while, they'll bark at us. This voice is really powerful, and it can quickly stun prey before it devours them.

It's telling us, "Go back to your settlement, leave me alone."

Now this quest wasn't just an adventure.

There were also important results

We did a lot of scientific experiments, and because of the luxury of time, we were able to achieve in 31 days what would have taken three years to do.

For this experiment, we used PAM, which actually means "Pulse Amplitude Modulated Fluorometer."

Our scientists at FIU and MIT Northeastern University were able to measure the effects of coral reefs.

A pulse-amplitude-modulated fluorometer, or PAM, measures coral fluorescence, which can be linked to problems caused by pollutants in seawater and climate change.

We also used all sorts of cutting-edge equipment, like this sonde, for example, I'm nicknamed the "sponge proctologist."

Thanks to sondes, we can measure more precisely what's happening under the sea -- the issues around climate change, and the impacts on land.

Finally, we looked at the predator-prey relationship.

The predator-prey relationship is very interesting. If you eliminate a predator on the world's coral reefs, the behavior of the prey (the fish that feed on it) changes dramatically.

What we've noticed is that prey not only stopped caring for the reef, like going inside and picking up a little bit of algae and bringing it back to their home, but they also started leaving the reef and it disappeared.

In the last 31 days, I've been able to produce over 10 scientific papers on each of these topics.

But the whole point of the adventure is not just learning, but being able to share what you learn with the world. And for this, thanks to two engineers at MIT, we were able to use a prototype camera called the Edgertronic, which can take slow-motion video at up to 20,000 frames per second.

you can buy

What this camera allows us to do is capture the behavior of ordinary creatures that we can't see with our blinks.

Watch a short video about the capabilities of this camera

You can see the smooth bubbles coming out of the hard helmet.

For 31 days, this camera allowed me to see some creatures that I would normally ignore even though they were right next to me, like hermit crabs.

Now, it's not always easy to use the latest technology that isn't subsea-specific.

Sometimes I turn the camera upside down, or I cable it into the lab, and I control it from the lab.

What this technology gives us is the ability for science and engineering to study and analyze the amazing behavior of creatures that the human eye can't see.

A mantis shrimp's punch is as powerful as a 22-caliber bullet, and if you try to grab the bullet, the human eye can't.

But with this camera, you can see the thorns shrive up and spread out, moments that the human eye can't capture. Another example is a fish throwing sand.

It's called a scallop goby, and when you're actually in front of this fish, you can't see its fins moving in real time, because it's so fast.

One of the greatest gifts for those of us who lived underwater was the availability of WiFi, which allowed us to stay connected for 31 days and share our experiences with the world in real time, from the bottom of the ocean.

Literally from the bottom of the ocean, we were able to send remote classes over Skype to one of six continents, giving a total of 70,000 students our experience every single day.

Here's a picture I took with my smartphone of Itayara on the seafloor, showing it to a student.

I've never seen anything like this before

I dream of the day when underwater cities are built. I believe that if we can cross the boundaries between adventure and knowledge and share knowledge with a diverse group of people, we can solve all kinds of problems.

My grandfather used to say, "People protect what they love."

And my father said, "How can a man protect something he doesn't know?"

I've been thinking about this all my life

nothing is impossible

We should dream, we should be creative, and we all need adventure, to create miracles in the darkest of times.

Whether it's climate change, poverty reduction, or giving back to future generations what we've taken for granted, it all starts with an adventure.

Who knows, maybe we'll have an underwater city, and maybe some of you will create the Aquanaut of the future.

thank you

(applause)

At TED, humans are the stars, but I would like to introduce the voices of animals, because their bodies and minds and spirits shape us all.

A few years ago, I was fortunate enough to meet a tribal elder on an island not far from Vancouver.

His name was Jimmy Smith, and he told me a story told by his tribe, who call themselves the Quickwasutanouk.

He says that once upon a time, all the animals on earth were one.

Even though they looked different, they were all the same inside, and on occasion, the animals would gather in sacred caves deep in the forest to celebrate their unity.

When they arrived at the cave, they shed their skin.

The ravens shed their feathers, the bears shed their furs, and the salmon shed their scales, and they used to dance together.

But one day, a human came into the cave and laughed at what he saw, because humans could not understand it.

The embarrassed animals fled and were never seen again.

I was deeply impressed by the old way of thinking, that although there are many species, all animals are one under the hood.

I wanted to reach beyond furs and feathers and scales.

I want to know the inside of animals

Whether I'm standing in front of a giant elephant or a tiny tree frog, my goal is to connect them head-on with us humans.

Some of you may be wondering why we don't take pictures of people.

Of course, my photos always show people, even if they look like turtles, cougars, lions.

Now it's just a matter of being able to see what's behind their appearance.

As a photographer, I try to reach beyond the differences in genetic appearance, to appreciate what we humans share with all other living beings.

When I use my camera, like those cave animals, I try to shed their skins and reveal their true selves.

As animals endowed with the ability to think rationally, we humans are fascinated by the complexity of life.

As inhabitants of a troubled planet, it is our moral responsibility to address the dramatic loss of biodiversity.

As human beings of heart, we can celebrate the union of life and change what once happened in the Sacred Cavern.

Let's find out together how to join the dance in the cave

thank you

(applause)

three people are coming to dinner

Married Paul is staring at Linda.

Linda, meanwhile, is staring at unmarried John.

In this case, is it possible that a married person is staring at an unmarried person?

think about it

Many people will think that there is not enough information to give an answer.

but that's not

Linda is either married or unmarried and has no other choice.

In either case, the married is still staring at the unmarried.

This explanation causes many people to change their minds and accept the correct answer, even though they were initially confident in their response.

Now let's look at another example

In 2005, Brendan Nyhan and Jason Leifler conducted a poll of Americans about the legitimacy of the Iraq War.

The researchers had participants read an article that indicated that no weapons of mass destruction had been found.

But many of the participants not only continued to believe that weapons of mass destruction had been found, but they also strengthened their original beliefs.

Why do discussions change or reinforce people's way of thinking?

Arguments are more persuasive when they know their audience well, and the consideration is what they believe, who they trust, what they value.

Mathematical, logical arguments, like the dinner example, work well because even though people may come to different conclusions, they're starting with a set of common premises.

In 1931, the young and unknown mathematician Kurt Gödel proved that it was impossible to construct a logically consistent mathematical system.

Despite decades of attempts by brilliant mathematicians like Bertrand Russell and David Hilbert, the proof of this theorem was accepted because it was based on axioms that everyone in the field had already agreed upon.

Of course, many disagreements involve differing ideas, some of which cannot be settled by simple logic.

When ideas involve outside information, it often comes down to which sources and authorities people trust.

One study asked people to estimate some statistics related to global warming.

Participants were asked, "How many of the 12 hottest years since 1850 were between 1995 and 2006?" After answering the question, participants were given data from the Intergovernmental Panel on Climate Change (IPCC).

Given credible statistics from credible and official sources, it's easier for people to accept the reality of global warming.

Finally, when you can't reach complete agreement with statistics and evidence alone, making a persuasive argument depends on how well you can appeal to the other person's values.

For example, some researchers conducted multiple studies in which people from different political backgrounds were asked to rank their values.

In this study, liberals favored equality, in the sense that, on average, everyone is treated the same, over loyalty.

Later studies tried to persuade liberals to support military spending through various arguments.

Arguments based on equality, such as the idea that the military provides jobs and education for the disadvantaged, were more persuasive than arguments based on loyalty, such as the military uniting the nation.

These three elements -- beliefs, sources of truth and values ​​-- seem to be a simple formula for reaching consensus and consensus.

The problem is that in the early stages of thinking, it's easy to become biased toward your own beliefs, your trusted sources, your values.

Even if that doesn't happen, sometimes it's not easy to get a good sense of what the people who disagree with you value.

The best way to find out is simply to talk to them.

During the discussion, you may receive counterarguments and counter-evidence.

They'll help make your arguments and your logic more persuasive, and sometimes you might find yourself changing your mind.

I'm going to talk to you about a girl named Nagma.

Nagma lived in a refugee camp with his parents and eight brothers and sisters.

When my father woke up every morning, he asked for a construction site job as a day laborer.

One cold winter, unfortunately, Nagma's brother died and his mother became very ill.

In desperation, his father borrowed 250,000 yen from a neighbor.

Months passed, and the impatient neighbor demanded payment of the debt.

But Nagma's father didn't have that kind of money, so they decided to leave it to Jirga.

A jirga is like mediation, and it's used in Afghanistan as a civil justice system.

Usually run by religious leaders or village elders, jiglas are often used in rural states like Afghanistan, where there is a deep-seated antipathy to the state system.

Now, at that jirga, the elders discussed and concluded that the best way to pay off the debt was to marry Nagma to the lender's 21-year-old son.

Nagma was only 6 years old

There are, unfortunately, too many examples like Nagma, and we, in a privileged country, would see it as yet another violation of women's human rights.

If you see Afghanistan in the news, you might think it's a crazy country.

But Afghanistan has an admirable legal system. The zigra is built on long-standing tribal customs, but the law must be followed in the zigra. Of course, selling a child to pay off a debt is not only wildly immoral, it's also illegal.

In 2008, I traveled to Afghanistan to participate in a legal assistance program, where I trained local lawyers for nine months.

During those nine months, I traveled around the country talking to hundreds of prisoners and talking to many companies doing business in Afghanistan.

Through these conversations, I learned about the connections between these companies and people, and I began to see how the laws that were supposed to protect them were not being used, while the horribly illegal sanctions were still in place.

That's what drove me to pursue "fairness." Fairness, to me, means using the law for its legislative purpose -- to protect.

The role of the law is to protect

So I started my own practice and became the first foreign lawyer to stand in an Afghan court. I became the first foreign lawyer to stand in an Afghan court.

All this time, I've studied a lot of laws, talked to a lot of people, read a lot of court cases, and what I've come to realize is that the lack of fairness isn't just in Afghanistan, it's all over the world.

Originally, I avoided taking on human rights cases because I was so worried about the impact it would have on my career and my personal life.

I've also started taking people like Nagma on their behalf for free.

During my residency in Afghanistan and over a decade-long legal career, I've represented everyone from Fortune 500 CEOs to ambassadors to nagma girls with great success.

The reason for this success is very simple: use the system thoroughly, use the law the way the law is intended.

I think -- in a place like Afghanistan, it's hard to achieve justice for three reasons.

The first reason is that people simply don't know much about their legal rights, and I think this is a global problem.

Second, even when there are laws in place, tribal customs often override the laws, just as the first zigra decided to sell the nagma, just as the first zigra decided to sell the nagma.

The third problem that hinders fairness is that even though we have great laws, no one, no lawyer, is going to fight these laws.

And that's what I do, and I take existing laws, laws that are often underutilized, and I use them for the benefit of my clients.

We need to create a global culture of human rights, we need to create a global culture of human rights and invest in a global human rights economy.

Now let's get back to talking about Nagma.

Some people heard about this and contacted me, saying they would take over the 250,000 yen debt.

But it's not going to be that easy. Money doesn't solve everything.

Not in Afghanistan

So I said I would respond, but in order for me to participate, a second zigra would have to be held, which would mean a zigra appeal.

And to do that, you have to get the cooperation of the village elders, and you have to get the cooperation of the tribal leaders, the religious leaders.

I needed the consent of Nagma's father, I needed the consent of that neighbor, and I needed the consent of his son.

I thought, if I'm going to be involved in this matter, I should get your consent to handle it.

So after hours of talking, persuasion, and about 30 cups of tea, we finally agreed and we were able to have our second zigra.

What made this Zigra different from the first was that it put the law at its center, and I thought it was important for everyone to understand that Nagma has rights that need to be protected.

At the end of this zigra, a decision was made by a judge, saying, "The original decision was revoked and the $2,000 debt was paid."

Most— (Applause) Thank you.

And most importantly, the engagement was broken and Nagma was set free.

Protecting Nagma and her liberty saved us too.

Now, my job involves above-average risk.

I was temporarily detained

He's been accused of running a brothel and has been accused of being a spy.

A grenade was also thrown at the office.

It didn't explode, but-

But in this business, the reward is far more important than the risk. The more risk I take, the more risk my clients have. They have more to lose.

In every case I take on, I am supported by my clients as much as I am supported by my clients, and that is my driving force.

Laws, even in their power, are very important to protect us all.

Journalists are also essential because they have a role to play in communicating information to the general public.

So often, while we receive information from journalists, we forget how that information came to us.

This is a picture of the British press corps in Afghanistan.

It was taken by my friend David Gill two years ago.

According to the Committee to Protect Journalists, since 2010, thousands of journalists have faced intimidation, murder, and detention.

When we hear this information, we care little about who it affects or how the information comes to us.

The work of journalists, both nationally and internationally, is truly remarkable, especially in places like Afghanistan. We must not forget that, because they are defending not only our right to information, but also our freedom of the press. Without them, there can be no democratic society.

Matt Rosenberg, who works in Afghanistan,

I'm a reporter for the New York Times, and unfortunately, a few months ago, his story drew the ire of government officials.

As a result, he was temporarily detained and illegally deported.

I represented Matt in negotiations with the government to ensure that his deportation was illegal, that press freedom is guaranteed in Afghanistan, and if it is threatened, it will be held accountable.

Luckily, a few days ago, the Afghan government formally invited Matt over and overturned his deportation.

(Applause) If even one reporter is censored, it will spread and soon the entire country will be silenced.

Defending journalists and press freedom is important because it holds governments accountable and increases transparency.

Protecting journalists and our right to information protects us.

The world is changing every day, and we are living in a new world, and what was once an individual problem is now a global problem that affects us all.

Two weeks ago, Afghanistan had its first democratization, and President Ashraf Ghani was elected. It's a big deal, and I'm optimistic, and I hope he can make the changes that Afghanistan needs, especially in the legal field.

we live in another world

My eight-year-old daughter lives in a world where she only knows black presidents.

It's very likely that the next president will be a woman, so when my daughter grows up, she might ask, "Can a white man be president?"

(Laughter) (Applause) We need to change as the world changes, and what was once an individual problem is now a problem for all of us.

According to UNICEF, more than 280 million boys and girls are currently married before the age of 15.

280 million people

These child marriages fuel a vicious cycle of poverty, poor health, and lack of education.

Sahar got married when he was 12.

I was forced into marriage and sold by my own brother.

When I went to my in-laws' house, I was forced into prostitution

I was abused when I refused

beaten badly with a metal rod

I was also burned

Sahar was tied underground and not fed.

I had my nails torn off with pliers

On one occasion, she managed to escape from this torture chamber and escaped to the house next door, but instead of being protected there, Sahar was taken back to her husband's house.

When I first met Sahar, fortunately, she was in the Women for Afghan Women shelter.

As a lawyer, I always try to be strong in front of my clients, because it's important to me.

For weeks, we didn't know what had happened to her when she was in that house. Finally, she opened up to me and told me everything.

We decided to take this case to the Supreme Court.

This is very important because it was the first time in Afghanistan that a victim of domestic violence was represented by a lawyer.

In addition to this, we also decided to seek damages, and for the first time we used a law that had never been used.

We went to the Supreme Court, where 12 Afghan judges had an American lawyer and a young woman, Sahar, making their case.

Sahar stood up and spoke her mind, she wanted justice and she won it.

After the hearing, the judge unanimously ruled that Sahar's stepfamily should be arrested for abuse, and that her brother should be arrested for selling her -- (applause) -- and the court granted Sahar's claim for damages, and the court also granted Sahar's claim for damages.

What Sahar has taught us is that the law can be used in the way it was meant to be used to break the bad practices that exist. By defending Sahar, we have defended ourselves.

I've been working in Afghanistan for over six years now, and many of my family and friends think my job is like this.

(Laughter) But it's actually like this.

we can all do something

We don't have to buy a plane ticket to go to Afghanistan. Together, we can build a global economy that respects human rights.

We will create a culture of transparency and accountability in accordance with the law, and we will hold governments more accountable to us.

A few months ago, a South African lawyer came to my office and said, "I would love to meet you.

I wanted to see what kind of crazy person he was."

The law belongs to us, regardless of ethnicity, nationality, gender or race. Fighting for justice is not madness.

Companies should also get serious about this effort.

When companies invest in human rights, it's a business capital gain. Whether it's a business, an NGO, or an individual, the rule of law is good for all of us.

By working together on the same mindset, we will create a global economy that respects human rights across people, the private and public sectors, and together we will become global investors in support of human rights.

By doing so, we can achieve fairness together.

thank you

(applause)

Today we would like to introduce “Fotokite”

It's a flying camera with a lead.

But before I do that, I want to talk about where this camera came from and what motivated it to make it.

I was born in Russia, and there were federal elections in Russia three years ago, in 2011.

Many frauds were reported and people protested, which is rare in Russia.

But no one knew the extent of the protest movement, for whatever reason, it was largely ignored by the world's media.

At that point, a group of photographers who fly flying cameras for fun -- people who usually shoot things like the Sphinx and the Pyramids -- immediately came over and flew their cameras and took some snapshots and the whole demo.

It happened completely randomly in a completely independent group, and when I saw the picture, I was shocked.

here is a picture

It's just one picture, but you can clearly see the scale of the event -- the number of people, the flags, the banners.

I can't see this and think it's no big deal.

It's just one picture, but it was the coolest thing for me.

So I thought, in the future, in journalism and other professions, flying cameras will become a common thing, and while it will take months or years to reach mass adoption, flying cameras will become a necessity for many professionals.

This is a coherent and unique perspective.

No other camera can tell the whole story on this scale.

But there are also some challenges, very basic and very important.

One is the operating technique.

In this picture, I'm flying a camera, a five-kilometer device with an SLR.

It's very heavy and has many rotating bodies and protrusions.

It's unstable to fly, and it's cumbersome for the pilot.

In fact, on the back of the pilot's shirt, it says, "Don't ask questions until you've landed," in both Russian and English, because people are curious and hit the pilot, resulting in a loss of concentration and an accident.

They're seasoned professionals, they take great care in maneuvering.

As you may have noticed, in the midst of protests, we fly over rivers, so it's safe.

But this doesn't necessarily apply to all people and situations, so we need to make it easier to navigate.

The next problem is regulation, or lack of good regulation.

For many good reasons, it's difficult to create common laws to regulate flying cameras.

we already have a camera

Everyone here has a smartphone with a camera, right?

The number of such cameras is increasing day by day.

You've been criticized for wearing Google Glass

And two weeks ago, a hobbyist drone pilot was attacked for flying a camera on a beach.

I myself have had some unexpected experiences.

Just yesterday I was accused by a man who said he was filmed without permission.

I was just checking my email here - it's an easy way to get a conversation going.

i think there is a better solution

we should get rid of the problem

We need to create responsible solutions to privacy issues, safety and accountability, and at the same time benefit us.

Here's one possible solution

It's "Fotokite"

It's a four-axle helicopter, but what's special is that it has a lead.

It's just like a dog leash, and it's very convenient.

And the nice thing about this is that you don't have a control stick to fly it.

Just turn it on and point it in the direction you want to fly

add a little twist

operate like this

and fly

(Applause) It's very simple to operate.

it's like a flying pet

I can keep myself in the same direction all the time.

Of course you can load things on top of it.

With an additional device attached to the lead

can operate it

It's as easy as pushing a button, just like you're telling your dog to fly low.

then change the position

It's also very safe

People in the front row might be nervous -- (Laughter) -- but at least the principle is that they're physically connected, so I think they'll feel safer.

Is it difficult to introduce a demonstration?

Failure is inevitable in anything

But under no circumstances will "Fotokite" run into you thanks to the lead.

In addition, Reed's presence indicates that I am in charge of this device.

you don't have to look for a pilot

I've said many times that it's easy to operate, but the better way to prove it is to bring a second aircraft and fly it.

After I can demonstrate this on stage, I'll give you five minutes to show you how to operate it.

Now we have two cameras in flight. (Applause) And here's how we summon them.

(Laughter) I want you to think that this is a good solution, it's easy and it's safe.

how would you use it?

How would you like to help your life?

thank you

(applause)

When Homer wrote the Iliad in the 8th century BC, the story of the Trojan War was already in the past.

Oral culture of the time told people about the tales of the long siege, the epic duels outside the city walls, and the cunning tricks that ultimately led to victory.

In the end, the mighty city was burned to the ground and never recovered.

But did Troy even exist?

Before archeology began to be recognized as a discipline in the 19th century, many people were skeptical about the existence of Troy, because they thought that epic poetry was pure fiction, a myth created in the imagination of heroic times past.

But some researchers believed that behind the superhuman exploits and divine miracles, there must have been a piece of historical fact - a real war and a battlefield.

Frank Calvert was one of those who believed

As a young man, he traveled and learned about ancient civilizations, before accompanying his brother Frederick on a diplomatic mission to Canakkale, northwestern Anatolia.

It is the mouth of Scamander, which Homer described as the Greek camp.

It was here that Frank had a fateful encounter with the journalist and geologist Charles McLaren.

Locals and tourists have long speculated that Troy was in the surrounding hills.

But McLaren was one of the first to publish detailed geomorphological survey reports.

He believed he had found ruins, a 32-meter hill known as Hissarik Hill, a term derived from the Turkish word for "fortress." Shortly after meeting McLaren in 1847, Calvert purchased eight square kilometers of farmland, including part of the hill.

Before they could begin further investigation, the Crimean War broke out, stifling their enthusiasm for excavation for several years.

After the war ended, Frank Calvert began exploring the ruins, but he didn't have enough money to excavate everything.

Then came Heinrich Schliemann, a wealthy German businessman and amateur archaeologist.

At Calvert's invitation, Schliemann visited the site in 1868 and decided to excavate.

In his passion to find the ancient city, Schliemann dug a huge trench all the way to the bottom of the hill.

There he found a treasury of precious artefacts, jewels and metalwork, where he found a treasure trove of precious artefacts, jewels and metalwork, including two crowns and a bronze shield.

Schliemann announced that he had found the treasure of Troy and King Priam, taking full credit for the finds.

But the real treasure was elsewhere.

Archaeologists of later times surveyed the site and found that the hill contained at least nine cities, each built on the ruins of a city.

The layers Schliemann found belonged to the Mycenaean civilization, which predates Homer's time by more than 1,000 years.

But the relics in the hills do indeed provide evidence of a flourishing city during the Bronze Age, with charred stones, broken arrowheads and mutilated human skeletons signaling a violent demise for the city.

The seventh layer of Troy, located in the middle, was proof of that, but it was destroyed a second time by Schliemann's crude excavation.

With an area of ​​about 200,000 square meters, it was home to 10,000 people at its peak and flourished until about 1180 BC.

Located at the southern entrance to the Dardanelles, it has become of great strategic importance for defense and trade.

Most importantly, it left behind a huge fortress wall—perhaps the same one that Priam and Hector saw during the Greek invasion.

Of course, we can't say with certainty that these ruins are the true remains of ancient Troy, and researchers are still debating whether Homer's description of the Trojan War actually happened.

Yet there is enough evidence for UNESCO to declare Hissarik an ancient site in Troy.

Despite its obscure identity, with persistence, a little bit of faith and a huge amount of research, archaeologists have been able to shed light on a long-hidden secret of a long-destroyed ancient city.

I have two things to tell you today.

One way is to use wireless technology to dramatically reduce the carbon footprint of the transport sector, while meeting demand through market-driven pricing.

The other is that the right wireless technology presents a tremendous opportunity, a way to create new engines that drive economic growth while also dramatically reducing the carbon footprint of other sectors.

i'm so scared

If we don't reduce our carbon footprint by 80% in 10 or 15 years, we will have catastrophic impacts.

I am astonished at the reality that I have to say that

What are destructive effects? A temperature rise of 3 degrees Celsius, which would wipe out half of all life on Earth.

this is not a movie this is reality

I'm really nervous, because when it comes to cars, as I know a little bit, the media, the politicians, everyone in this room thinks, "Let's drive fuel-efficient cars."

If we start today, over the next 10 years, fuel-efficient cars will reduce fossil fuel demand by 4 percent.

that's not enough

but there's a bright side

Here are some ways you can make a dramatic difference

Seven years ago, I founded Zipcar, a so-called car-sharing company.

This is a business that rents cars deployed in densely populated urban areas to members instead of private cars on an hourly or daily basis.

What does it mean to be a Zipcar customer?

It's about using it only when you need it, and paying for it.

And don't pay for the time you don't use

What's more, it means you can choose the car that best fits your needs.

This person used a small car MINI called Mia for a day.

You can ride a BMW when you go to a client

Surfing allows you to ride big elements

It's also the best choice from the point of view of owning a car.

In seven cities around the world, you have the freedom to use a wide range of vehicles, zero maintenance, no repairs, no tools required.

It's like the ideal car that was thought impossible.

There is nothing wrong with all the good things

So what impact did Zipcar have on society?

Zipcar currently has 100,000 members with 3,000 vehicles in 3,000 locations.

A city person drives an average of 12,000 miles a year, but a Zipcar driver does 500 miles, is that enough?

The company has more than doubled in size since its founding.

The Zipcar is accepted and loved by the public.

The reason why I was able to go from 12,000 miles to 500 miles a year is

It's priced at $8 to $10 an hour, $65 a day.

Should I pay $8 to buy ice cream or should I hold out?

I'd rather buy it while I'm doing something else.

People are price sensitive

And technology was essential to making Zipcar a reality.

We needed the convenience of making a reservation in 30 seconds, going to the parking lot, and using it.

From the service provider's point of view, if the procedure cost is too high, it cannot be provided on an hourly basis.

Without wireless technology, this concept would not be possible.

As another example, let me tell you about a company called GoLoco, which is going to launch in three weeks.

The same can be said for all of America

Seventy-five percent of the vehicles on the road are occupied alone, while 12 percent of commuters are carpools.

If we can use social networking services and online payment systems to change people's perceptions of carpooling, I think we can use cars more efficiently.

If we think about the future, we should see carpooling as a great way to interact with people.

How did you all come? with other participants?

Awesome You don't want to drive alone, do you?

what about shopping? It's more fun with your neighbors

Ride sharing greatly changes the concept of transportation and increases the degree of freedom of mobility.

Where can I go today, who can I go with?

You will be able to feel

And there's also a social upside.

Less parking demand, less congestion, less carbon footprint.

Wireless technology is essential to make this happen.

Ride-sharing is popular because today's operating costs are high.

The average American spends 19 percent of their income on cars.

The last one is the congestion charging system that was introduced in London and attracted attention.

It is a system that charges for vehicles running in congested areas.

The system reduced traffic congestion by 25 percent the day after it was introduced in London, and this effect persisted for the next four years.

How did people react to this result?

Led Livingston Mayor of London to re-election

In this way, price can play a big role in decision-making, and as a result, people tend to drive less.

The mileage has tripled since 1970 and doubled since 1982.

The transportation system has become paralyzed, but if we set the price right, we can improve it.

Congestion pricing schemes are being considered in major cities around the world, but wireless technology is needed to implement them.

We don't set up toll booths all over London and open and close gates.

Congestion pricing is a test of the technology behind road pricing and of people's psychology about it.

Eventually, we'll have to pay for the roads, because right now we're paying for road maintenance and repairs with gas taxes.

Because better gas mileage means less gas tax revenue, which is why we need to charge based on the distance traveled.

We'll try it with congestion pricing, and we're going to use the same technology with road pricing.

Why do you drive too much?

They drive too much because the cost is too low.

Should incorporate more market movements

Then you'll choose your mileage, your mode of transportation, your home, your workplace accordingly.

Wireless technology is what makes this real-time decision possible.

The second thing I'd like to talk about today is when we're going to start this congestion pricing, road pricing will be introduced in the near future.

When exactly? 10 or 15 years from now? Or maybe it will finally be introduced within two years?

Because road tolls are life-changing.

So what wireless technology should we use?

Let me share my big vision

With one tool, we can bridge the digital divide, deal with emergencies, smooth traffic, create engines for economic growth, and dramatically reduce carbon emissions in every sector.

Do you know this scene from the movie "Graduation"?

Let's say you're that fine young man and I'm that brilliant businessman.

"I want to say one thing, one thing"

"What is it?" "Listen carefully." "Yes."

"The future is the age of autonomous wireless networks in an ad-hoc peer-to-peer format."

(Laughter) You could call it a mesh network.

All the devices are networked together to extend the area.

Let me give you some examples

After this, we have a talk by Mr. Alan Kay.

And those laptops, when the kids use them, connect with all the other students in the classroom, and they connect with all the students in the school and in the village.

What is the cost of this communication system?

Zero monthly fee

In another case, in New Orleans, mesh-enabled video cameras were monitoring crime in the French Quarter.

When Hurricane Katrina hit, the only functioning communication system was a mesh network.

Volunteers added a lot of equipment on site, and for the next 12 months, the only wireless connection available in New Orleans was the mesh network.

The next example is the city of Portsmouth, England.

300 buses are mesh-connected and become a high-performance guidance device

If you talk to it or look at it, you can know the exact location of the bus you want to ride.When the bus is approaching, you can buy a ticket from the guidance device.

After all, since everything is a mesh connection, the monthly communication fee is zero

So the advantage of mesh networks is the availability of low-cost equipment.

There are zero communication costs, and it's easy to expand coverage. You can add one after another, like Katrina, and you can cut it.

Distributed systems are redundant and fault tolerant

Are there any fatal flaws?

No one is lobbying for it to happen, and no local government is trying to implement it in their communities.

I've given examples of scattered mesh networks, but networks aren't fun unless they're big.

How can we build a huge network?

Another scene from the movie "Graduation"

You're a fine young man, and I'm the sexy woman.

There was a line like this

"Where did you do it?" "In his car."

So this idea... (Laughter) Where do you think I would put a mesh network device? in every car across America

You can have a free wireless communication system covering the whole country

please think about it

Why is it possible? Because congestion pricing will be introduced, road pricing will be introduced, and gasoline taxes will be replaced by road pricing.

These things will come true

What wireless technology will you use?

Use what's best for you So when are we going to make it happen?

We shouldn't wait 10 or 15 years

Better start preparing now

We want to build an interstate wireless mesh system that uses open standards and makes it accessible to everyone.

Now the transportation sector is deploying this wireless device, your FastPass or EasyLane, which is a single-purpose device used in closed networks.

in short

For road control and road charging, the amount of data sent and received is small.

I have a lot of extra communication capacity.

So we can build wireless networks across the country at a low cost, and we can create fault-tolerant communication systems, and we'll have new tools to increase efficiency in every sector.

What would happen if the cost of sending information from anywhere to anywhere was near zero?

With that tool, you can create engines of economic growth.

Information, access to information should be free, and we should charge for carbon emissions.

I think this will be a more powerful tool than the highway network, and economically as important as electrification, it will have the power to change the world.

If I had a choice, I'd choose open standards plus open source networks.

Open source means that depending on how you do it, it's possible to make it available worldwide in a short period of time.

back a little bit

Imagine all buses in Lagos connected to a mesh network

I went to Larry Brilliant's TEDTalk Prize talk this morning, and he's working with these amazing networks, and wouldn't it be nice if there was an open-source mesh communication device that could connect to these networks and do what they're supposed to do?

This is doable, if we can make a small part of the telecommunications network free.

You can make a lot of money out of it, and that's why it has to be open source.

Let's do something about this nightmare. Let's urgently introduce a gas tax. Let's introduce a wireless mesh highway pricing system across the United States. Mesh is open source. An open standard.

Thank you. (Applause)

Suppose we happen to meet on the bus and want to get to know each other really well, but I have to get off at the next bus stop, and you try to tell me three things about yourself.

It's strange, but isn't one of those three experiences some kind of trauma?

cancer, rape, holocaust, incest

Did you notice that we try to express who we are through the scars we inflict on ourselves?

And the place where I see this experiencer identity most often is in the cancer community.

I've been involved in this community for many years because I've worked in hospices and hospitals as a chaplain for almost 30 years.

And in 2005, while working at a large cancer center, I was informed that my mother had breast cancer.

And five days later, I found out that I, too, had breast cancer.

I can compete with my mother -- (Laughter) -- but I didn't compete on this one.

In fact, I thought that if you had cancer, it would be pretty convenient to work in that facility.

But a lot of people were outraged and said,

What's that?

you will be chaplain

I should be immune

It's as if a police officer should be able to get away with a traffic ticket just by turning on the siren.

And I was treated at the cancer center where I work, which was incredibly convenient. I had chemotherapy, a mastectomy, a saline implant. First and foremost, let me say this.

And then I'd approach them, gesture them, and say, "No, come here."

Well like this

I learned a lot as a patient, and one of the things that surprised me was how much of the cancer experience is medical care.

Most of them were unaware of their own feelings and beliefs, the loss and discovery of identities, the awareness of strength and flexibility, the awareness of strength and flexibility.

It's about recognizing that the most important things in life are relationships, not anything material, about smiling in the face of uncertainty and knowing that saying "I have cancer" can get you away with almost everything.

And I've also learned that being a cancer survivor doesn't have to be your identity.

no please don't misunderstand me

Thanks to cancer organizations, the promotion of early screening, cancer awareness and research, cancer is no longer a stigma, and that's great.

Now I can talk about cancer without lowering my voice.

we can talk about cancer and support each other

But sometimes people seem a little too enthusiastic and want to tell us how we "should" feel.

About a week after I had my surgery, I invited a guest to my home.

this was probably the first mistake

And keep in mind, I've been a chaplain for over 20 years at this point, and topics like dying, death itself, and the meaning of life are things I've been talking about all my life.

At dinner that night, the guest stretched her arms above her head and said, "Look, Debra, you're trying to learn something important.

Yes, your life is about to change, and now you're just starting to think about death.

Yes, cancer gave you a warning."

I should say that these are aphorisms for people to talk about their experiences, but it's absurd that someone else should tell them how they should feel.

The only reason I didn't kill him this way was because my right arm didn't lift up.

I cursed him quite a bit, and in the usual language, I had to say, well, (Laughter), that my husband said, "She's on drugs now."

(Laughter) After the treatment, people wanted to tell me what my experience was supposed to mean.

"This should be your mission."

“Are you going to a luncheon seminar?”

"You're going to wear a pink T-shirt with a pink ribbon, a headband, earrings, bracelets, and panties."

panty no no serious story google it

(Laughter) What about this kind of enlightenment?

Only my husband sees my panties

(Laughter) He's already very aware of cancer.

Around this time I felt Oh, is this going to last the rest of my life? and

At that moment, I thought in my heart, let me share my experience.

Don't let your experience speak for you

As we all know, the way we deal with trauma, loss, and other life-changing events is to find meaning in them.

But the point here is that no one else can tell you what your experience means.

It's up to you to decide what that means

It doesn't have to be grand and compelling.

It doesn't have to be everyone starting a foundation or an organization or writing a book or making a documentary.

The meaning can be modest and cryptic.

Making one small life decision can make a big difference.

Many years ago, a patient of mine had a lovely young man who was loved by his staff, and the shock was that he had no friends.

He lived alone, went to chemo alone, had treatments and walked home alone.

I once asked him, "Hey, why aren't you bringing your friends?"

He said, "I really don't have any friends."

But he had a lot of friends on the infusion floor.

We all loved him and people were in and out of his room all the time.

So on his final day of chemotherapy, we sang songs and put a crown on his head and blew bubbles, and I asked him, "So what are you going to do now?"

he replied "make friends"

and actually did

He started volunteering, he made friends there, and he started going to church, and he made friends there, and he invited me and my husband to a house party for Christmas, and it was full of his friends.

share your experience

Don't let the experience speak for you

Indeed, he used his experience as an opportunity to discover the joy of friendship, and he began to make friends.

What about you?

How are you trying to find meaning in your terrible experiences?

Maybe it's something recent, maybe it's something you've had for a long time, maybe it's something you've had for a long time.

It's never too late to change its meaning, because meaning is alive.

I don't know if what that means today will be the same a year from now, or 10 years from now.

It's never too late to be more than just a "person who has overcome experience."

Listen to how lifeless this word sounds

"overcome"

No movement, no growth

tell your own experience

Don't let the experience speak for you, because then you'll get caught up in it, because there's no growth there.

But of course, sometimes it's not the external pressures that make us embrace our experiencer identity.

sometimes we get it

sometimes you can liquidate something

but that's a dead end

One of the first things I learned during my chaplain internship was the three C's of chaplain work: Comfort, Clarify, and, if necessary, Confront or Challenge.

We love to comfort people and help them clarify their thoughts.

Not so about encouraging us to face reality.

And one of the other things that I love about being a chaplain is seeing patients a year or years after treatment, because it's really nice to see how they've changed and how their lives have progressed and what's happened to them.

So when I was called into the lobby of the clinic by a patient I had met the year before and saw her with her two daughters, whom I knew, she came in for a follow-up a year later.

And when I went to the lobby, they were overjoyed, because all her test results came in, and she was NED, which is "disease-free survival."

I used to think that it meant "not to the point of being certain to die".

They were overjoyed, and they all sat down and started talking, which was very strange, because in less than two minutes, she started re-telling her diagnosis, her surgery, her chemotherapy, and I knew this story very well, because I used to see her every week as a chaplain.

Also, the words she used were "suffering," "agony," and "fighting."

And she ended the story by saying, "It was as painful as crucifixion."

At this point, her two daughters got up and said, "I'll get you some coffee."

I'm gone

Before you get to the bus stop, tell me three things about you.

People got off the bus before she got to second or third.

So I gave her a tissue, hugged her, and because I really cared for this woman, I said, "Get off the cross."

"What?" she said

I repeated, "Get off the cross."

To her credit, she's willing to talk about why she embraces this identity and clings to it.

she was quite distracted by it

People looked after her in the hope that she would change.

But now it's backfired

it has driven people away

I left and went for a coffee

She felt her experience equated to a crucifixion, but she didn't want to bury her crucified self.

Now, you may be thinking that I'm being a little too harsh on her, so I have to say this, I'm speaking from my own experience.

It took me many years to get there. I was laid off from the job I loved. And yet I didn't stop talking about my innocence and injustice, my betrayal and deceit, until people, like this woman, walked away from me.

I didn't want to bury my crucified self.

But we do know that any resurrection story requires that you first become dead.

In the Christian story, Christ died and spent a whole day in his grave before he was resurrected.

And for us, entering the grave means engaging with a deep inner work around our wounds, allowing ourselves to be healed.

We must bury our crucified self so that a new self, our true self, can be born.

We have to let go of the old story and allow the new story, the true story, to be told.

Talk about your experience Don't let your experience speak for you

What if there were no "overcomers," I mean, what if people didn't talk about their trauma as an identity, but just as an experience?

We may stop dwelling on our wounds and begin some wonderful self-exploration, self-discovery and growth.

This might be the starting point for defining yourself based on who you are and what you're going to be.

So being a "overcomer" may not be one of the three things you tell me.

anyway

I just want you to know that I'm very happy to be on the bus with you.

(applause)

This is Ana Hazare, the most innovative digital activist in the world today.

You can't tell just by looking

He's a 77-year-old Indian anti-corruption social justice activist.

In 2011, he launched a massive social campaign to cut into the problem of corruption in India, a problem that Indian elites like to ignore.

He used a number of tactics in this campaign that any good Gandhian would use, like the old ones.

They used hunger strikes, and Mr. Hazare realized in an empty stomach that this time in the 21st century, hunger strikes alone were not enough.

So we started mobile tactics with cell phones.

First of all, I would say to people, "So if you support my anti-corruption campaign, text me."

Approximately 80,000 people answered that

good result

Then he changed his tactics a little.

I said, "Please call me, leave only the call history and hang up."

Hang up right now, you know, it means a lot in this mobile world.

everyone is nodding

This is a common technique, when you're running late for an appointment and you want to tell them you'll be there soon, and you call them and leave only the call history.

When you want to tell your lover that you want to meet, leave a call history

It's a dating trick in some cultures, but in order to please your lover, you hang up after making a phone call (laughs).

One of the reasons is that we want to avoid the data charges associated with making phone calls and sending messages.

How many people do you think answered when Mr. Hazare asked people to log their calls?

35 million people

It was the largest organized activity in history.

it's amazing

It reflects the spectacular growth of middle-class India and the power that their mobile phones bring.

Hazare used the vast amount of mobile phone number data he obtained here to rally the power of the people, bringing thousands of people to the streets of Delhi to rise up against the day-to-day corruption in India.

that's amazing

this is when i was 12

You have a face, don't you?

I've been a social activist since then, and I've been ever since.

Weird childhood, running around, going to see the big names in the world, Nobel Prize winners, discussing Third World debt, as it was called back then, liberation from militarism.

(Laughter) Back then, in the early '90s, I had the latest technology, the fax machine.

The fax machine was my social activity tool.

At the time, it was a groundbreaking machine that could send a message to many people at once.

Let me introduce you to one of my fax tactics.

The day before the Gulf War began, the plan was to send a large number of faxes from all over the world to the hotel in Geneva where James Baker and Tarik Aziz were meeting, to flood the hotel with faxes and stop the war.

Naturally, the operation ended in failure.

There are many reasons for this. A single fax machine in Geneva was too weak to deliver a message to many people, no matter what it spewed.

So I looked for another tool.

I started an online call to action called Abahs, which now has 40 million members, and now runs a technology-driven social movement organization called Purpose.

What is the moral of this story?

So the lesson here is that cell phone technology has surpassed fax machines, right?

Is this also an example of technological determinism?

No, I think the lesson is more than that.

In the last 20 years, things have changed more fundamentally than just new technology.

I believe there has been a more radical shift in power in the world.

If you ask any social activist how they read the world, they'll say, "Look where the power is, who has it, and see how it shifts."

Everyone feels that something big is happening right now.

One day, my fellow social activist, Henry Timms, and I began to discuss how we might interpret this new world.

The question is how to build a framework that expresses the new era and utilizes it.

Because we realized that a lot of what we've been discovering in the movement is actually happening in every sector around the world.

So here's my vision: old power meets new power.

What is today's new power?

The power of multi-participation, the power of collaboration, these are the critical factors that drive change and influence outcomes.

And we see new powers everywhere

This is Beppe Grillo, a popular Italian blogger who won more than 25 percent of the vote in the recent Italian elections with minimal political organization and the internet.

This is Airbnb, which has revolutionized the hotel industry in the last couple of years, a lodging business that doesn't own a single property.

This is a Kickstarter that raised over $1 billion from over 5 million people

It's a business model we're already familiar with.

The construction of these new models is similar, but there are big differences from the old powers.

Look at this

Old power was owned like currency

A new power is like a tide

The old power is held in the hands of a few,

new power is created by mass participation

The old power is the download method, whereas the new power is the upload method.

You can see glimpses of the many characteristics of that new power everywhere, whether it's in the media, politics, education, or just about anything else.

So far, we've talked about new powers.

So what's not a new power?

that's not your facebook page

Social media is no different than radio in that it just downloads information.

Just ask Syrian dictator Assad, his Facebook has no power created by its participants.

New power is not necessarily positive.

Now, I'm not arguing to judge the new powers, but the new powers have a lot of good things, but they can also have bad consequences.

The more participants you have, the more coordination you need, which can skew the results. Sometimes, like medicine, you don't want the new powers involved at all.

Third, new powers don't always win.

In fact, of course, you'll see a lot of these new power models being pushed back by the old powers when they reach a certain scale.

Look at Edward Snowden and the Director of the National Security Agency.

One of these two is in exile abroad.

The new power doesn't always win

But we're now, but we're on a sharp turn

remember that you're on your way

What was an original idea that someone started a few years ago is now revolutionizing every industry.

What's interesting about this new power is that it's the source of its own power.

Once you've experienced a new power, you'll want to experience it more.

So if you get funding through peer-to-peer Lending Tree or Prosper, you probably don't need a bank anymore.

This experience will make you crave the power of social participation in all aspects of your life.

values ​​will change

So far, I've talked about new power business models: Airbnb and Kickstarter.

So what are those values?

It's still in its early stages, but what is the value of the new power?

Above all, we value that transparency.

There's this religious belief about transparency that when you shine a light through it, it looks better.

Remember, the 20th century wasn't

It was believed that it was better to have a gentlemen's agreement on the other side of the closed door.

A new power values ​​informal network governance.

For better or for worse, the United Nations today could not have been established.

In the new power, participating means doing it yourself.

Interestingly, the new power eschews the kind of professionalism and specialization that was touted in the 20th century.

The interesting thing about the new power value model is what it means for organizations.

So I plotted the types of organizations on a four-square table, and I plotted it, and I tried to see where people fit on the new power values ​​and the new power model.

First, an interesting point that I noticed from an American organization.

Apple is

here belongs to the old power

Because Apple's concept of thoroughgoing perfectionism in their products

Perfectionism for that very beautiful product

Don't value your own transparency

rather secretive

Apple is the world's largest company

I would say this is an example of the old power still succeeding.

It could be argued that this model also has its weaknesses.

Another interesting example is President Obama's campaign and his political policies.

(Laughter) President Obama has a new power.

he said our time has come

We collected donations from the public and ran a campaign.

But once elected, he runs a government similar to any other president.

And this is a very interesting trend, but what happens when the new power gains momentum?

Think about where your own organization might be using this framework.

And where should we be moving in the next five to ten years?

What if you're an old power?

If you think nothing should happen to the old power,

See Wikipedia's Encyclopædia Britannica entry

It's a sad state of affairs

If you're an old power, the most important thing you can do is rule yourself before others can rule you.

What if your organization's untrustworthy groups infested the center of your organization and presented you with conundrums? Every corner of the organization is seen

If they don't like it, would you change your business model?

What if you were the new power?

Is the new power just a matter of riding the momentum?

i don't think so

I see the new power as something that has to overcome big challenges in this nascent era.

Look at the Occupy Wall Street Movement

It's a very good example of new power, the purest form of new power.

but it failed

The collective energy momentarily gained momentum and fashion, but it was all about participation and nothing was done.

The challenge that this model reveals is, how do we use the power that we organize without it being taken into the system? How do we use it?

Let's take a look at the opposite example, the ride-hailing service UBER.

Here's an example of a model where new power can be deployed at scale.

UBER's network is growing day by day

But what's interesting about UBER is that it hasn't embraced the new power values ​​yet.

This is what the CEO of UBER actually said recently, "If you don't have a big brother in the driver's seat."

The rise and fall of new powers will depend on the strength of their networks.

It depends on whether the drivers and customers who use the service endorse the service.

Because it's not the top-down perfectionism that determines our destiny, it's the network itself that matters.

And the challenge here, which makes a lot of sense when you think about it, is that UBER drivers are now starting to form unions.

worth mentioning

This is how the drivers are starting to conflict with the company.

The problem with UBER is that, unfortunately, the company has trapped itself in old power through

So UBER has raised a billion dollars from the capital markets.

The market expects a return on their investment, and that return comes from squeezing out drivers and customers, and this is how UBER's investors profit.

What is the future of new power? Will the old power reappear?

Will the elite of the new power turn into the old power and squeeze the profits?

Or will a new power roll back from it?

Will the next emerging UBER company be co-owned with the drivers?

It's very interesting to see what that future operational structure will be.

And finally, understand that new power is more than just something that makes our consumer experience a little bit better, a little bit more of a base.

My call to new power is not to isolate

Every structural problem in today's world could benefit tremendously from the power of new power makers' ability to mobilize masses and create cooperation among their participants.

That power is what we desperately need right now, to solve what economists call the public goods problem, the free rider problem, the problem that goes beyond the limits of how capital markets can easily attract investors.

If we can do that, we will not only be able to fundamentally change how individuals feel about their influence -- because the best thing that new power can do for people is to make them feel more powerful -- it will also change the way we relate to each other, to institutions, to institutions.

For me, it's definitely worth the effort.

thank you

(applause)

I've been diagnosed with pathological shyness since I was a kid, and with the size of this venue, 20 people in the audience would stutter.

Does anyone say so too?

They follow us around, they follow us all the time, because when they're treated like that, they feel left out, they feel like they're being talked about.

When I started observing people -- and that's what I do all the time -- I realized that some people really crave attention and recognition.

It's a story of my youth

when it comes to their actions

What we do all the time-

talking about yourself

On the other hand, if you look at other people, some of them have what I call a correlated mindset.

We find ways to talk about "ourselves" in any situation and create "our thoughts."

To my mind, reimagining the world is seeing the world as a place where we can all come together to be opportunity makers for others.

There's never been a more demanding and more opportunityful time to be people who create opportunities by using their individual talents better together to accomplish a cause or something they couldn't do alone.

And that's what I want to talk about, because more than giving, more than giving, is the ability to do great things together and do smarter things together.

that's the topic for today

Separately, I would like to say that each of you is better than anyone else.

It would subvert the old saying, "If you feel like you're the smartest, you're in the wrong place."

(Laughter) A few years ago, I was at a party in Hollywood, where I met an up-and-coming actress, and we quickly turned to our shared hobby of public art.

She's a strong believer that every new building in Los Angeles should have public art.

They want regulation for that, and they're even more enthusiastic -- is there anyone from Chicago? They started talking about Millennium Park's mirror-surfaced, bean-shaped sculptures, and people would come up to them and smile at their reflections, pose and pose, take selfies, and laugh at each other.

I heard her talk and an idea came to me

Said, "There's someone you should meet

He's about to come out of San Quentin Prison -- (Laughter) and he's just as passionate as you are about how art should involve people and connect people."

He's been in solitary confinement for five years, and I met him when I gave a speech at San Quentin Prison.

Because I had a daily routine to train my body

(Laughter) I think she got it.

I said, "He'll be an unexpected ally."

There's another guy named James, an architect and a professor who loves Placemaking, which is the creation of plazas and urban walkways in public spaces where art is sprinkled and where people paint and congregate and talk.

I thought they would be good friends

it actually happened

they met and made plans

I also gave a speech in front of the Los Angeles City Council.

Not only did the city council pass the bill, half of the council members even took a picture with them afterwards.

They were stunningly engaging and persuasive.

money can't buy

I want you to think about what type of opportunity creators we can be, because more than wealth, great titles, and the breadth of our network, it's our ability to connect and capitalize on each other's strengths.

I'm not saying this is going to be easy, and I know many of you have tried to connect with someone the wrong way, but what I'm suggesting is that this is your chance.

I started thinking about this when I was a reporter for The Wall Street Journal, and my job in Europe was to cover trends, and trends were more than business, politics, and lifestyle.

So I needed to connect with people who were completely different from me, otherwise I wouldn't be able to keep up with trends.

Third, I had to write from the reader's point of view in order to convey how trends affect their lives.

This is what opportunity creators do

There's something strange going on. More and more Americans are working and living and playing with like-minded people, and that tends to make them rigid and extreme. Opportunity generators, on the other hand, are actively seeking out and building relationships with people who are different from them, and in doing so, they're building trusting relationships, so they can attract the right teams, the people who will solve problems better and faster, and they'll have more opportunities.

They're not afraid to be different, they're fascinated by it.

The world is now asking us to have collective thinking, and I think we can do that.

It's important in this day and age

Why now?

Because we're going to create drones, drugs, data collection, and so on, but also because more people can do it in a cheaper way that they can profit from, because, as you all know in the news, they can be used for dangerous things.

What is required of each of us is to create something of greater value.

Let me give you an extra tip. This isn't just your first chance to collaborate with others, but it's going to be the best experience for you, whether you're a group or an individual.

The mutual trust gained through that experience is what matters.

This is something that is created later, unexpected, and completely unpredictable.

For example, the husband of the actress I mentioned earlier, Marty, saw his wife's peers in action and immediately talked to that ex-con Wally about his prison exercise routine.

Marty thought, on his own racquetball field.

tell wally

Many of our employees are members of our practice range.

because they travel a lot

Even in a hotel with no equipment, we want you to be able to move your body.

So Wally was hired

Not only that, he ended up teaching racquetball.

A few years later, I was even teaching a racquetball teacher.

What I'm proposing is that when you connect with others through shared interests and activities, you'll find more and more wonderful things happening in the future.

Let's open our hearts to opportunities like this. You're the people here, you've got the technology. It's the unique role of the key players in scaling systems and projects together.

This is what I would like to ask of you

Remember 3 traits of opportunity creators

They constantly hone their best strengths and look for patterns.

By stepping into a world that's different from our own, we gain trust, help us find patterns, and communicate to connect the key points of our mutual interest.

So I'm begging you, the world needs you.

Through first-hand experience, I can confidently say that what the world wants us to do is to unite together as opportunity creators, to emulate each other's actions. I know from first-hand experience that many of us are already doing it, and to reimagine a world where we bring together the best of each of us to do more together than we can individually.

Finally, Dave Liniger said, "Don't just bring your own fork to the potluck party."

(laughs) Thank you very much.

thank you (applause)

About 12 years ago, I gave up my career as a banker because I wanted to make the world a safer place.

On my new life path, I have been involved in policy advocacy activities both domestically and internationally, and have had the privilege of meeting some of the most wonderful people in the world.

In the process, I became a civil society diplomat.

Civil society diplomats have three roles: to represent the voices of the people without being constrained by national interests, and to effect change through the networks of citizens as well as the networks owned by the state.

If we want to change the world, we need more people like me.

But many people still ask, "Can civil society really make a difference?"

“Can citizens influence and change politics at home and abroad?”

It never occurred to me to ask myself this question, but I would like to share with you a lesson I learned from two influential civil society movements that I have been involved with.

These movements address issues of gun control and drug policy, which are of particular interest to me.

These issues are important in our country

Latin America is the epicenter of both problems.

Brazil, for example -- it's a beautiful country that hosts TEDGlobal, but it holds one of the worst records in the world.

Number one in the number of violent murders

One in ten homicide victims in the world is Brazilian.

Yes, 56,000 people die each year from violence.

Many of them are young black boys who have been killed by guns.

Brazil is also one of the countries with the highest drug consumption, and the "war on drugs" is very painful.

About 50% of all street homicides in Brazil are related to the "war on drugs."

25% of prisoners are also involved

Brazil isn't the only country plagued by the twin problems of guns and drugs.

Virtually every country and city in Latin America has this problem.

Latin America has 9 percent of the world's population, but 25 percent of the world's deaths from violence.

If you turn your eyes away, it may not matter

but i couldn't do it

I first got involved in a political campaign in 2003 to change gun laws here in Brazil and create an arms buyback program.

In the space of a few years, not only was legislation enacted to tighten tighter restrictions on civilian purchases of guns, but we were also able to recover and destroy about half a million weapons.

It was one of the largest arms buyout programs in history (applause), but some were defeated.

The 2005 referendum to ban the sale of guns to the general public failed.

The next impetus for me was to redesign the international drug control regime, which started domestically but is now a global movement.

I am the coordinating officer of an organization called the International Commission on Drug Policy.

This commission is a high-level group of world leaders trying to find more humane and effective ways to deal with the drug problem.

Since we took action in 2008, drug taboos have been broken.

Change is happening across the Americas, from the United States and Mexico to Colombia and Uruguay.

Instead of elaborating on these two movements, I'm going to share four insights that I've gained.

This is what I call a lesson to change the world.

Of course, there are many other things, but I think these four are the most important.

The first lesson is to change your tone and control the conversation.

This may seem obvious, but it's a civil society diplomatic tool that needs first and foremost the ability to change the narrative and control the conversation.

This is something that veteran politicians seem to understand, but members of civil society usually do it poorly.

In the case of drug policy, the most successful part of our work is moving away from the argument against "war on drugs" to one that prioritizes people's health and safety.

And according to our latest report, which we just released in New York, it's also criminal syndicates and drug cartels that profit from the $400 billion drug market.

To undermine the power and profit of these groups, we have to change the content of the debate.

We need to change drugs from illegal to legal.

Before I startle you, I don't mean that everyone should be able to get drugs for free.

What I'm going to tell you, and what the International Committee on Drug Policy is advocating, is to create a highly regulated market, where different drugs are regulated differently.

We've succeeded in transforming gun control, but we haven't been successful in changing the way we talk about it.

What I've learned here is the second lesson: never take those who disagree with you lightly.

If you want to succeed in changing the world, you need to know who your opponents are.

It means that we should study their motives and their way of thinking.

In the case of gun control, we were very disrespectful to our opponents.

We were elated when the gun buyback program was so successful.

They believed that the fact that they had 80% of Brazilian support would support a referendum on a bill to ban the sale of guns to the general public.

but this was completely wrong

Over the course of 20 days of public debate on television, the opposition has taken advantage of our reasoning.

eventually lost the popularity vote

It ended badly

The NRA, the National Rifle Association, came to Brazil.

What they did during our campaign, you know, was fill it with propaganda that linked the right to own a gun to freedom and democracy.

they attacked us in every possible way

We used the Brazilian flag and the national anthem of independence.

It appealed to women's rights and abused the image of Mandela, Tiananmen Square and even Hitler.

I won by terrorizing people.

In fact, their campaign almost completely ignored guns.

focused on individual rights

But I want to ask you, which right is more important? The right to live and the right to have guns that take lives.

(Applause) We thought people would vote to save lives, but until recently, in a country that was ruled by a military dictatorship, we weren't prepared to deal with the echo of anti-government messages from opponents of regulation.

That's how I learned my lesson

We're doing much better when it comes to drug policy.

If you asked people 10 years ago if there would ever be an end to the "war on drugs," they would have laughed.

After all, there are huge numbers of military police prisons and a solid stream of income from this war.

But today, the international drug control regime is beginning to crumble.

Governments and civil society are trying new ways.

The International Commission on Drug Policy knows its opponents well, and rather than fight it, its chairman, former Brazilian president Fernando Enrique Cardoso, has reached out to politicians ranging from liberals to conservatives.

A high-level group agreed to openly discuss the strengths and weaknesses of drug policy.

This led to a deliberate and informed strategic debate that revealed the sad truth of the war on drugs.

The "war on drugs" was failing in every sense of the word.

Drugs have become cheaper and more widely available than ever before, and their consumption has increased worldwide.

Worse, it also had unintended, large-scale negative consequences.

And while it's true that such arguments have been made before, we foresaw the arguments of the opposition and, in turn, used the powerful voices of those who a few years ago would have resisted change to effect change.

Lesson Three: Use Data to Drive Discussions

Guns and drugs are an emotional issue, and as I painfully learned in Brazil's gun control referendum, pushing aside the emotional side to get to the truth can lead to failure.

But that doesn't mean you shouldn't try.

Until recently, we didn't know how many Brazilians were killed by guns.

Amazingly, the local melodrama "Mulheres Apaixonadas," or "Women in Love," kicked off Brazil's national gun control campaign.

In one highly rated episode, the lead actress of a soap opera was killed by a stray bullet.

And Brazilian grandmothers and housewives were outraged, and in this example of life imitating art, they used film footage of a gun control march we had right here on Copacabana Beach.

The televised death and march scenes had a significant impact on public opinion.

In just a few weeks, Congress passed the Demilitarization Act, which had been on hold for years.

So we were able to show the numbers, and finally change the law and have a gun recall program.

What I want to tell you is that in just one year, we were able to save more than 5,000 lives.

(Applause) In the case of drugs, in order to alleviate similar fears and de-stigmatize the issues around us, we managed to gather data that drug policies caused more harm than drug use itself, and when we showed this, people began to understand.

The fourth lesson I learned is that you shouldn't be afraid to work with strange people.

This is something I learned in Brazil, and it's not just for our country, it's important to work with people who think differently and who are eclectic.

If you want to change the world, have people on your side who reflect the positive side of society.

In both cases, guns and drugs, we've been able to bring together an incredible diversity of people.

The work of the elite has generated immeasurable support from the media.

Victims, human rights winners, cultural luminaries joined hands

Experts such as doctors, lawyers, and scholars also gathered

What I've learned over the last few years is the need for those who want change and those who don't want to come together.

In the case of drugs, we needed liberal, anti-drug, pro-legalization, and liberal politicians.

They don't agree with everything, in fact they disagree with almost everything.

But the legitimacy of a campaign can be based on multiple perspectives.

About 10 years ago, I used to work in an investment bank, and I thought my future was in good hands.

It was, as you might imagine, a far cry from being a civil society diplomat.

but i seize the opportunity

We changed course, and in the process, we were able to create a social movement that claims to have made parts of the world safer.

everyone has the power to change the world

Whatever the problem, no matter how hard the battle for change is, civil society is at the center of the blueprint for change.

thank you very much

(applause)

After much thought, the first word was "Colombia."

I don't know how many of you have been there, but Colombia is just north of Brazil and shares a border with it.

It's a beautiful country, the people are wonderful, myself included (laughs), and the flora and fauna are very diverse.

It has all the elements of a perfect place with a waterfront.

just a few problems

you've all heard

This country has the oldest guerrilla organization in the world.

It has a history of more than 50 years, so in my life, I have never experienced peace in this country.

Among the guerrillas, the FARC, or the Revolutionary Armed Forces of Colombia, are the main ones, and they get their fighting money out of kidnapping and extortion -- drug trafficking and illegal mining.

Terrorism and indiscriminate bombing continue even now.

this is really bad

Over 5.7 million people were displaced in human casualties during 50 years of fighting.

This is one of the largest refugee populations in the world, and more than 220,000 people have died in this conflict.

It's like Bolivar's war of independence again.

A lot of people are dying for no reason

We're in the midst of peace talks right now, and we're trying to reach out to find a peaceful solution to this problem.

When I say this, you're probably wondering what I'm starting to say.

I'm going to tell you about the installation of giant illuminated trees at nine strategic points of transportation in the jungle.

This tree led to the disarmament of 331 guerrilla fighters, about 5% of the force at the time.

At night they lit up the tree and put up a sign next to it saying, "If Christmas comes to the jungle, you can go home.

let's disarm

Anything is possible at Christmas.”

How did we know the effect of this tree?

I'm glad we were able to disarm 331 people, but many of the guerrillas didn't see Tree, but I know many people had heard of Tree, because they were constantly hearing stories from the surrendered guerrillas.

So let's go back to four years before the tree.

Four years before we put up the tree, the government contacted us and wanted us to help develop a communications strategy to get as many guerrilla fighters out of the jungle as possible.

The government had a military strategy, a legal strategy, a political strategy, but they said, "We don't have a communication strategy, but we may need one in the future."

But we still didn't quite understand

Even in Colombia, if you live in an urban area, you're so far away from where the actual fighting is happening that you can't really understand what's going on.

It wasn't until we spoke with about 60 former guerrillas that we felt we really understood the problem.

They talked to me about why they joined the guerrillas, why they left, their dreams, their frustrations.

Their stories moved us so much that we were so surprised that we began to think that maybe the best way to talk to the guerrillas is to have them talk to their peers about themselves. So in the first year, we recorded about 100 stories and played them on radio and television so that the guerrillas in the jungle could hear their own stories and stories that were very similar to them.

Let's introduce one of the stories

This person is Joanni Andres

He was 25 when this photo was taken.

I've been a guerrilla for seven years and just recently disarmed.

He told me this story, he enlisted when he was 17, and a short time later, a beautiful woman was assigned to his unit, and they fell in love.

They were talking about what kind of family they would have, what they would name their children, how they would live once they got out of the guerilla.

But lower-ranked guerrillas were strictly forbidden from romantic relationships, and when the affair was revealed, the two were separated.

He was posted far away and the woman was left behind.

She was so familiar with the area that when she stood at the sentry one night, she left her unit, surrendered to the army, and disarmed her.

She mustered up the courage to leave, and I should too."

and he left

For two days he walked day and night, risking his life to escape. His only hope was to see her.

All I could think about was meeting her.

and the two met again

I'm sure you were wondering if we really met

I was able to meet you properly

She enlisted when she was 15, left when she was 17, and despite many things, they eventually met again.

I don't know if we're still together, but we can find out.

The problem, on the other hand, was that it was only effective against low-ranking guerrillas.

This strategy was hard to find replacements for - it didn't work for commanders, because recruits could easily be recruited, but older commanders couldn't be recruited.

But we decided to do the same

Now the commander speaks to the commander.

We even asked former guerrilla commanders to ask their former comrades-in-arms to speak from a helicopter into a microphone, saying things like, "There's a good life here," or "I'm fine," or "I'm not worth continuing."

But if you think about it, it's easy to counter this, and you can say,

"If you don't do that, you'll be killed."

The guerrillas were spreading rumors that if they didn't cooperate with the operation, they would be in danger.

Then one of the brightest people on our team came back and said, "I just realized

Since the beginning of this war, there has been a surge in disarming guerrillas around Christmas time."

This was a really cool discovery, because it made me think that we should talk to them more like people than soldiers.

We should have abandoned the attitude of the government speaking to the military, or the military speaking to the military, and instead talked about universal values ​​and humanity.

This is where the idea for the Christmas tree came from.

In the picture you see, I'm planning a Christmas tree, and the one with the three-star rank badge is Captain Juan Manuel Valdes.

Captain Valdez was the first high-ranking military official to provide helicopters and help needed to put up the Christmas tree.

"By being tolerant, both I and my subordinates can become stronger, which is why I want to do this."

Remembering the Captain brings tears to my eyes, because he was later killed in action.

The captain did whatever he could to help get the first tree up.

And then the guerrillas who surrendered during the operation, including the Christmas tree, said, "That tree is really nice, really nice, but we're not walking anymore.

I'm using the river

We learned that the river was the main artery of the jungle, and recruits were mostly recruited in villages scattered along the river.

So we went out to the riverside villages and talked to people, some of whom I think knew first hand about the guerrillas.

And I asked them, "Can you send a message to the guerrillas?"

We had collected over 6,000 messages.

Among them were notes urging surrender and

There were also toys and candies

Some people took off their jewelry, little crosses and amulets, and donated them, put them in floating balls, and threw them down the river for the guerrillas to pick up at night.

We threw thousands of balls into the river, and later recovered the ones that weren't picked up.

just many were picked up

On average, this activity disarmed one person every six hours, which was amazing, because they said, "Let's go home for Christmas."

And then the peace talks started, and when the talks started, the guerrillas changed their minds.

They came to think, "If the peace talks have begun, the fighting will eventually end.

I will surrender myself.”

Their fear completely changed from the fear that they might die.

"After I surrendered

It changed to fear of being rejected.

So last Christmas, we tracked down 27 guerrilla mothers and asked them to send us pictures of their childhood. We asked them to choose pictures that only they could see so that their lives would not be in danger.

I've brought some pictures, so please take a look

(Applause) Thank you.

I put up pictures like this in different places, and a lot of the guerrillas came back, and it was really cool.

Then we decided to work with society.

At Christmas time, I worked with mothers,

this time with other people

As you know, this year the World Cup was held, and Colombia did a great job, and in that moment, the whole country came together.

So we said to the guerrillas, "Come out of the jungle, I've got your seat."

This is television, but we used all the media to say, "Your seat is ready."

In this commercial, a soldier says, "I've got a seat for you in this helicopter. Get out of the jungle and enjoy the World Cup."

Former soccer players, radio announcers, everyone has reserved seats for the guerrillas.

Since we started these operations over eight years ago, 17,000 guerrillas have disarmed.

I- (Applause) Thank you.

I don't mean to say that disarmament happened because of our actions alone, but what we've done has probably inspired many guerrillas to think about disarmament, and helped them make their final decision.

If that's the case, advertising remains one of the most powerful tools for influencing change.

And I'm not just speaking for myself. I'm speaking for all of my colleagues in advertising here, and the team that's worked with me. If you want to change the world, if you want peace, call us.

always ready to help

thank you

(applause)

It's a great honor to work in a country that has a "hot spot" (an area of ​​biodiversity crisis): the Mascarene Islands in the Indian Ocean.

These islands - Mauritius, Rodrigues, Reunion and Madagascar - are blessed with some of the most unusual plants in the world.

Today, I'm going to explain the unique characteristics of five of those plants and why they're so rare.

see this plant

It means 'benzoin tree' in the local language Scientific name is Terminalia stork subspecies Ansorch stork Scientific name is Terminalia stork subsp.

It's endemic to Mauritius, and it's characteristically heteromorphous, and it's characteristically heteromorphic.

What is heteromorphous?

A single plant has leaves of different shapes and sizes.

This plant is far from the continent This plant has evolved in a specific ecosystem far from the continent

In many cases, these unique traits are the result of evolution in response to local faunal threats, in this case leaf-eating turtles.

Turtles are known to have poor eyesight and tend to avoid plants they can't identify.

And that's how we evolve the shape of the leaf to protect ourselves from these rather cute animals, and if we protect ourselves, we can survive.

You're probably thinking, "Why am I telling this story?"

because we tend to overlook the diversity of the natural world.

These particular habitats are unique and have many plants.

We are unaware of the value and importance of these resources, we are indifferently destroying habitats, we are destroying habitats.

We are well versed in climate change and resource development, but when it comes to endangered animals and plants, it is only when the last animal or plant disappears from the earth that we realize that we have lost an entire plant or animal on earth. Even the field is lost forever

A classic example is the iconic dodo from Mauritius, which of course is now known as a symbol of extinction.

plants play a fundamental role

First, it's our food, which gives us the oxygen we breathe, and it also contains important biologically active ingredients, which we've been studying very, very carefully, because over the millennia, human societies have developed their use of important knowledge, cultural traditions, and important plant-based medicinal ingredients.

Look at the data: 1.4% of the Earth's surface is home to 40% of higher plant species, 35% of vertebrate species, and 1.4% of this land represents 25 biodiversity hotspots in the world.

As you can see, the island of Mauritius, where I work and live, is one of the biodiversity hotspots, and I study the unusual plants that grow on the island for biomedical applications.

Let's go back to the plants we showed you at the beginning. Let's go back to the plants we showed you at the beginning.

Local people used the leaves as a decoction to ward off infectious diseases.

Our study is an attempt to scientifically test traditional information, showing that extracts from the very leaves can provide medicinal benefits against a wide range of bacteria that are pathogens to humans.

Could this plant be the solution to antibiotic resistance?

As you know, antibiotic resistance is a global challenge.

I don't know if it will be a new medicine or not, but one thing is for sure, we don't want this plant to go extinct.

But the reality is grim, and this particular plant is actually considered vulnerable in its natural habitat.

I'll give you another example

This shrub means "flat island lemon balm" in the local language.

The scientific name is Cydia argita

It's a rare plant, endemic to Mauritius.

It used to grow wild on the mainland, but was pushed away from the mainland by urbanization.

I should point out that not all plants can be cultured.

For these plants to feel happy in their comfort zone, these plants also need their ecosystems to be protected. This species cannot adapt -- this endemic species cannot adapt to rapid changes in ecosystems, and we know that climate change, for example, is affecting these plants and causing them difficulties.

Local people still use leaves as a traditional medicine Local people still use leaves as a traditional medicine for respiratory ailments.

And what we found in our early experiments with leaf extracts is that exactly the ingredients in these leaves are chemically very similar to the ingredients in over-the-counter asthma medications.

What will mankind benefit when all the secrets of this plant are revealed?

Now, I come from a developing country, and I've been grappling with the problem of population explosion for a long time.

Africa has a growing younger generation, and whenever we talk about population explosion, we also talk about food security, because it's two sides of the same coin.

This baobab plant could be the answer.

This is a potential food plant, but it's been neglected and neglected.

Known as the "tree of life," the baobab is woven into the landscape of West Africa. I'll explain later why Africans see it as the "tree of life."

Interestingly, the baobabs have many legends.

Because of its size, the baobab was seen as dominating a smaller plant, and the gods, who disliked this arrogance, uprooted the baobab and planted it upside down, giving it a peculiar shape.

Now let's look at this tree from the perspective of continental Africa and West Africa, where it's called the "talking tree" because of its social role.

When a problem arises in the village, a meeting is held under the Talking Tree, attended by the village chief and the tribesmen. Meeting at the Talking Tree means seeking solutions to a particular problem. The villagers trust and respect the outcome of the consultation.

From a scientific point of view, there are eight species of baobabs in the world.

There's one in Africa, one in Australia, and six endemic species on the island of Madagascar.

What I showed you is from Africa, the African baobabs.

Now, this beautiful little white flower blooms at night, is pollinated by bats, and the fruit that grows from it has the funny name "monkey apple."

monkeys are smart animals

I know what's good for me

When you open a baobab fruit, you'll find a white powdery pulp that's very nutritious and has more protein than human milk, which has more protein than human milk.

You're not mistaken. It has more protein than human breast milk.

That's why nutrition companies around the world want this fruit as a dietary supplement, they want this fruit.

The seeds make such a good oil that cosmetic companies use them, for example, to make body lotions.

If you look at the trunk, the trunk holds water and is drunk by thirsty travelers, and the leaves are used in traditional medicines to ward off infectious diseases.

Now you know why Africans see it as the "tree of life."

It's a plant that has it all. In fact, within its size lies tremendous potential, not just in the pharmaceutical, nutritional, and cosmetic industries.

What I showed you here is the African baobab, the only species found in Africa.

There are six species in Madagascar, but we don't really know the potential of this plant, but we do know that this flora is endangered.

Back in Africa, I'd like to introduce you to my favorite plant, Temari Katahiva.

As you can see, he's a competitor of Christ.

(Laughter) Now, this plant is drought-tolerant. Now, this plant is drought-tolerant. It can withstand up to 98 percent dehydration year-round without damage. It can withstand up to 98 percent dehydration without damage.

We humans are always looking for the elixir of youth

hate old age

if i can buy it i will buy it

This plant looks rejuvenated This plant looks rejuvenated

If you're a beginner gardener, you might go out into the garden, and if you're a beginner gardener, you might go out into the garden and pull out the Temarikata Hiba thinking it's dead.

But if you give it water, it will revive like this

It's really strange

If you look at the aging process in humans, it's really about the loss of moisture in the outer layer of the skin, which results in wrinkles, and wrinkles are especially worrisome to women.

Temari katahiba actually contains a very important ingredient for cosmetic chemists who are looking for ways to actually slow down the aging process, as well as strengthen the cells against the attack of environmental toxins.

Please keep in mind these four cases that I have just described, how inextricably linked to our health and survival is the health and resilience of ecosystems, and -- why should we protect biodiversity?

Every time a forest is cut down, every time a wetland is filled in, a potential laboratory is lost, never to be replaced.

I told you about the extinction of the dodo in Mauritius.

Finally, we conclude with another example

When we talk about conservation issues, we usually talk about rare and endemic plants, but we also have to think about exotic plants that grow in many different habitats around the world.

Could I ask the reason? Because the environment plays a very important role in modifying the composition of the plant.

Now let's take a look at this plant, Centella asiatica, a kind of weed.

i call it weed

Centella asiatica is found in many different habitats around the world, in Africa and Asia.

Centella asiatica grows all over the world -- in Africa and Asia -- but the best centella grows in Madagascar, because this centella is sought by pharmaceutical and cosmetic companies because it contains three key ingredients that are sought after by pharmaceutical and cosmetic companies.

Cosmetic companies use Centella asiatica as an ingredient in regeneration creams

An old proverb says, "For every disease there is a plant that can cure it."

you don't believe the old proverb

You might think it's outdated, because right now, science and technology are the way to go.

Centella asiatica may be thought to be a useless, plain weed that will never be looked back when it is gone.

That's not what weed is

it's a plant

In the natural laboratory of living organisms, we may find answers to our questions. We may find answers to our questions.

thank you

(applause)

If design has any power, it's the power of synthesis, the power of synthesis.

The more complex the problem, the more simplicity is needed.

I'd like to share with you three cases where I've tried to harness the unifying power of design.

Let's start with the global challenges of urbanization.

The fact is, people are moving to cities.

Even if it feels intuitively the opposite, it's actually a good thing.

Cities are better places to live, the evidence tells us

But there's also a problem, what I call the three S threats: Scale, Speed ​​and Scarcity.

Imagine today, of the 3 billion people living in urban areas, 1 billion are poor.

By 2030, 2 billion of the 5 billion people living in urban areas will be poor.

So this -- what this means is that we have to create a million-person city at a rate of one a week, and at $10,000 per household, week after week, for 15 years.

We have to keep building a city of 1 million people at a rate of 10,000 dollars per household at a rate of one per week.

If we don't solve this problem, people won't come to urban areas,

They'll come no matter what, but they'll end up living in the slums, the shanty towns, the shacks.

So what do we do? The answer may lie in the ghettos and slums.

The hint is that it may be in this formula that I met 10 years ago.

Ten years ago, we were asked to house 100 families who were squattering 5,000 square meters of land in the center of Iquique, northern Chile. We had to use a $10,000 grant to buy land, build infrastructure, and build houses.

And by the way, the cost of the land, because it was in the center of the city, was three times as much as the land on which public housing is normally built.

The problem was so difficult that I decided to enlist the family members of the affected people to help me understand what was making the problem difficult.

Tests have begun, a single-family home can accommodate 30 families.

Row houses can accommodate 60 families.

The only way to accommodate all 100 families would be to build a tall building, but the parties threatened to go on a hunger strike.

It's important to note that the conclusion that was reached was not the one that we decided on, but it's clear that the families of those involved have a problem.

in need of innovation

then what did we do

If you're a middle-class family, you're doing a pretty good job. They're about 80 square meters.

We said, if instead of thinking of 40 square meters as a small house, think of it this way, it's half a good house.

If you look at the problem as building the good half of the house, not the small one, the question becomes, which half do you subsidize?

I thought we should use public money to solve the other half that we can't control.

I identified five design criteria. It's the half of the difficulty when building a house. I went to my family and told them I had two requests: to work together and to divide the work.

Our designs fall somewhere between a building and a house.

As a building, it's expensive and in a good location, but as a house, it can be expanded.

So long as they weren't pushed to the margins while they were building the house, they could maintain their networks and their jobs, so I knew they were going to start expanding soon.

And so, in a matter of two or three weeks, we were able to transform the original public housing into middle-class housing by ourselves.

This was our first project ten years ago in Iquique.

And here's a video of our latest project in Chile.

The designs are different, but the idea is the same. First, I'll give you a frame, and then the family will build themselves.

So the purpose of design is to understand and provide answers to the threat of the three S's: scale, speed, lack of means, and translate this into the capacity of people to build their own homes.

Unless you harness the power of building your own homes, you won't be able to solve the formula for a million people a week.

With the right design, slums and shanty towns may not be a problem, but rather the only possible solution.

The second case is about design that contributes to sustainability.

In 2012 we entered a competition to build the Angelini Innovation Center, with the goal of creating the right environment for knowledge creation.

The aim is to create knowledge, and it's been said that interaction between people, face-to-face contact, is important, and we agreed with that.

But what is the right environment? For us, it was a literal question.

We wanted a workspace with the right light, the right temperature, the right air.

So when we thought about that, we asked ourselves, are so-called office buildings any reference?

What does an office building look like?

It's a collection of floors, one on top of the other, with a core in the middle -- elevators, stairs, pipes, wires, etc. -- and the surface is covered with glass, which is exposed to direct sunlight, creating a large greenhouse effect indoors.

That's not all. Let's say you work on the seventh floor. You walk through the third floor to work every day, and you have no idea what the people on the third floor are doing.

So I thought, I should reverse this structure.

So what we did was create an open space atrium, where the core is hollow, it's the same set of floors, but with walls and masses around it, so that when the sun hits the walls, it doesn't hit the glass directly, but the walls.

By having an open atrium inside, you can see what other people are doing from inside the building. It's easy to control the light, and if you have masses and walls around it, you can avoid direct sunlight.

The windows can be opened and the ventilation is good.

These hollowed-out spaces are large, hollow, tall rectangles, and these outdoor spaces span the full height of the building.

These tricks are by no means difficult

No complicated programming required

So it's not a technology issue.

It's a very primitive common sense that has been around for a long time, and using that common sense, we've managed to reduce the typical energy consumption required to cool a glass tower from 120 kilowatts per square meter per year to 40 kilowatts per square meter per year.

So, with the right design, sustainability is all about making the most of what everyone already knows.

And in our final case study, let's see how design can provide the overarching answer to addressing natural disasters.

As you know, in 2010, Chile was hit by a magnitude 8.8 earthquake and tsunami, and we were called to restore an area in southern Chile called the Constitucion.

We were given 100 days, three months, to design everything, from public buildings to public spaces, road networks, transportation, housing and, most importantly, how to protect this city and what to do in the event of a tsunami in the future.

It was a new attempt at urban design in Chile, and we had some ideas.

First, don't build anything at the epicenter.

The $30 million budget was mainly used for land expropriation.

And that's what's being discussed in Japan right now. In a country like Japan, where people are well-disciplined, it works well, but in Chile, it's hard to completely prevent illegal land occupation.

The second is the idea of ​​building a big wall, a massive infrastructure that acts as a breakwater.

Luckily, the project was backed by big construction companies because it was a $42 million project, and it was politically favorable because it didn't require expropriation.

But as you can see in Japan, it's pointless to resist the forces of nature.

This idea was irresponsible

When we were building a house, we realized that we needed to involve the community in finding solutions, and we started designing a participatory process.

(speaker sound) "What kind of city do you want?

Vote for Constitucion

Go to public events and speak your mind

Let's all participate! ”

(Fisherman) “I am a fisherman.

has 25 employees

where should we take them? Is it a forest? ”

"Why can't a concrete barrier be used?

It should be solid."

"I have lived in the Constitucion for a long time.

You go out of your way to say you can't live here anymore-

Have you come all the way here? My whole family lives here - my children grew up here, my grandchildren will grow up here.

Not only my grandchildren, but all other family members as well.

But why do you have to say such things?

you there! you told me

Building in hazardous areas is not permitted

He said it himself, didn't he?"

"No, that's not true, Nieves..."

Did you read all the subtitles? At least you can tell from their body language that the participatory design isn't a hippie romantic, "Together, let's make our city's future a reality!" kind of thing.

Or rather -- (Applause) The challenge is not so much to work with family members to find the answer, but rather --

The main challenge was figuring out what the right questions to ask were.

There's nothing worse than answering the wrong question well

After this step, it was clear to me that I was either going to get intimidated and walk away saying the debate was too tense, or I would go further and ask more questions about what really bothered me.

What other worries do you have? What do you want us to do about this city?

And what I got back from them was that they would appreciate it if they could protect the city against future tsunamis.

But the problem is that every year it keeps raining and then floods.

And because this area is in the middle of the country's woodlands, the public spaces are the worst.

poor and not enough

And what's more, the origins and identity of this city have nothing to do with the collapsed buildings.

So we decided to come up with a third idea, and the approach we took was against geographic threats with geographic answers.

What if there was a forest between the city and the sea? This forest would not fight against the natural energy, but would disperse it through friction.

A large amount of water concentrates and has a high specific gravity Distribute it thinly to prevent flooding

This will create a public space that has never existed before, and finally democratic access to the river.

As a result of participatory design, the idea was politically and socially supported, but now we were faced with the problem of cost, a cost of 48 million dollars.

So we did some research, and what we found was that there were three ministries in the public investment system, and each of those ministries was planning different projects in the exact same place, without knowing each other's projects.

The project budget totaled $52 million.

So I tried to use the power of synthesis in design to make the most efficient use of the city's scarcest resource, and the scarcest resource isn't money.

It's coordination. I saved four million dollars by coordinating well, and this forest is now being built.

(Applause) So every force, whether it's self-construction, common sense, or the forces of nature, must be translated into form, and what that form is trying to create is not cement or brick or wood.

it's life itself

The power of synthesis in design is nothing more than an attempt to apply the power of life to the innermost core of architecture.

thank you for listening

(applause)

(Dre Ulhaan) This venue is located on Copacabana, the most famous beach in the world, while 25 kilometers from here in the northern part of Rio de Janeiro is the shanty town of Vila Cruzeiro, where about 60,000 people live.

Residents of Rio learn about Vila Cruzeiro mainly through the news, but unfortunately the news from there is often not good.

But it's at Villa Cruzeiro that our story begins.

(Jeron Koolhaas) We first came to Rio 10 years ago to document life in the favelas.

That's how I found out that favela is a city of squatters.

Rural people came to the city looking for work, and it took years to build a city within a city, known for its crime and poverty and its bloody war on drugs between the police and drug cartels.

We felt that this city was like a giant construction site built by the people who lived in it without a master plan, by themselves without a master plan.

In our native Netherlands, everything is planned.

There are rules even for how to follow the rules

(Laughter) (Urhaan) On the last day of shooting, we arrived at Vila Cruzeiro, and we sat down and had a drink, looking out at this hill of houses.

So we envisioned one large-scale design, one large-scale work of art.

Who would think such a thing in a place like this?

Is that possible in the first place?

So I started counting the houses, but it quickly got lost.

But for some reason this idea just stuck in my head.

(Koolhaas) We had a friend

He ran an NGO in Villa Cruzeiro.

My name is Nanko, and he liked the idea, too.

"People here — they'd be so happy to finish the exterior walls and paint them.

Then the house will finally be complete.”

And he introduced us to the right people, and Vitor and Maury became our staff.

So we picked three houses in the center of town, and that's where we started.

And then I started to color it.

The inhabitants hated it and said,

"What have you done?

To paint our house the same color as the police station."

(Laughter) Not suitable for a favela.

And the prison cells are the same color

So we went straight to work and drew a little boy. We thought it was done, and we were happy, but it still wasn't, and the kids came up and said, "I can see the kid flying the kite, but where's the kite?"

we replied

"This is art. Imagine a kite."

(Laughter) And yet the kids say, "No, I want to see the kites."

So we put the kites high up on the hill so we could see the boy flying the kites and the kites.

A local newspaper wrote an article, which is amazing, even in the Guardian, "Infamous Slums Turn to Blue Sky Gallery."

Koolhaas: We were so encouraged by this success that we came back to Rio for our next project, and by chance we found a street.

It was covered with landslide-resistant concrete, and it kind of looked like a river, so we turned this street into a Japanese-style river with koi carps climbing up.

So I decided to draw a river like that, so I approached Rob Admiral, who is a tattoo artist who specializes in Japanese style tattoos.

I had no idea that it would take nearly a year to paint that river, and I worked with my neighbors Giovanni, Robinho, and Vitor.

And then we moved here, and a man named Elias, who lives down this street, invited me to come live with his family, and it was an amazing experience.

Unfortunately, it was around this time that the police and drug gangs began to fight again.

(Video) (Sound of gunfire) What we learned during this time is that it's during these difficult times that people in the community help each other. And I also learned something very important: the importance of barbecues.

Koolhaas: But the plan for the hill was still in my head.

Urhan: Yeah, we were talking about the scale of this project.

But we wondered if this process, the time spent in the community, was actually much more important than the painting itself.

Koolhaas: After that, the plan for the hill was always in my mind, so I started making sketches and models and came to a certain conclusion.

We thought that if we could make the idea and design a little bit simpler than our last project, we could get more people involved and cover more homes at the same time.

We had the opportunity to try it out, in a neighborhood called Santa Marta, in the center of Rio. We did this design for this place, and we asked people to help us.

(Applause) This image somehow went viral all over the world.

JS: And then, out of nowhere, I got a call from an unexpected source. It was from the Philadelphia Mural Arts Program, and they wanted to ask me if our ideas and methods would work in North Philadelphia, one of the poorest neighborhoods in America.

we immediately answered yes

I hadn't decided how to do it, but I thought it would be really interesting, so the first thing I did was move to the area and start doing barbecues, exactly like I did in Rio.

(Laughter) This project took about two years to complete, and we designed every single house on the painted street, working with local shopkeepers, building owners, and a dozen young people.

We hired them and trained them to paint, and together we turned our entire neighborhood into a giant patchwork of colors.

(Applause) In the end, the city of Philadelphia thanked each of them and gave them credit for their work.

(Koolhaas) We painted the whole city

What about the whole hill?

I started looking for sources of funding, but I ran into a lot of problems, like how many houses should I paint?

What area will it be?

How much paint will you need? How many people should I hire?

We actually spent years writing financial plans and trying to answer all the questions, but on the other hand, to answer all the questions, you have to know exactly what you're going to do before you start working on the ground.

But maybe that way of thinking is wrong.

The magic we've learned, that if we go somewhere and stay there, the plans will naturally expand and come to life, the magic will disappear.

UR: So we decided to take all the numbers, all the ideas, all the assumptions out of this plan and go back to the original idea: turn this hill into a giant piece of art.

And instead of looking for sponsors, we launched a crowdfunding campaign, and in just over a month, more than 1,500 people helped us donate more than $100,000.

This was a great moment for us, because -- (Applause) -- because we're finally taking what we've learned here and being able to do projects in the same way that favelas are done, which means you don't have a big plan, you build it from the bottom up.

Koolhaas: We went back and hired Angelo, he's an artist from Vila Cruzeiro, he's versatile and well-rounded.

I decided where to start with them.

This is a piece of the Villa Cruzeiro that we have chosen and plastered.

The good thing about them is that they're deciding which house to make next.

We even make T-shirts, put up banners with explanations so that everyone can understand everything, and answer media inquiries.

There was also an article about Angelo

AH: On the other hand, we're spreading this idea around the world.

As with the project in Philadelphia, we've been invited to do workshops in places like Curacao, and we're planning a large-scale project in Haiti.

KH: The favela wasn't just the source of this idea. It was also a place where you could create your work without a grand plan, because it's a squatter area, so this was a revelation.

(Urhaan) So we would like to thank everyone who has been part of this dream and has supported us throughout, and we will continue to do so.

Koolhaas: Yes, so in the near future, when colors start to paint the walls, I want more people to join us in this grand dream, and one day the whole of Villa Cruzeiro will be beautifully painted.

(Urhan) Thank you

(applause)

I hope you can understand my English

It starts badly, but then it gets worse

(Laughter) Over the years, speeches often start by saying, "Cities are solutions, not problems."

What I'm starting to feel more and more certain about is that it will not only solve our country's problems, but it will also solve our climate change problem.

On the other hand, there is also a pessimistic view of urban problems.

I've worked in cities for 40 years, and every mayor unanimously says, "My city is too big."

It's not about the size of the city, it's not about the money.

For any urban problem, there's a formula for the solution: shared responsibility and design.

First, I'd like to introduce you to some characters from a book I made for children.

A good example of quality of life is the turtle, because it's like living and working in one place.

Did you notice that the turtle's shell looks like the structure of a city? Imagine how sad she would be if you cut her shell into pieces.

This is what we do: living in the city, working, playing

A lot of people are leaving the city - living in the suburbs.

The next character is Otto the car

He's been invited to a party, but he never wants to leave.

Even after I started putting the chairs on the table, he's been drinking, and he's been drinking a lot. He coughs a lot and is very selfish.

it's a highway

I'm a very demanding guy.

On the other hand, this accordion is a friendly bus. It can carry 300 people, 275 in Sweden, 300 in Brazil. Let's talk design. Every city has its own unique design.

Curitiba, the city where I'm from, compared to the metropolitan area's population of 3 million -- Curitiba has 1.8 million.

Curitiba and Rio side by side it looks like two birds kissing

Oaxaca and San Francisco have very simple structures like Market Street Van Ness Waterfront.

Every city has a unique design

But to put it into action, you have to come up with a scenario and a design, and everyone comes up with an idea that most people will support.

And this is the structure of the city of Curitiba.

This is an example of proximity to work and home.

Curitiba is densely populated, so there's plenty of public transportation.

So when we started this system in 1974, we were 25,000 passengers a day, and now we're 2.2 million passengers a day.

It took 25 years in Bogotá, the capital of Colombia.

very well run

And now, 83 cities around the world -- Curitiba's BRT (Bus Rapid Transit System).

There's one important thing here, and it applies to all cities.

So two key issues, mobility and sustainability, are becoming important for cities.

This is a double articulated bus

because my house is near

Please have a coffee when you stop by Curitiba

This is the evolution of the system

What's different about this design is the boarding tube, where the bus does what the subway does.

So you could say this is a bus turned into a subway.

This is the design of the bus. You pay before you get on the bus.

People with disabilities can use the regular system

What I'm trying to say is that cars are the main source of carbon dioxide emissions, and more than 50 percent of emissions come from cars.

So when it comes to sustainability, green buildings aren't enough.

Not enough new materials

Not enough new energy sources

What we need is a city concept, a city design, and we need to educate our children.

I will talk about this later

And then about the idea of ​​"movement," which is to make all the systems work together.

In Rio in '83, we showed you how to make the subway and buses work together.

Of course, there was opposition from the subway side.

But 23 years later, I got a request to move forward with this idea, and this idea is in the works.

So let's see how things have changed. This is Rio after the system.

It's not Shanghai. It's only lit up at night, but it looks like this.

You'd think it was designed by Norman Foster -- I designed it in '83.

Here's a picture of a model, same system but different vehicle, to see how this works.

The point here is that we don't want to prove which transportation system is better.

What's important is to have all the systems work together and make it one. If you have subways, you have trains on the ground, you have all kinds of systems, they should never be competing for the same space.

Back to cars, I used to say that cars are like your mother-in-law, you have to have a good relationship with your mother-in-law, but she can't control your life.

If the only woman in your life is your mother-in-law, you're in trouble. How do you make a difference through design? The idea is the old quarry, the university's botanical garden.

For six months, I taught children how to sort garbage.

Then the children teach their parents

And now, we're 70 percent sorted -- the highest sorted rate in the world for 20 years.

70%

(Applause) So tell your kids

To have a sustainable world, we need to do all of the things I just said, but let's not forget our children and our cities.

I currently work in museums and multi-use cities, because you can't have an empty space 18 hours a day.

We have to have a structure that allows us to combine the place of living and the place of work.

It's about understanding the division of roles within a city, so that each person can play a different role in a 24-hour period.

Another problem is that cities are like family photos

You can't cut a picture of your family, even if you don't like your uncle's nose, because the picture is you.

These apply to any city

This is the main trail. Done in less than 72 hours. Yes, it should be done soon.

this is from brazil

This is the Italian portal Ukrainian parks Polish parks Japanese gardens German parks

The Soviet Union suddenly split

Since then Uzbekistan Kazakhstan Tajikistan ..... now we have to cancel the program

(Laughter) Creativity starts with taking a zero out of your budget.

Two zeros would be even better

This is a wire opera house, completed in two months.

It's a park. We turned an old quarry into a park.

The quarry was returning to nature, but we focused on this and transformed it.

You can change anything, any frog can turn into a prince

Need to move fast in the city

Planning takes time, so what I propose is urban acupuncture.

What I mean by that is ideas that support the normal planning process.

And here's an acupuncture memo, IM Pei's work: Small things can make cities better.

It's the smallest park in New York, and it's also the most beautiful park, at 32 meters.

I'd like to end by saying that you can always come up with something new and sustainable, but don't forget that you need to move fast, after all, you don't have time to plan.

Creativity and innovation are taking off

can't have the answer to everything

So when you start, you won't be a competent person with all the answers. It's important to have people to help you. If you're going in the wrong direction, people will tell you.

Finally, I would like to sing a sustainable song.

May I?

just take 2 minutes

Everyone please carve out the rhythm

Toonchi-too! Toonchi-too! Toonchi-too! ♫ Toonchi-too! Toonchi-too! Toonchi-too! can! you can do it! you can do it! ♫ ♫ Use less cars! Make a decision! ♫ ♫ Stop emitting CO2! can! can! ♫ ♫ You can do it! you can do it! ♫ ♫ Bring life closer to work! ♫ ♫ Bring work closer to home! Save energy at home! ♫ ♫ I can do it! can! you can do it! ♫ ♫ You can do it! Separate your garbage! ♫ ♫ Organic farming! Save more! Let's reduce waste! can! ♫ ♫ You can do it! Get started now! ♫ Thank you

(applause)

What would the world be like in the war on drugs?

Murder and violence in Mexico, Central America, and many other countries Murder and violence in Mexico, Central America, and many other countries Approximately $300 billion a year in the global black market Approximately 300 billion dollars a year in the global black market Prisons are overwhelmed in the United States and everywhere else Prisons are overwhelmed in the United States and in other countries With police and military wars that cannot win, people's basic rights are being violated and people just hope they're not in danger, while more people are taking more drugs than ever before. using

That's 50 times more than our country was during Prohibition and Al Capone. It's 50 times more than our country was during Prohibition and Al Capone.

What I find particularly frustrating, as an American, is that our country has always been behind the global war on drugs.

Why are drugs no one has heard of being illegal in many countries? Why does the UN drug convention emphasize criminalization over health? Why does the UN drug convention emphasize criminalization over health? If you ask why the world's money to tackle the drug problem, why would you spend the world's money to tackle the drug problem, instead of aid organizations, the answer is good old America.

Why did you do this?

Latin Americans in particular don't think this is a problem with drugs per se Latin Americans in particular don't think this is a problem with drugs per se

This is just an excuse to promote America's political interests.

But overall, that's not all.

Gangsters and guerrilla fighters cannot be allowed to use the money they get from drug trafficking to commit terrorism and take over other countries.

The fact is America goes insane when it comes to drugs In fact America goes insane when it comes to drugs

Remember that drinking was once forbidden

The global drug war can be thought of as an international estimate of domestic mental illness rather than a rational policy.

(Applause) But I have good news for you.

Russia is currently leading the war on drugs.

Most American politicians want to roll back the war on drugs and reduce prison populations. As an American, I am proud to say that we are leading the way in reforming cannabis laws.

Nearly half of the states in the United States now legally use cannabis for medical purposes, and millions of people can now purchase cannabis from government-licensed dispensaries.

It's already legal in Colorado and Washington, and it's being legalized in Uruguay and other countries.

This is my mission: to put an end to the war on drugs.

It all started when I grew up in a deeply religious and moral household, the eldest son of a Jewish leader, and I went to college, where I smoked cannabis (Laughter).

I hate hypocrisy, so I wrote my PhD thesis on international drug control.

tell my thoughts to the State Department

got permission to enter

I met with hundreds of Drug Enforcement Agents and law enforcement officers in the United States and Europe, and asked them, "What do you think the answer is?"

In Latin America, they would say, "The drug supply cannot be stopped.

The answer is up to America, we have to stop the demand." The answer is up to America, we have to stop the demand."

So I went home, and I spoke to people who were working to fight drugs, and they said, "Ethan, you know, demand doesn't stop.

The answer is over there, we have to stop the supply."

So there's a drug crackdown at the border, and you ask the customs officers, there's a border crackdown on drugs, and you ask the customs officers, and they say, "We can't stop here."

Because the answer lies in the supply side and the demand side."

It made me think, this thought is having an effect. There is an answer in an area that we know very little about.

Since then, I've read every book I can about psychotropic drugs -- the history, the science, the policy -- and the more I read, the more it became clear to me how thoughtful, wise, and intelligent our approach had led me to this answer.

I found this difference to be a very intellectual and moral conundrum. I found this difference to be a very intellectual and moral conundrum.

A drug-free society has never existed.

In fact, in every society, psychotropic drugs have been used to treat pain, increase vitality, and for social and religious purposes.

The need for a change of mood is probably as basic as appetite, the need for socializing, and sexual desire.

Our real challenge is to learn how to deal with drugs in a way that minimizes their harm and sometimes maximizes their benefits.

And I've also learned that why some drugs are legal and others are illegal has little to do with science or health or the relative risks of drugs.

In the late 19th century, most of today's illicit drugs were legal. The main users of opiates in our country and elsewhere were middle-aged white women, substituting pain relievers when other pain relievers were scarcely available.

Nobody wanted to make it illegal because they didn't want her to be a criminal.

But hundreds of thousands of Chinese came to our country, working hard on the railroads and mines, lounging at night and smoking opium in pipes as they did in their own country.It wasn't until California and Nevada first passed drug ban laws that the Chinese feared they were turning white women into opium-addicted sex slaves, driven by racists.

The first law to ban cocaine was similarly driven by Southern racists who feared that black people would use cocaine and become incapacitated.

The first laws to ban cannabis are all due to concerns about Mexican immigrants in the West and Southwest.

In the origin and enforcement of these laws, what applies to us in the origin and enforcement of these laws applies to many countries.

As an analogy, to exaggerate the story a little, if cocaine's primary smoker is wealthy older white men, and Viagra's primary consumer is poor, young black men, smoking cocaine is readily available by prescription, and selling Viagra could mean five to 10 years in prison.

(Applause) I used to be a university professor teaching on this subject.

Today, I'm a human rights activist, and what drives me is the shame of living in a country that has less than five percent of the world's population, but roughly 25 percent of the world's population is incarcerated.

People I've met have lost loved ones to drug-related violence, to prison, to drug addiction, to overdoses, to AIDS, because they care more about criminalizing drug users than harming their health.

Good people lost their jobs, their homes, their liberties, and their children to the government. Good people lost their jobs, their homes, their liberties, and their children to the government.

So is legalization the answer?

It's actually a mixed bag, spending half the week in the affirmative and the other half in the negative, and avoiding conclusions on Sunday.

But since it's Tuesday, legally policing and taxing most drugs that are now illegal would radically reduce crime, violence, corruption, the black market, adulterated and lawless drugs, improve public safety, and free up taxpayer wealth for more profitable purposes.

If you look at the market for cannabis, cocaine, heroin, methamphetamine, it's the same global market as alcohol, tobacco, coffee, sugar, etc., which are in demand all over the world.

supplied where there is demand

Even if you filter out one factor, another always appears.

We tend to think of banning as the ultimate law and regulation, but in reality, criminalizing it shows that we've nullified the problem and abandoned regulation.

This is why criminal law and police policing a vibrant world market would be disastrous.

What we really need to do is get as many black market drugs on the market as possible, regulate them legally and as wisely as possible to minimize their harm and the negative impact of prohibition policies.

So why not legally regulate and tax marijuana just like alcohol?

The benefits are great and the risks are negligible.

Do you think more people will use cannabis?

Maybe more, but not young people, because we're going to ban young people from smoking by law, and let's be honest, young people already know how to get cannabis.

I expect adults to use it more.

Among adults in their 40s, 60s and 80s, cannabis will be a favorite to use as an evening drink, as a sleeping pill, as a relief from arthritis and diabetes, as a remedy for marital ruts (Laughter), or for the health of the nation.

As for other drugs, in Portugal, for example, drug possession is not a crime. In Portugal, for example, drug possession is not a crime.

In Switzerland, Germany, the Netherlands, Denmark, and the United Kingdom, patients who have been addicted to heroin for years and who have repeatedly tried and failed to quit are given medical heroin and treated in hospitals. As a result, illicit drug abuse, drug-related illness, drug addiction, crime, and arrests have all fallen, health and well-being have improved, taxpayers have benefited, and drug users have broken their addiction.

New Zealand has passed legislation allowing the legal sale of recreational drugs with proven safety.

Here in Brazil and the rest of the world, you can legally buy and use ayahuasca, a great psychoactive substance, for religious reasons.You can legally buy and use it for religious reasons.

In Bolivia and Peru, every product made from the coca leaves that cocaine is made from, and every product made from the coca leaves that cocaine is made from, is legally marketed with no apparent public harm.

Cocaine was used in Coca-Cola until the early 1900s, and as far as we know, it was just as addictive as Coca-Cola today.

But what about tobacco? Nothing is more addictive and harmful to health than tobacco.

When you ask heroin addicts what the hardest drug to quit is, they usually say tobacco.

But in our country and many other countries, half of the people who were ever smokers quit without being arrested, in prison, or court-ordered and sent to an addiction treatment program.

This is because tobacco is highly taxed, there are time and place restrictions on its sale and use, and there are effective anti-smoking campaigns.

So if we outlawed tobacco completely, would the number of smokers go down? could have done

But imagine the nightmares the war on drugs will bring But imagine the nightmares the war on drugs will bring

There are two challenges we face today.

The first challenge is to plan and implement new policies to replace the ineffective prohibition, make adjustments to regulate what makes things better, and live in harmony with legal drugs.

The second challenge is a bit more difficult because it's about us.

In addition to the power of the prison-industrial complex and other vested interests to go their own way, each of us has a different mindset that stands in the way of reform.

It is our fears, our lack of knowledge and our assumptions that stand in the way of real change.

I think it all boils down to the children, because of the desire of parents to raise their children in a sterile room, and the concern that drugs will perforate that sterile room and endanger their children.

In fact, a series of drug wars looks like a legitimate and grandiose child protection movement, but the young people involved can raise objections.

What I want to say to my teens

First, don't touch drugs

Second, don't use drugs

Third, if you use drugs, I want you to know that the number one thing your parents want you to do is get home safe at night and grow up to be healthy and happy.

After learning about drugs, my belief is that safety comes first.

So what I've devoted my life to is building an organization that can say goodbye to the botched bans of the past and advocate for a new drug policy rooted in science, compassion, health and human rights. I believe that we should put an end to these efforts.

thank you

(Applause) Thank you.

Congrats Ethan, what a great response.

It was a powerful talk.

We're one step away from a standing ovation, but I suspect that some of the people in the audience watching online will say they know and are friends with teens who have fallen ill or died from drug overdoses.

I'm sure you've met people like this

what do you want to say to them?

Chris, the thing that surprises me the most right now is that the number of people I meet who have lost siblings and children to drug overdoses has grown exponentially. Ten years ago, they would have told you that you could line up all the drug dealers and shoot them.

And what we've learned is that the war on drugs doesn't protect children.

On the contrary, the children were in more danger On the contrary, the children were in more danger

That's why they're joining the movement to reform drug policy now.

Parents of other children addicted to alcohol, cocaine, heroin, parents of other children addicted to alcohol, cocaine, heroin ask themselves, why does this child need to go step-by-step in order to change, and constantly be involved with prisons, with the police, with criminals? Do we always have to deal with prisons, police and criminals?

We all know that no one can save the war on drugs We all know that no one can save the war on drugs

In America, the political deadlock is the biggest point of contention.

Do you think any real change will actually happen in the next five years?

To my surprise, the reporters who called me said, "Ethan, I think the way America is moving forward politically right now is the cannabis law change and same-sex marriage.

What are you doing? ”

Because the people Democrats decided to break up with were actually Republicans, and because state legislatures allow Democrat-majority bills to pass, this topic that we avoided will become the most successful example of one of America's most horrific policy problems.

Chris: Ethan Thank you for coming today Ethan: Chris Thank you

Chris: Thank you Ethan: Thank you (applause)

[This video contains explicit material, please read carefully] If you could go back in time to 800 BC, you would see unsuccessful merchants in Greece covered with baskets in the marketplace.

In pre-modern Italy, heavily indebted and bankrupt business owners were taken naked into the square and smashed on the buttocks against special stones while the crowds mocked them.

In 17th-century France, bankrupt business owners were taken to the center of the market and declared bankrupt.

And to avoid being imprisoned, he was made to wear a green cap that symbolized failure.

Of course these are extreme examples.

But the thing to remember is that if we punish people who fail too much, we're wiping out the innovation and business creation that drives economic growth in any country.

In today's world, entrepreneurs are not publicly humiliated when they fail.

I don't even announce bankruptcy on SNS

Rather, everyone will sympathize with the pain of failure.

But I won't go into detail about my failed experiences.

I've been through rock bottom too, so I understand.

I lost my business, and it was so painful to talk about it.

In fact, it took seven years, some exposure, and the support of friends.

My failure was like

When I was a business student, I met indigenous women.

They live in a poor farming village in the state of Puebla, Mexico.

made beautiful handicrafts

I met them and their works, and I wanted to help them.

Together with a friend, I founded a social enterprise that aims to create a source of income for women and raise their living standards.

We followed the textbook, just like we learned in college.

We recruited investors, spent time building companies, and educating women.

But we soon realized that we were immature.

Our handicrafts didn't sell and our financial plans were totally unrealistic.

I'll tell you the truth, I worked for years without pay, believing in miracles and dreaming that all of a sudden there would be a big buyer who would make me a profit.

But miracles like that don't happen

In the end, we closed the company.

It was originally a company to improve the lives of craftsmen.

I think it made it worse

I felt so guilty that I didn't talk about this failure story for years or put it on my résumé.

I didn't know any other failed entrepreneur, and I thought I was the only loser in the world.

Seven years later, one evening, I was out with a friend and we were talking about the life of an entrepreneur.

Sure enough, it became a story of failure.

I decided to tell my friends about my failures.

And they all had similar experiences.

In that moment, an idea popped into my head that all my friends were failures.

(Laughter) In all seriousness, I realized two things that night. First, I wasn't the only one to fail.

Please correct me if I'm wrong

That night was like an exorcism

Talking about failure makes me stronger

By not hiding my vulnerability, I was able to engage more deeply and meaningfully with others, and to take life lessons seriously that I hadn't experienced before.

Our experience of sharing stories of failed businesses led us to create a forum for others to share their failure stories.

I named it "Yakekuso Night"

A few years later, I set up a lab to study the impact of failure stories on businesses, people, and society, and I called it the Failure Lab.

It often surprises me that when entrepreneurs take the stage and start telling their failure stories, they seem to enjoy talking.

Not something to be ashamed of and embarrassed about in the old days

It's an opportunity to share lessons and build empathy.

I also discovered that when someone tells a failure story, it works its magic.

Bonds become stronger and everyone can work together smoothly.

Through events and research, I've come to an interesting discovery.

For example, when a company fails, men and women react differently.

A common reaction among men is to fail and start a new company within a year, but in a different industry, while women delay finding work and starting new businesses.

Because our hypothesis is that women are more likely to suffer from imposter syndrome.

Women feel they lack something to succeed as entrepreneurs.

But most of the time I have everything I need

But women need that process.

Men often feel that what they know is good enough and they can apply it elsewhere and hopefully they are better off than last time.

And interestingly, different regions deal with failure differently.

For example, in the Americas, a common reaction after a company fails is to go back to school.

In Europe, on the other hand, they seem to go to psychiatrists.

(Laughter) I don't know which one is better, but this is a future research question for us.

What's more, we've found that public policy has a huge impact on failed entrepreneurs.

For example, in my home country of Mexico, the regulations are so strict that it would take a huge amount of money and time to close a company.

Let's start with the cost

Even if all goes well, even under the best of circumstances -- no business partners, no suppliers, no customers, no employees -- it still costs $2,000 to officially close the company.

this is a lot of money in mexico

If you're on minimum wage, you have to work 15 months to save this amount.

let's talk about time

As you may know, in the developing world, the average lifespan of a company is two years.

In Mexico, it takes two years to close a company.

What would happen if the average company lifespan and the time it takes to close a company are about the same?

Of course, it discourages entrepreneurship and encourages the informal economy.

In fact, econometrics suggests that if it didn't take that long and money to declare bankruptcy, more new companies would enter the market.

So in 2017, we put forward some public policy proposals on bankruptcy legislation in Mexico.

A full year of working with entrepreneurs and legislatures across the country

And I'm happy to say that we succeeded in changing the law.

Hooray!

(Applause) When the new law goes into effect, entrepreneurs will be able to file for bankruptcy online, which is faster and cheaper.

(sighs) I didn't expect the night I made the damn night to be this big.

We are now active in 80 countries

At that time, all we could think about was sharing our failure stories.

I wanted people to understand that we should talk about failure.

It's not something to be ashamed of, it's not something to celebrate like it used to be, although some people say that.

I have something to confess here

It's heartbreaking to hear people and students in Silicon Valley make light of the idea that they're going to shut down the company soon.

Because I think "giving up too soon" is a double-edged sword.

Of course, if you give up quickly, you'll learn faster and you won't waste time.

But presenting entrepreneurs with giving up too soon as the only option can encourage them to avoid trying.

It might sound like I'm saying that it's okay to give up so easily.

Also, I can't help but feel that the culture of giving up too soon is just underestimating the devastating blow of bankruptcy.

For example, when my business failed, the hardest part was telling the indigenous women that the business had failed and that it was my fault.

Some people say it was a good learning opportunity for me, but the truth is that my business failure had a bigger impact.

It meant that indigenous women lost the income they so desperately needed.

so i want to tell

Just as you shouldn't publicly humiliate a failed entrepreneur, it's not best to give up too quickly.

I would like to propose a new motto: "think hard and fail."

We need to keep in mind that companies are made of people, they don't just magically appear and disappear without consequences.

If companies disappear, people will lose their jobs.

some lose money

In the case of social organizations and non-profit organizations, it can also have a huge impact on the environment and the community.

But what does it mean to "think hard and fail"?

It means being aware of the impact and consequences of business failure.

Remember what you have learned from your failures

It's about being aware of your responsibility to share that experience with the world.

thank you

(applause)

Can we use computers and cameras and microphones to represent the world in as different a way as possible?

How can we use the Internet to create new forms of cinema?

Why do we record on video in the first place?

With that simple question in mind, I started making films 10 years ago, first with my friend Christophe Abrik.

He ran a site dedicated to indie music - "La Blogothèque"

we were into music

I wanted to present music in as different a way as possible, and to distance myself from the music industry and the cliches that come with it when I'm filming the music I love and the musicians I admire.

We started putting our performances out on the internet every week.

let me show you some

Grizzly Bear playing in the shower Sigur Ros playing in a Paris cafe

Tom Jones in a hotel room in Phoenix New York playing by the Eiffel Tower

In the elevator at Olympiad station Arcade fire In Brooklyn Beirut descending the stairs

In the car, R.E.M. In the south of France at night, around the table The National

Bon Iver playing with friends in his apartment in Montmartre, Yesayer enjoying a long night, and so many other famous and unknown bands.

We put all of this footage online for free, and we wanted to share it all and express music in a different way.

I wanted to use all the latest technology to create an intimacy unlike any other.

Ten years ago there wasn't anything like that on the internet yet, so our project "Take Away Shows" was pretty successful, reaching millions of viewers.

After a while, I kind of wanted to go somewhere.

I had this urge to travel and explore the frontiers of the world, discovering different music.

How can we connect new technology with the road?

How do you edit a movie on a bus across the Andes?

So I embarked on a five-year trip around the world.

Around that time, I started a digital film music label, “Collection Petites Planètes,” which is also a tribute to filmmaker Chris Marker.

So let's take a look at some more of those videos.

Northern Brazil Technobrega diva Gabi Amarantos Chechen female ensemble

One Man Nation performing experimental electronic music in Singapore Brazilian maestro Thong Zeh singing on the roof of his house in Sao Paulo

Amazing Armenian rock band The Bambir Traditional music in a restaurant in Georgian capital Tbilisi

Great retro-pop band White Shoes from Jakarta, Indonesia Innovative band DakhaBrakha from Kiev, Ukraine

Tomi Lebrero from Buenos Aires, Argentina, playing the bandoneon with his friends, and musicians from other parts of the world.

I wanted to travel and create

It wouldn't have been possible to do it systematically, backed by a big company, to make a film like this.

I was traveling alone with a backpack, a computer, a camera and a microphone.

And then, just me and the locals, who were completely amateurs, we formed a team on the spot, traveling from place to place and filming the film.

What I really believed was that movies could be made simpler, like, "I want to make a movie, so please let me stay for the night."

It's like, "Please buy me a caipirinha in exchange for the video."

Depending on the location, it will be a different liquor

In Peru, everyone drinks pisco sour.

When I arrived in Peru, I had no idea what I was going to do.

I only had one phone number

But three months later, after traveling around the country, I had 33 films, and I could only rely on the help of local people who answered the question, "What's worth documenting here today?"

While living like that, I was able to work without creating an organization, so I was able to make decisions according to the moment, like, "I should shoot now."

"You should record the whole personality of the person"

It's a judgment like, "This exchange should be done."

When I went to Chechnya, the first person I met looked at me and said, "What are you doing here?

Are you a journalist? NGO? Are you a politician?

What kind of issues are you going to investigate? ”

But what really came to me was the magnificence of Chechnya's Sufi ceremonies and Sufi culture, which is completely unknown outside of this region.

When they found out that I was going to give them the footage that I had shot, I had given the footage to the public for free under a CC license, but I gave it directly to the locals so they could use it freely.

Because it's enough for me to express them in beautiful light

And when I'm filming people, I want their grandchildren to look at the footage and say, "Grandpa, you look like Beyoncé."

(Applause) It's really important, because it changes the way we look at our culture and our region.

Thinking will change

This may be one way of maintaining cultural diversity.

So why record video?

American philosopher Hakim Bey once said, "Every record is but a tombstone for a live performance."

It's a good word to remember, because we live in an age of visuals.

What does it mean to record?

Where are you going with it?

As I researched, I kept thinking, What does that mean?

As I researched music, I was trying to get to the bottom of its origins, like a thread.

where did it all come from?

As a Frenchman, I didn't know what I would discover, but it's actually quite simple: everything is sacred, and music heals the soul.

My camera, how can I use this little gadget to get closer, not only to capture the rituals of trance, but also to capture the same value of being in perfect harmony with people -- "cine trance," as it were?

That's what I'm working on now, researching new beliefs around the world.

let me show you some more footage

Indonesia Tana Toraja Funeral Ceremony Easter Ceremony in Northern Ethiopia

Well known Javanese trance ritual Jatilan Umbanda in northern Brazil

Chechen Sufi Ritual Mass at Armenian Sacred Church

Halal Sufi music in Ethiopia Ayahuasca ceremony of the Shipibo tribe in the depths of the Amazon in Peru

And here in Brazil, the new work I'm working on is "Híbridos"

Co-produced with Priscilla Telmon

This work examines the many forms of new faith within Brazil.

I call this little quest "experimental ethnography," an attempt to bring back a little bit of complexity by combining all the different disciplines.

Why do we record video?

i was still stuck there

Movies should teach us how to see things.

The way we express ourselves changes the way we see the world. The world we live in today, the world that the mass media portrays, is truly awful.

I think filming is about reclaiming a certain kind of complexity.

To reshape modern life, we need to create new forms of film.

and it's very simple

Thank you very much

(Applause) (Bruno Giussani) Vincent

Thank you very much. While I prepare for your next performance, I would like to ask you a question.

Because you're stepping into the sacred rituals and private moments of that village, town, group.

How do you get over the invisible wall when you go out while pointing the lens?

(Vincent Moon) I use my body to overcome walls rather than my head.

Traveling has taught me that, trust what you know with your body more than what you know with your head.

Respect isn't about taking a step back, it's about taking a step forward, being fully involved in the moment, the ritual, the place, so that people will welcome you and understand your enthusiasm.

(Giussani) You shot most of the footage in one take.

I don't think I do much editing.

The video shown at the beginning of the session was edited due to time constraints.

Unless that's the case, you go out there and don't plan too much and see what happens in front of you.

Can I say I'm filming?

MOON: Here's what I think: If I don't cut the footage and let the audience watch, I feel like the audience can get closer to that moment and that place.

I think it's a matter of respect for the audience. Instead of cutting and splicing it back and forth, let time flow.

(Giussani) Tell us a little bit about your new work “Híbridos” that you are working on here in Brazil.

Right before you came to this TEDGlobal, you were traveling all over the country photographing.

tell me about it

MOON: Híbridos, but... I truly believe that Brazil is one of the most devout countries in the world, an extremely great country, both in its religious beliefs and in its practice.

This is a big project that I've been working on all year, looking at different festivals in different parts of Brazil, trying to understand how people live with their faith.

Giussani: Vincent is going to introduce us to someone who will appear on stage later, and he's one of the people we've photographed before.

When did you shoot him?

MOON: I think it was four years ago when I first traveled.

Giussani: It's one of the early videos you shot in Brazil.

(Moon) Yes, it's an early one.

It was filmed in his hometown of Recife.

Giussani: Please introduce yourself.

(Moon) Let's keep it short

It's an honor to bring one of the greatest musicians that Brazil has ever produced to this stage.

Please pick me up. I'm Nana Vasconcelos.

(Giussani) This is Nana Vasconcelos.

(Applause) (Music) Let's go to the jungle

(applause)

The first patient ever to be treated with antibiotics was an Oxford policeman.

Scratching with rose thorns while doing yard work on holidays

That small scratch has become festered.

Within a few days, his head was swollen with an abscess, and his eyes were so purulent that they had to be removed.In February of 1941, this poor man was dying.

At the time, he was in the Radcliffe Clinic in Oxford, and luckily there, a small team of doctors led by Howard Frawley, had succeeded in synthesizing a tiny amount of penicillin. No one knew if it was a spider or not. If it had too many impurities, it would kill the patient.

So Albert Alexander gave the Oxford police officer penicillin, and within 24 hours he started to recover.

Fever goes down, appetite returns

By the second day it was much better

We were running out of penicillin, so we took his urine to the lab across the street, resynthesized penicillin from the urine, and gave him that, and it worked.

I was on my way to recovery for four days.

it was miraculous

On the fifth day he ran out of pennicillin and unfortunately he passed away.

It was a tragic end, but just as this child in the early 1940s, dying of sepsis, recovered in just six days from penicillin, so millions of people have recovered thanks to this magic bullet.

Millions of lives have been saved and global health has been transformed.

Antibiotics have been used in these patients, and they've been used to a great extent, and quite abusively, to treat illnesses that don't respond to antibiotics, such as the common cold and the flu, and they've been administered in sub-therapeutic doses, often in sub-therapeutic doses, to chickens and pigs to slightly lower the price of meat.

It's been administered to chickens and pigs frequently to slightly lower the price of meat, and we've used antibiotics for a long time to promote growth in animals that aren't sick.

What happened with this

The massive use of antibiotics around the world, the massive use of antibiotics around the world, puts a lot of selective pressure on bacteria, and their resistance is a problem, because that's how only resistant bacteria have been selected.

This is what we know about in the newspapers, and it's in every magazine, but I really want people to understand the seriousness of this.

this is serious

Next, I'd like to talk about the carbapenem resistance of Acinetobacter.

Acinetobacter is a nasty hospital-acquired bacterium, and we use the very best-in-class antibiotic carbapenems against it.

And in 1999, we see this pattern of resistance, which is about 10 percent or less in most parts of the United States.

Watch the video to see the change

I don't know where you live, but wherever you are, the situation is much worse now than it was in 1999, and that's the problem of antibiotic resistance.

It's a global problem that affects every country, rich or poor, and it's not just health care that's the root cause.

If we teach doctors not to overuse antibiotics, if we teach patients not to ask doctors for antibiotics, maybe this won't be a problem, and drug companies should be doing more to develop antibiotics.

What this tells us is that antibiotics are fundamentally different from other medicines, which means that if you use them the wrong way or the other, they can affect not only you, but others as well.

Economists will tell you that this is a public problem, and the problems we face in the antibiotic case are just that public problem, and the problems we face in the antibiotic case are just that public problem.

It's similar to another area of ​​concern that we all know: fuel use and energy consumption, both of which not only consume energy, but contribute to community pollution and climate change.

There are two ways to deal with a typical energy problem.

One is to make better use of the oil we have, which is similar to making better use of the antibiotics that we already have.

They are related, not separate

Because if you make a big investment in a new oil field, because if you make a big investment in a new oil field, the same thing happens with antibiotics.

And vice versa, if you use antibiotics right, you don't necessarily have to invest in developing new drugs.

If you think the two are perfectly balanced, think about this fact: this is actually what's happening in real life.

And that reality is coevolution. We see an example of coevolution in cheetahs and gazelles. We see an example of coevolution in cheetahs and gazelles.

If cheetahs hadn't evolved to run fast, they wouldn't have food.

Gazelle evolved to run fast so it wouldn't get eaten.

This is the same way we deal with bacteria. We're not cheetahs, we're gazelles. As I'm giving this speech, as I'm giving this speech, the bacteria are multiplying their progeny, and they're just choosing and trying and trying again and again, and they're building tolerance.

On the other hand, how do we get ahead of the bacteria?

The process of drug development is the search for a target molecule, all the clinical trials, and once you think you've developed a drug, the next step is the FDA approval process.

Through all of them, we try to get ahead of the bacteria, we try to get ahead of the bacteria.

This is obviously not a game that will last forever, and it's not a game where you can be the first to win with technology.

We have to slow down coevolution, and even in the case of antibiotics, there are some useful ideas that we can borrow from the energy field to think about how to do that.

For example, look at how energy is priced. If you think about the emissions tax, it's levied on the people who use polluting energy.

We can apply that approach to antibiotics to make sure they're being used appropriately.

Just as clean energy subsidies are being paid for less polluting, non-fossil fuels.

The same goes for the need to move away from using antibiotics, but if you think about it, what are the alternatives?

Anything that reduces the need for antibiotics will work, including nosocomial infection control and specifically seasonal flu vaccination, including nosocomial infection control and specifically seasonal flu vaccination.

In many countries, including the United States, probably the greatest use of antibiotics is against seasonal flu, so vaccination would be a big help.

A third option involves trading systems

It seems like a long way off, but given the fact that antibiotics may not be available for many patients with infectious diseases, we can envision a system where some of the antibiotics we use for other people are distributed to those who desperately need them, some of which should be based on clinical need and cost.

Consumer education will help

Because much of the abuse of antibiotics isn't necessarily consciously done, feedback mechanisms have proven to be helpful, and that's true with energy, too. Telling people that their energy use is high at peak times will encourage them to cut back on their use.

A hospital in St. Louis puts up a list of surgeon names, ordered by the amount of antibiotics they've used in the previous month.

Various things can be done on the supply side Various things can be done on the supply side

If you look at the price of penicillin, it's about 10 cents a day.

it's a pretty cheap drug

Since then, the drugs that have come out, like linezolid and daptomycin, are very expensive, and in a world that's used to 10 cents a day, $180 a day seems like a lot of money.

this high

The story is that we should no longer take cheap and effective antibiotics for granted.

And maybe we should look at other technologies, and maybe we should look at other technologies.

The price of a drug is an important signal that must be heeded, but there is a fact to consider. Expensive antibiotics are unusual, but they are nothing compared to the cost of certain cancer drugs per day. Cancer drugs may only extend life for a few months or even a year. Antibiotics have the potential to save a patient's life.

This is going to be a big change, and it's going to be a big change, and it's also a disturbing change, because in many places in the United States, in the world, you can't imagine paying 200 dollars a day for antibiotics.

you have to think about this

It's a safeguard option, there's a new technology that's being researched, there's a new technology that's being researched.

Bacteriophages, probiotics, quorum sensing, synbiotics, etc.

All of these are technologies that should be pursued for the future. When the price of new antibiotics goes up, these will also be good businesses. When the price of new antibiotics goes up, these will also be good businesses.

But here's the challenge

I don't want to waste money on problem solving

Our hope is that we can invest in new antibiotics in a way that encourages their sale and proper use.

Back to the new technology from earlier, one line from the famous dinosaur movie, "Nature finds its own way to heal itself."

It's like these technologies aren't going to be the permanent solution.

What we must not forget is that whatever the technology, nature will find a way to recover.

You might think that this is just a problem with bacteria and antibiotics, but exactly the same problem exists in other fields. Multidrug-resistant tuberculosis is a serious problem in South Africa and India.

Thousands of patients are dying because second-line drugs are very expensive and sometimes even ineffective, thus producing broadly drug-resistant tuberculosis bacteria.

Viruses gain resistance

Agricultural pest, malaria parasite

against artemisinin, the only treatment the world now relies on for malaria

Resistance is already beginning to emerge, and if it spreads, it will jeopardize the only currently safe and effective drug that must be used to treat malaria around the world.

Mosquitoes are also becoming resistant

If you have kids, you know about head lice, and if you live in New York, bed bugs are a big problem there.

All of these are also starting to become resistant

Bringing an example from England across the sea

Rats are becoming resistant to poison.

What all of this has in common is that we've run out of technology to control nature in the last 70, 80, 100 years, in a blink of an eye, because we've been unaware of the forces that natural selection and evolution are trying to put us back on track. how to encourage the method

We need to rethink how to

now we are at a crossroads

One option is to rethink and think carefully about how to motivate yourself to change your current ways of doing things.

The other option is a world where even a blade of grass can be a deadly weapon.

thank you

(applause)

They told me I was a traitor to my profession, that I should be fired, that I should lose my medical license, that I should go back to my country.

email has been tampered with

In a discussion forum with other doctors, someone took credit for sending a "twitter bomb" to my account.

Well, I didn't know what was right or wrong, but then I got the reply, "Sorry, it wasn't a real bomb."

I never dreamed that I would cause such outrage among other doctors.

It was my dream to become a doctor

I was born in China, and my first memory was being rushed to a hospital emergency room.

I used to see Dr. Sam all the time.

The teacher was as old as my mother

He had wild, curly hair and always wore bright yellow, floral clothes.

If you fell and broke your arm bone, the kind of doctor who would say, "Why aren't you smiling? This is your joke bone (humerus), you know?"

You see, you groan, but I always feel better when I see a doctor.

Like this, everyone has a childhood hero that they want to be when they grow up, right?

i wanted to be like teacher sam

When I was eight years old, my parents and I moved to America, and our story is a classic immigrant story.

My parents cleaned hotels, washed dishes, and worked at gas stations to fulfill my dreams.

Eventually, I learned enough English to enter medical school and accept my vows of healing and service to my parents' delight.

But one day everything changed

My mother called me to say I wasn't feeling well, complained of constant coughing, shortness of breath and fatigue.

I knew I was never the one to complain about anything.

I didn't think it was a trivial matter for my mother to tell me that she was sick.

Sure enough, my mother was diagnosed with stage IV breast cancer, and by then the cancer had spread to her lungs, bones, and brain.

But my mother was strong, brave, and hopeful.

I lost my address book while I was undergoing surgery, radiation, and my third course of chemotherapy.

My mom tried to look up the oncologist's phone number online, and she found that one, but she found another.

Several websites listed him as a spokesperson for a high-paid drug company, and he was actually speaking on behalf of the same regimen of chemotherapy that he had prescribed for my mother.

My mother called me in amazement, and I didn't know what to believe.

Maybe it was the right prescription for my mother, maybe it wasn't.

Mother became anxious and suspicious

When it comes to medicine, trust is essential, and when trust is lost, all that's left is fear.

There's Another Side to This Kind of Anxiety

When I was a medical student, I was seeing a 19-year-old patient, and he was riding his bike back to his dormitory when he was hit by an SUV, hit him hard, and got stuck under the car.

He had seven broken ribs, a shattered femur, an intra-abdominal hemorrhage and a cerebral hemorrhage.

Imagine his parents flying 2,000 miles from Seattle to see their comatose son.

You want to know how he's doing, right?

My parents said they wanted to accompany me on rounds, where we would discuss his condition and plan for treatment, which I think was a reasonable request, and an opportunity to show my parents how much we cared for him, and what we were going to do.

But my doctor said no

he gave all the reasons

It's probably going to disturb the nurses.

Maybe he didn't want the students to ask questions.

He also said, "What if a parent finds a mistake and files a lawsuit?"

What I saw behind every excuse was extreme fear, and I realized that to be a doctor, we had to wear white coats and build walls and hide behind them.

Medicine has a hidden epidemic

Of course, when visiting a doctor, patients feel anxiety.

If you wake up with a terrible stomach ache, you'll go to the hospital. You'll lie down in a strange place and be transported to that hospital on a stretcher.

I don't know what to do next

I don't even know if they'll bring me the blanket I asked for half an hour ago.

But it's not just the patients that worry, it's the doctors that worry too.

We're terrified that our patients will find out who we are, and that they'll reveal everything about medicine.

So what do we do?

we wear white coats and hide behind them

Of course, the more you hide, the more people want to know what you're hiding.

Increased anxiety has a negative impact on mistrust and poor health care.

We don't just have the fear of disease, we have the disease of anxiety.

Can we bridge the disconnect between what patients want and what doctors do?

Is it possible to overcome the disease of anxiety?

Let's ask the question differently. If hiding is not the answer, why not do the opposite?

What would happen if a doctor were to expose everything to his patients?

Last fall, we did a study to see what people wanted to know about medicine.

I wanted to study not only patients in hospitals, but healthy people as well.

Two medical students, Suhabi Tarkar and Laura Jones, literally doing street research.

They went to banks, coffee shops, senior centers, Chinese restaurants, train stations.

what did you find out

I asked, "What would you like to know about medicine?"

They said they wanted to know about their doctor, because the personal interaction between them and their doctor helped them understand medicine.

When asked, "What do you want to know about doctors?"

I got 3 different answers

Some people say they want to know if their doctor is competent and qualified to practice medicine.

Others say they want to make sure their doctors are unbiased and make decisions based on evidence and science, not who pays.

What surprises us is that many people want to know something else about their doctor.

Jonathan, a 28-year-old law student, says he wants to find an LGBT doctor who can satisfy his LGBTQ patients.

Serena, a 32-year-old accountant, says it's important that her doctor shares her values, especially when it comes to women's reproductive health and rights.

A hardware store owner, 59, Frank is reluctant to even go to the doctor, looking for a doctor who believes in prevention first, but is content with alternative treatments.

One after another, respondents told us that the doctor-patient relationship is a deep and intimate one, that because they are showing their bodies to their doctors and revealing their deepest secrets, patients first want to understand their doctor's values.

Just because a doctor should see every patient doesn't mean a patient should visit every doctor.

Everyone wants to know their doctor first so they can make informed choices.

As a result, I started an organizational activity "Who's My Doctor?

” is a call for total transparency in healthcare.

Participating physicians voluntarily publish on a public website not only information about where they graduated, what their specialties are, but also any conflicts of interest.

It goes beyond the government's Sunshine Clause, such as relationships with pharmaceutical companies and how much they receive from them.

Motivation, such as bounties, is a problem

If you go to a doctor for back pain, you want to know if that doctor is being paid $5,000 to perform spinal surgery, or is he being paid $25 to refer you to a physical therapist, or is he paying the same amount for whatever you recommend?

go one step further

Add our values ​​on women's and LGBT medicine alternative medicine preventive medicine end-of-life care

We are committed to serving our patients. Patients have the right to know who their doctors are.

We believe that transparency reduces anxiety.

I don't think there will be much resistance from the public.

Within 1 week of "Who's My Doctor?"

There have been thousands of posts on this topic on public forums in medical newspapers and in several online physician communities.

this is part of it

It's from a gastroenterologist in Portland who said, "I've been a slave for 12 years of my life.

I have debt and money I borrowed from a mortgage

I get by with lunch from pharmaceutical companies and interact with patients.”

Times may be tough for everyone, but tell a patient who makes $35,000 a year and supports a family of four that they need a free lunch.

From an orthopedic surgeon in Charlotte who said, "I think it's an invasion of privacy to reveal the source of your income.

Patients don't disclose their income."

But the patient's source of income won't affect the doctor's health.

This is from a psychiatrist in New York City: "Sooner or later you'll need to figure out whether you prefer cats or dogs, which model of car or which toilet paper you use."

What you think of Toyota or Kleenex may not affect your health, but your values ​​about women's choices, preventive medicine, end-of-life care do matter.

A cardiologist in Kansas City said, "More government-mandated stuff?

Professor Wen will have to go back to his homeland."

Well, I have two good news.

First, it's not mandatory, it's voluntary. Second, I'm an American and I'm already here.

(Laughter) (Applause) Over the course of a month, I received multiple calls to the hospital where I work, demanding that I be fired.

A letter came to my private address, threatening me with a complaint to the Medical Audit Board and sanctions.

Friends and family persuaded me to stop this activity.

Cessation of activity after bomb threats

But I heard from my patients

Through social media, tweet chats, I learned that by that time, I had been seen by 4.3 million people, and thousands of people were encouraging me to keep going.

It read, "If a doctor is doing something that would make him ashamed, he shouldn't be doing it."

"It's natural for elected politicians to reveal activity donations.

It is natural for lawyers to disclose conflicts of interest

So why aren't doctors obligated? ”

After all, a lot of people wrote and said, "Let us patients decide what's important when choosing a doctor."

Over 300 doctors took a full transparency pledge in the first trial.

What a ridiculously new idea, isn't it?

But actually this is not such a new concept at all.

Remember my hero in China, Mr. Sam, with his silly jokes and wild haircuts.

Yes, she was my teacher, but she was also my next-door neighbor in the building across the street.

I went to the same school as her daughter

My parents and I trusted my teacher because we knew who she was and what she was thinking. There was no need for her to hide from us.

Just a generation ago, this was the norm in America.

We all knew that our family doctor was the father of two teenage boys, and that a few years ago he quit smoking and said he always attended church, but we only saw him at church twice a year, once on Easter, and once when his mother-in-law came out on the town.

We all knew who you were, and there was no need to hide anything from you.

But the sickness of anxiety reigns, and the patient suffers as a result.

i'm straight

I watched my mother battle cancer for eight years.

She made plans and thought a lot about how she wanted to live and how she wanted to die.

Not only had he signed an advance directive, but he had written a 12-page document about how sick he was and how close he was to dying.

One day when I was a resident, I got a call that my mother was in the intensive care unit.

By the time I got to the hospital, my mother was intubated and almost put on a ventilator.

"This is not what my mother wants," I said, "I have the documents."

The ICU doctor looked me in the eye, pointed at my 16-year-old sister, and said, "Remember when you were this little girl?"

"You wished you could live without your mother, didn't you?"

My mother's oncologist was there and said, "This is your mother.

If you couldn't do everything for your mother Can you really face yourself until you die? ”

I knew my mother well

I understood her instructions very well, but I was a doctor.

It was the hardest decision I ever made to let my mother die in peace, and the words the doctors said to me come back to me day after day.

We can bridge the disconnect between what doctors do and what patients want.

We can get there, because we've been on this road before, and we know that transparency leads to trust.

Studies show that being open about information also helps doctors, and that opening up medical records and trying to talk about medical errors increases patient trust, improves health outcomes, and reduces medical errors.

This disclosure, this trust, becomes all the more important in an era where we're moving from an epidemic to a behavioral disease model.

Bacteria may not have much to do with trust and intimacy, when people are grappling with difficult lifestyle choices, when it comes to things like quitting smoking, managing blood pressure and diabetes, things like that that require a doctor's trust.

These are the words of doctors who have achieved transparency.

I'm Brandon Comb, a physician in Denver.

It's a model of the relationships I've built, and that's why I got into medicine."

I'm Aron Staple, a Denver internist. "I tell my patients I have nothing to hide.

don't hide anything

this is me now tell me about you

we are together"

I'm Mei Nguyen, a family doctor in Houston.

They ask me how I got to be so brave.

My answer is, 'It's not that I'm brave, it's my job'."

Let me give you my last thoughts today.

It's scary to expose everything

You'll feel exposed and exposed and open to criticism, but vulnerability and humility can be an amazing advantage for medical practice.

When doctors willingly step off their pedestals, take off their white coats, reveal themselves to their patients, and tell them all about medicine, then we begin to overcome the disease of anxiety.

That's when trust is established.

That's when we will change the paradigm of medicine from secrecy and cover-up to being completely open and engaged with the patient.

thank you

(applause)

On January 4th, 1934, a young man submitted a report to the United States Congress, 80 years ago, that still shapes the lives of not only those present here, but of every person on the planet.

The young man wasn't a politician, he wasn't a businessman, he wasn't a civic activist, he wasn't even a faith leader.

He was an unlikely hero and what an economics expert.

His name was Simon Kuznets, and the title of the report he filed was "National Income 1929-1932."

You'd think it would be a boring and uninteresting report.

everyone is right

it was terribly boring

But that report became the basis for measuring the country's success today, known as Gross Domestic Product, or GDP, as you know it.

GDP defined and shaped the next 80 years GDP defined and shaped the next 80 years

What I want to talk about today is another way to measure the success of a country, another way to define and shape the next 80 years, another way to define and shape the next 80 years.

First of all, we have to understand how GDP rules our lives.

Kuznets was filed in times of crisis.

The American economy was plummeting toward the Great Depression, and it was a time when policy makers were struggling.

I had no idea what was going on, and I was struggling.

They didn't have the data, they didn't have the statistics.

So Kuznets gave them an annual report with credible data on what the American economy was producing.

With this information, policy makers were finally able to get out of the Great Depression.

Kuznets' invention was so useful that it spread around the world.

And today, every country counts GDP.

But in fact, Kuznets also warned against it.

it is in the introduction to the report

On page seven, he says, "A country's social welfare itself is seldom estimable by the national income mentioned above."

Not the best catchphrase in the world, but an economist's cautious phrasing.

What I'm trying to say is very clear: GDP is just a tool, it's just a measure of economic performance.

it's not a measure of our happiness

It's not supposed to be a guide to guide every decision.

But Mr. Kuznets' warnings were ignored.

In our world, GDP has become the measure of global economic success.

Politicians brag when GDP goes up

Markets move, and trillions of dollars of capital are circulating around the world, based on which countries are getting richer and which are getting richer, all measured in GDP.

Our society has become an engine for creating more GDP.

GDP has weaknesses

ignoring the environment

Considering the munitions industry and the prison business as developments

Happiness and people are not considered

And there's no mention of fairness or justice.

If that's the case, isn't it rather natural that this world, driven by GDP, is slow to respond to the impending environmental disaster, and is filled with anger and strife?

A better measure of society should be based on what is actually happening to people.

Do you have enough food?

Can you read and write?

Are you safe?

have the right?

Do you live in a society without discrimination?

Is my future and my children's future protected from environmental destruction?

These are questions that the GDP will not answer and cannot answer.

Of course, there have been efforts to go beyond the GDP theory in the past as well.

I believe it's time to revolutionize the way we measure society.

Now is the time, because we witnessed the 2008 financial crisis deluded us into a dependence on economic development.

And in the Arab Spring, we saw that even in a country like Tunisia, which was an economic star, their societies were filled with dissatisfaction.

Now, we even have the technology to collect and analyze data in ways that Kuznets couldn't have imagined, so now is the time.

Today I would like to introduce you to the Social Progress Index.

It measures the well-being of a society and has nothing to do with GDP.

A whole new way to see the world

The Social Progress Index defines what a good society is in three dimensions defines what a good society is.

First, do all people have the food, water, housing, and security they need to live?

Secondly, do all people have the building blocks to improve their lives, such as education, information, health, and a sustainable environment?

Third, does every individual have the opportunity to achieve their goals, dreams and aspirations without obstacles?

Rights Free choice Equality Do you have cutting edge knowledge? Are you on the cutting edge of knowledge?

Together these 12 elements make up the framework of social progress.

These 12 factors are indicators of how countries are operating.

It's not a measure of effort or willpower, it's a measure of real achievement.

It measures not how much a country spends on the health of its citizens, but how long and how well its citizens live.

We don't measure whether governments pass laws to combat prejudice, but how people experience prejudice.

But what you want to know is which country is the best? (Laughter) I know, I know, right?

let me show you

see this graph

On this graph here, the vertical axis represents the social progress index.

the higher the better

And for comparison, jokingly, the horizontal axis is GDP per capita.

more to the right

New Zealand has the highest social progress index of any country in the world.

(Applause) Good. I would love to go.

(Laughter) Chad, unfortunately, has the lowest Social Progress Index.

I haven't been there, maybe next year

(laughs) No, maybe the year after next.

I know what you're thinking right now

"Well, but New Zealand's GDP is higher than Chad's!"

good point

Let me show you two other countries.

This is the United States, which is much richer than New Zealand, but has a lower social progress index.

And Senegal has a higher social progress index than Chad, but the same level of GDP.

see what's going on

Here's a dot representing all 132 measurable countries.

got a lot of points

I can't explain it all, but in summary, the highest ranked country in the G7 is Canada.

My country, the UK, is doing okay, nobody cares, but they beat France.

(Laughter) If you look at the emerging economies, the top BRICS, congratulations, Brazil.

(Applause) Hurray!

let's go to brazil

Brazil has beaten South Africa, and Russia, China and India.

Kuwait is the country on the far right with the highest GDP but the lowest Social Progress Index.

The country with the highest social progress index, slightly above Brazil, is the Republic of Costa Rica.

Same social progress index as Western European countries, but lower GDP.

Now that my slides are all messed up, I'd like to go back to the dots.

Remove the country names and show the regression line

This graph shows the average relationship between GDP and social progress index.

The first thing you'll notice is that there's a lot of noise around the trend line.

What this shows is that GDP is not inevitable.

Regardless of what our GDP per capita is, there are opportunities to make more social progress at much lower risk than achieving GDP.

The second thing to notice is that the curve is steeper in poorer countries.

What this shows is that if poor countries get a little more GDP, and if poor countries get a little more GDP, and they can invest in doctors, nurses, water, sanitation, and so on, then the money they get in GDP can be used to make massive social progress.

A good example is that in the last 20-30 years, some poor countries have been lifted out of poverty through economic development and good policies.

But if you look a little further down the curve, the line flattens out.

Social progress gained from surplus GDP is dwindling.

This part of the curve shows that as the world's population grows, GDP becomes less and less useful as a measure of development.

Let's take the example of Brazil

This is Brazil, with a Social Progress Index of about 70 out of 100 and a per capita GDP of $14,000 a year.

Brazil is on the curve

Brazil is doing pretty well in converting its GDP into a social progress index.

But what will happen to Brazil?

Brazil could adapt a bold economic plan to double its GDP in the next decade.

But that's only half the plan

No. Less than half Where is Brazil going on the Social Progress Index?

Brazil may increase its GDP by increasing its growth rate while stagnating or declining social progress.

But I don't want Brazil to be like Russia.

I would like Brazil to be more capable of producing a social progress index from GDP, more like New Zealand than Russia.

To do this, Brazil needs to prioritize the social progress index in its development plans, not just grow exclusively, but grow with the social progress index.

What the Social Progress Index can do is reshape the framework of development, not just about GDP, but about inclusive and sustainable growth that actually improves people's lives.

it's not just about the state

Earlier this year, the nonprofit organization Amazon began using the Social Progress Index in rural areas for the first time in Brazil.

done in the Amazon region

It's a poor place about the size of Europe with 24 million people.

Here are the results, divided into 800 municipalities.

Detailed information about the real quality of life in this region is presented here.

This is just the beginning. You can create a Social Progress Index for any country, region, city or municipality.

Like TEDx, this is the Social Progress Index x.

A tool that anyone can use

Sometimes we say, GDP is not a God-given slate of the Ten Commandments.

In the 21st century, we face new challenges: aging, obesity, climate change.

To confront these, we need new tools, tools to assess new developments.

Imagine what it would be like if we could measure whether nonprofits, charities, volunteer organizations, local governments, and others are contributing to our society.

Imagine companies competing not only for their economic contribution, but also for their contribution to the progress of society.

Imagine if we could hold politicians accountable for really improving our lives.

Governments Corporations Municipalities Let me imagine you working together to shape the progress of this century and society.

thank you

(applause)

Imagine, Monday morning, you're sitting in your office to start the day's work, and this guy down the hall, who you just know, walks straight into your booth and grabs your chair.

without a word - just roll it

You can't tell me why yours when there are other chairs around.

I turn a blind eye to the fact that I need a chair to do today's work.

you won't be able to stand it you will complain

You'll follow the guy to his booth and say, "Why is it my chair?"

OK, Tuesday morning, you're in the office, and a meeting invitation pops up on your calendar.

(Laughter) It's from a woman down the hall, who I don't know much about, and the subject is about a project I've heard a little about.

but the agenda is not written

It doesn't even say why you were summoned to the meeting.

Even so, you will attend the meeting according to the invitation.

After this extremely unproductive session, you're back at your desk and you stand by it and say, "I want these two hours back, and I want my chair back."

(Laughter) Every day, our colleagues steal something from us, otherwise they'd be very nice people.

And I'm talking about something far more valuable than office furniture.

it's about time it's your time

In fact, I believe that we are in the midst of a terrifying new global epidemic, known as MAS (Mindless Accept Syndrome), "The Unawareness-Attendance-Syndrome."

(Laughter) The main symptom of this "unawareness-attendance-syndrome" is that when a meeting invitation pops up on your calendar, you simply accept to attend.

(Laughter) It's an involuntary reflex. The calendar clinks, clicks, clinks.

Collaboration is the key to success in any company

Well-run meetings lead to very positive and actionable results.

But between globalization and the pervasiveness of information technology, the way we work has changed quite dramatically over the last few years.

It's a tragedy for us. (Laughter) The tragedy isn't about people who can't run meetings well, it's about our MAS, unawareness-attendance-syndrome. This is self-harm.

In fact, I have proof that this MAS is a global epidemic.

let me tell you why

A few years ago, I posted a video on YouTube in which I acted out the worst conference call you've ever had.

The video is about five minutes long and it contains all the things we hate about really bad meetings.

The moderator who has no idea how to proceed with the meeting

Some attendees have no idea why they were summoned.

Disruptions of various kinds make collaboration a disaster.

and make everyone very angry

it's funny

(Laughter) Let's just take a look.

(Video) Our goal today is to reach agreement on a very important project.

Decide as a group on the following points- plululu- hello who came?

I'm Joe. I'm working from home today.

(Laughter) Hey Joe, thanks for coming today, that's great.

I'm just in the middle of explaining There are a lot of people on the line I want to talk to Let's skip the roll call and get to the point

Our goal today is to reach agreement on a very important project.

Let's make decisions as a group on the following points -- plululu -- (Laughter) Who's here?

different? I thought I heard the ring tone (laughs) Is that a familiar sight?

yeah it's familiar to me

In the weeks after I posted this video online, half a million people in dozens of countries watched this video.

And three years later, it's still getting thousands of plays every month.

now approaching 1 million

In fact, some of the world's largest companies, whose names I'm not naming, are asking for permission to use this video in their new hire trainings, to teach them how to hold meetings that they shouldn't be doing at work.

If the evidence -- one million views and use by large companies -- isn't enough evidence to say that conferences are a global issue, then there are thousands of comments that have been posted online since this video was published.

Thousands of people say, "Oh, this is what I look like today!"

"I am like this every day"

"This is my life"

One man said, "Interesting! Because this is true.

Eerie, sad, depressingly true

i laughed till i cried when i saw this

I cried, cried, and still more

(Laughter) This poor man said, "This is how I'm going to live until I retire or die. (sigh)."

These are quotes from the real thing, very sad

What's consistent with these online comments is the underlying belief that we have no choice but to go to meetings and we have no choice but to go to meetings and suffer from this poorly run meeting and every other day it repeats itself.

But in reality we are not helpless at all

In fact, the cure for MAS is in our hands.

It's right at your fingertips

I'm doing this No MAS!

(Laughter) Which, if I remember the Spanish I learned in high school, means something like, "Enough is enough, let it go."

Let's see how No MAS works It's very simple

First of all, the next time you receive an invitation to a meeting, if it doesn't say much about it, click the "Tentative Attendance" button.

It's okay, it's allowed, that's why there's that button

Right next to the "Attend" button

Or whatever it is, click the button that says it's not an immediate attendance

Then contact the organizer of the meeting

Tell them that you really want to help with this matter, then ask them what the goal of this meeting is and say they'd like to know how you can help them reach that goal.

If we repeat this over and over again, respectfully, people around us might be a little more thoughtful about how we send out meeting invitations.

And you, too, can be more thoughtful in deciding whether to attend.

You may start receiving agendas. That's great!

Or maybe you don't have to connect with 12 people and have a conference call for something that can be done with a simple email.

If you change your behavior, the world around you may also change.

You might get your chair back (laughs) NO MAS!

thank you

(applause)

I haven't told too many people, but I have thousands of secret worlds going on at the same time in my head.

i am also autistic

People tend to associate the diagnosis of autism with a particular checklist description, but the reality is that we are all very different.

For example, my brother has very severe autism.

can't speak at all

but i love to talk

People with autism are often associated with math and science and nothing else, but I know a lot of people with autism who love to be creative.

But it's a stereotype, and stereotypes about things are often, if not always, wrong.

For example, when most people hear the word autism, they immediately think of "Rain Man."

It's a myth that everyone with autism looks like that Dustin Hoffman. It's a myth that everyone with autism looks like that Dustin Hoffman. This is not true.

But this isn't just about people with autism.

So are LGBTQ (sexual minorities) and women POC (people of color) people.

People are so afraid of being out of the ordinary that they try to squeeze everything into little boxes with specific labels.

This is what happened to me. This is what happened to me. One day, I googled, "People with autism..."

The next predicted character candidate appears- The next predicted character candidate appears-

When I put in "people with autism..."

The top result was "Devil"

This is the first thing that comes to mind when people think of autism.

you understand well

(Laughter) One of the things that I can do with autism -- it's more of an ability than a disability -- is that I have a very vivid imagination.

please let me explain

It's like walking between two worlds most of the time.

There's a real world that we share, and a world in our minds, and often this inner world is much more real than the real world.

For example, I find it very easy to let go of my mind, because I'm not trying to put myself in a little box.

This is one of the greatest things about being autistic.

You will not be driven by such impulses

You find what you want to do, find a way to make it happen, and work on it.

If I tried to put myself in a box I wouldn't be here now I wouldn't have done half of what I've done

but there is also a problem

The problem with autism is that it's too imaginative.

School life is often problematic, but having to explain to your teacher on a daily basis that classes are inexplicably boring and that you're secretly escaping into your head and not being in a real classroom creates a new source of trouble.

(Laughter) Again, when I let my imagination take over, my body started to take on a life of its own.

When something very exciting happens in my inner world, I start running.

Rocks back and forth and sometimes screams

Imagination gives me tremendous energy, and I need an outlet for that energy.

But I've been doing this since I was a kid, since I was a little girl.

My parents thought it was cute and didn't really care, but when I started school it wasn't cute anymore.

Some people may not want to be friends with a girl who screams in algebra class.

This is unlikely to happen in this day and age, but some people may not want to be friends with an autistic girl.

Some people may not fit in a box labeled "Normal" and some people may not want to be associated with them.

But I'm fine with that, because it sorts out people, and I know who's really good, so I can choose those people as my friends.

But come to think of it, what is "normal"?

What does "ordinary" mean?

Imagine that's the best compliment you've ever received

"You are really normal"

(Laughter) But compliments are like, "You're out of the ordinary."

which means "great"

So if that's what you want, why do so many people try so hard to be normal?

Why do people put their sparkly personality into a mold?

People are so afraid of differences that they try to make everyone normal, even those who don't want to be or can't be.

There are trainings that try to normalize LGBTQ and autistic people, and it's scary to do that these days.

I never try to live at the expense of being autistic or imaginative.

Because of my autism, I've been in a BBC documentary, I'm in the middle of writing a book, and I'm even here to talk -- it's amazing -- one of the best things I've done, or maybe I've done, is find a way to communicate with my brother and sister.

And people often look down on people who can't speak, stupid, because my brothers and sisters are the best siblings you could ever hope for.

They're just the best. I love them. I love them more than anything else.

I just want to leave you with one question: If we can't tap into people's minds -- autistic or otherwise -- why not celebrate their uniqueness rather than condemn them for being out of the ordinary and rejoice that they've let their imaginations run free?

thank you

(applause)

Hello everyone

How many of you participated in the Ice Bucket Challenge?

(Applause) Well, that's great!

Thank you from the bottom of my heart

$125 million for the ALS Association $125 million for the ALS Association

It must be amazing! (Applause) That goes back to the summer of 2011.

all my children grow up

From the outside, my husband and I were Sky Nests, so we decided to take a family vacation together.

My daughter Jen and her husband just returned from New York.

My youngest son, Andrew, was working in Boston, so he came home from his home in Charlestown, and my son, Pete, played baseball at Boston University, played professional baseball in Europe, and then came home to sell group insurance, so he joined the plan.

So one night, I was drinking beer with Pete, and Pete looked at me and said, "Hey mom, I just don't like insurance sales."

He said, "I feel like I'm not reaching my full potential.

I don't think this job is my vocation."

And he said, ``By the way, Mom, I have to go home a little early. The city league team I'm playing on has the finals, and I can't let my team lose, so I have to go back to Boston.

I don't have as much passion in my work as I do in baseball."

So I sent Pete off on a family vacation, and to my disappointment as a mother, four days after he left, I decided to follow Pete to see that final.

We went to the finals, and when Pete came in at bat, a fastball was thrown that hit him right in the wrist.

oh pete

His wrist was completely loose like this

For the next six months, Pete returned to his home in Southey, continued his reluctant work, went to the doctor to see what had happened to his wrist, and was unable to return.

Six months later, in March, he called me and my husband and said, "Oh Mom, Dad, I need a doctor to diagnose this wrist.

Do you want to go with me to that doctor's office? ”

I said "yeah we're going too"

That morning, Pete John and I all got up, got dressed, and got into three separate cars, because we were going to see a doctor about his wrist, and then go to work.

We walked into the neurologist's office and sat down, and four doctors walked in and the chief specialist sat down and said,

"Pete, we have to say, judging by all the test results, this is not a sprain, it is not a fracture, it is not a nerve injury in your wrist, it is not an infection, it is not Lyme disease."

When I heard this roundabout elimination method, I thought to myself, What is the story going to be?

The doctor put his hands on his lap and looked straight into my 27-year-old's eyes and said, "I don't know how to tell you this to a 27-year-old, Pete, you have ALS."

ALS?

I had a friend who had an 80-year-old father with ALS.

My husband and I looked at each other, and then I turned to the doctor and said, "Is it ALS?

Okay, what's the cure? Let's do it

what are you doing let's do it"

The doctor looked at us and said, "Mr. Freights, I'm sorry to say this, but there is no cure at all."

we met the worst fate

It's been 75 years since Lou Gehrig was diagnosed with ALS, and we know nothing about ALS, and we haven't made any progress.

We flew home, Jen and Dan flew back from Wall Street, Andrew flew in from Charlestown, and Pete flew to Boston to pick up his then-girlfriend, Julie, and brought her home.

I don't remember what I made for dinner that night.

At the time, our leader, Pete, looked forward and talked like we were his new team.

He said, "People won't drown in their emotions anymore."

He continued, "We don't look back, we don't look ahead

What a great chance we gotta change the world

I'm trying to change the face of this unacceptable situation with ALS.

We want to tell philanthropists like Bill Gates that we move the needle about ALS."

This is exactly what I decided to do

In the months and days that followed, the story continues, and within a week, we had brothers, sisters, and family members come to us and Team Freights was formed.

Uncle Dave, the webmaster; Uncle Artie, the accountant; Aunt Dana, a graphic designer;

Classmates, teammates, co-workers, classmates, teammates, co-workers, inspired by Pete's entire life, all of Pete's peers began to interact with each other, and Team Freights was formed.

Six months after his diagnosis, Pete won an award at an advocacy research summit.

He gave a very eloquent speech, and at the end of that speech, there was a public debate, and that debate had pharmaceutical executives, biochemists, and clinicians.

I've avoided science classes as much as I can.

But I looked at these people and listened to what they were saying, and they were saying, "I will do this, I will do that."

And at the end of the debate, there was a question-and-answer session. "Hi."

Thank you for your commitment to ALS

It means a lot to us.”

"But there is something I must say.

I don't think there's enough collaboration here.

Not only that, but there were no policy explanations, progress checks, or action items.

What are you going to do after this meeting? ”

And I turned around and there were 200 eyes just on me.

It was at this point that I realized that I had brought up an issue that was being ignored.

That's where my mission began.

Over the next few years, Pete, no, we went through peaks and valleys.

Pete is on the Unapproved Drug Exceptions List.

It was a glimmer of hope for the entire ALS community.

In Phase 3 trials

After 6 months the data comes back - no effect

We were supposed to get treatment abroad, but our plans went awry.

For the next two years, little by little, every day, we just watched him leave us. We just watched him leave us.

Two and a half years ago, Pete was hitting a home run on the baseball field.

Pete's body is now completely paralyzed.

he can't even lift his head

attached to an electric wheelchair

I can no longer swallow or eat

I am eating from a tube

he can't speak

We speak using a line-of-sight transcription machine and a synthesized voice, and we're watching his lungs, because when his diaphragm finally stops moving, a decision will be made about whether or not to put him on a ventilator.

ALS deprives humans of the activity of all bodily organs, but leaves the brain intact.

July 4, 2014 75 years after Lou Gehrig's inspirational speech, Pete was asked to write an article for MLB.com's Bleacher Report.

It was very difficult for him, because he had to write it on a machine that transcribes with his eyes.

20 days later it started to ice

On July 27th, Pete's roommate in New York put on a Pat Quinn cheering t-shirt -- a famous ALS patient cheering shirt in New York -- and also wearing cheering shorts and said, "I'm going to do the ALS Ice Bucket Challenge."

"The next nominee is..." He even sent it to Boston.

It was July 27th

For the next few days, our newsfeeds were filled with family and friends.

If you can't access it, Facebook can conveniently return you to a specific date.

You'll see Uncle Artie's Human Bloody Mary

Let me tell you, it's one of the best images, and it was probably the second day.

By the fourth day or so, I got an email from the webmaster, Uncle Dave, who doesn't have Facebook, and said, "Nancy, what's going on?"

Every time Pete's website was accessed, Uncle Dave's cell phone rang.

When we all got together, we realized that the money was coming in -- it's amazing.

I thought that awareness would lead to funding, but I didn't expect it to go viral in just a few days.

So we all registered on Pete's website as a 501(c)(3) non-profit organization and waited.

Week 1 Boston Media

Second week Domestic media

During the second week, our neighbor opened the front door of our house, threw a pizza onto the kitchen floor, and said, "Maybe we need to eat here."

(Laughter) Week three, we went to Celeb Entertainment Tonight Hollywood.

Week 4 International Media - BBC Irish Radio Station

Have you seen "Lost in Translation"?

My husband saw it on Japanese TV

It was interesting

(Laughter) This video is famous.

It's a Paul Bissonette video, I can't believe it.

What about the Atonement of the Nuns of Dublin?

Has anyone seen it?

it's really great

J.T. Justin Timberlake

I knew then that I was really an A-class celebrity.

The email I received at that time was "JT! It's JT!"

Angela Merkel, Chancellor of Germany

i can't believe

And ALS patients. What's their favorite? Which is the family's favorite?

it's all

Patients just sat and watched as everyone repeated "ALS ALS" to this misunderstood, underfunded "rare" disease.

it was unbelievable

Let's talk a little bit about the results to those who are against anything.

Donations to the ALS Association are expected to reach $160 million by the end of the year.

ALS TDI in Cambridge raised $3 million.

What do you think?

There was a clinical trial of a drug that was in development.

I raised money for three years.

it's been 2 months

I've gathered this much in the first two months.

(Applause) YouTube reports that more than 150 countries have posted ALS ice bucket challenges.

2.5 million videos have been posted on Facebook.Last week, I had the rare experience of visiting the Facebook headquarters campus.Last week, I had the rare experience of visiting the Facebook headquarters campus.

I can't even imagine what's going on around here."

She only said, "I can't shut my mouth open."

Favorite video of our house?

Bill Gates

Because the night Pete was diagnosed, he said he wanted to tell philanthropists like Bill Gates about ALS, and that's exactly what happened.

first goal completed

I am currently undergoing treatment

(Applause) Yes, all of this ice has since become more than just ice water over your head. It's become more than just ice water over your head.

The first is that every morning when you wake up, you can decide to live your day positively.

If I sleep curled up like a fetus and try to hide under my sheets every day, who can blame me?

No, I don't think anyone can blame me, but Pete has encouraged us to wake up every morning and think positively and act.

I actually gave up on family meetings because everyone there was saying, "I got ALS because I was fertilizing the lawn," and I said, "I don't think so."

The second thing I want to tell you is that people who are in the midst of a challenge are willing to have the mental toughness to do it.

Pete still goes to baseball games and sits with his teammates on the bench, and puts the gastrostomy bag on the cage, and puts the gastrostomy bag on the cage.

You can see where I'm hanging

"Pete, is this okay?"

That's how they managed to get the tube food into his stomach.

He wanted his teammates to see reality, and that's how he never gives up.

The third thing I want to tell you is that if you find yourself in a situation that you don't accept, dig as deep as you can, find your beloved mama bear, and follow her.

(Applause) Thank you.

(Applause) I know I'm running out of time, but I have to tell you this: the gift my son gave me.

29 years of the honor I got the honor of being the mother of Pete Frates the honor of being the mother of Pete Frates

Pete Frates has inspired and guided his entire life.

All the compassion he's shown has come back to him.

He now walks the surface and knows why he's here.

what a gift

The second thing my son gave me is my life's mission.

now i know why i'm here

To help my son, and if I don't make it in time to help him, I'm going to work so that no other mother has to go through what I'm going through.

And the third, and last but not least, is the best thing my son gave me in that amazing month of August 2014. The girlfriend I was with the night I was diagnosed at the time is now his wife. And Pete and Julie gave me their grandson, Lucy F.

Lucy was surprisingly born two weeks early Lucy was surprisingly born two weeks early August 31, 2014

So -- (applause) -- I'll give you some of Pete's cheery words to his classmates, colleagues, and teammates.

be passionate

be smart

be diligent

and chase your dreams

Thank you. (Applause)

Imagine yourself as a soldier on the battlefield

Let's say you get shot in the leg and cut the femoral artery.

You can bleed profusely and die within three minutes.

Even if the medics were to arrive, it would take five minutes or more for the bleeding to stop if they applied pressure with their tourniquet to stop the bleeding.

This isn't just a battlefield problem, it's an important problem that we face all over the medical field.

For the last four years, I've been working on developing high-tech biomaterials that work with the body to help wounds heal naturally.

Before we talk about that, let's take a look at how the body works.

We all know that our bodies are made up of cells.

Cells are the most basic building blocks of living organisms.

Not many people know more

Cells are embedded in a complex web of fibers, proteins and sugars called the extracellular matrix (ECM).

The ECM supports cells and gives structure to tissues as well as a home for individual cells.

It helps cells know what they're doing, where they should be and how they should behave.

The ECM is different for each part of the body

The skin ECM is different than the liver ECM, and the ECM is different in different parts of the same organ, so it's very difficult to make a drug that reacts with the ECM, and that's what I'm working on.

Take the rainforest, for example.

A forest has a canopy, a shrub layer, and a forest floor.

Each part of the forest is made up of different plants and is home to different kinds of animals.

Similarly, ECM also has three-dimensional diversity.

In addition, the ECM is responsible for healing all wounds. If you cut anywhere on your body, this complex ECM needs to re-form. A scar is a poorly formed ECM.

What you're seeing now is an animation of the ECM.

There are cells in a complex mesh, and as they move through the tissue, the ECM changes.

Other technologies currently available commercially can only approximate the two-dimensional structure of the ECM, so they don't fit well with the tissue itself.

In my first year at New York University, I discovered that when you put a plant-based macromolecular substance on a wound, it assimilates into the wound.

As you can see in the video, when you apply this substance to a bleeding wound, it reassembles in your body tissue, like a Lego block.

So if you put it on your liver, it will look like your liver, and if you put it on your skin, it will look like your skin.

This gel is woven into the body tissue where it is applied.

There are so many applications for this technology, but the basic idea is that wherever you put it on your body, it instantly becomes like a part of that part.

This is a simulated arterial hemorrhage -- and it's a little provocative -- and it's pumping blood at twice the blood pressure of a human artery.

Bleeding like this is very dangerous, and as I said before, it can take five minutes or more to apply pressure to stop the bleeding.

But with our gel, while we were talking about bleeding, the bleeding stopped, because this gel works with the body's healing mechanisms, becomes a part of the body, detects it, and the blood produces fibrin, which clots within 10 seconds.

This technology is -- (Applause)

(Applause) We are working to have this technology available to vets by January next year, and hopefully to doctors within the next year.

Imagine being a soldier on the battlefield again

If you get shot in the leg, instead of bleeding for three minutes, you can take a small pack of gel from your belt and give it one push to stop the bleeding and get better.

thank you very much

(applause)

Global violent deaths could be reduced by 50% over the next 30 years

If we reduce homicides by 2.3% a year, we're likely to reach our goal.

can't believe it?

But some of the world's leading epidemiologists and criminologists believe that crime can be reduced, and I think so too.

I've been thinking a lot about this

For the last 20 years, I've worked in countries and cities that have been torn apart by conflict, by violence, by terrorism, by all these vicious entanglements.

I've tracked gun smugglers from Russia to Somalia, worked with militants in Afghanistan and Congo, and counted bodies in Colombia, Haiti, Sri Lanka and Papua New Guinea.

You don't have to go to the front lines to get a sense of how this planet is getting out of control, right?

I feel that international instability is becoming the norm.

But if you take a closer look, you'll find that the geography of violence has changed. There aren't many nations dominated by conflict and crime like those cities: Aleppo, Bamako, Caracas, Erbil, Mosul, Tripoli, Salvador.

Violence erupts in big cities

This is probably what you expected, right?

After all, the vast majority of people live in cities rather than in the countryside.

600 cities alone, including 30 of the largest cities, account for two-thirds of the world's GDP.

But when we talk about cities, we only talk about cities in the Northern Hemisphere, in North America, Western Europe, Australia, Japan, where violence is lower than ever before.

That's why people who love cities talk about the triumph of the city and the creative class, and how the mayor of the city should rule the world.

I'd love to have these mayors one day rule the world, but as you know, we don't really talk about what's happening in the Southern Hemisphere.

Violence is on the rise in some places, in Latin America, Africa and Asia, where infrastructure is strained and governance is sometimes desired in the first place.

Now, some diplomats, development experts, and others are referring to the 40-50 weaker nations in defining what security looks like in the 21st century.

I think cities with weak foundations are the key to the future order.

Because armed conflict and humanitarian action will be concentrated in these cities, and the search for development there will depend on whether or not we define it as poverty eradication in the slums and shanty towns, universal health coverage, and climate change prevention.

I'm going to talk about the four big risks that define instability in our time.

I will tell you from the good news

we live in the most peaceful time in human history

Stephen Pinker and others have shown that conflicts are becoming less intense and less frequent than ever before.

Gaza, Syria, Sudan and Ukraine are currently undergoing horrifying conflicts, but they are seen as a relatively small, temporary spike in a 50-year downward trend.

On top of that, murder is plummeting.

Manuel Eisner and others have shown that over the centuries, especially in the West, there has been an astonishing decline in murder.

Most cities in the northern hemisphere are 100 times safer than they were 100 years ago.

These two facts -- fewer armed conflicts and fewer homicides -- are two of the most remarkable, if by chance, human history achievements. Exciting, right?

should be excited

But there's one problem.

As you can see, 525,000 men and women, young and old, die each year from violence.

Studies I've done with Keith Krause and others have shown that between 50,000 and 60,000 people die from violence in conflict zones.

About 500,000 others were found dead elsewhere.

That means 10 times more people die outside conflict zones than in conflict zones.

Furthermore, the violence is moving south, into Latin America and the Caribbean, into parts of Central Africa and southern Africa, into parts of the Middle East and Central Asia.

Of the 50 most dangerous cities in the world, 40 are here in Latin America, 13 in Brazil, but the most dangerous is San Pedro Sula, Honduras' second largest city, with a high murder rate of 187 per 100,000 people.

This is 23 times the global average

Now, if violence were to be reconcentrated geographically, the map of the world would be rearranged, because when it comes to cities, like T. Friedman, the world is not flat.

It's bumpy

The predominance of urban-based people is historically the most peculiar demographic, and it all happened very quickly.

Do you know the specific numbers?

There are 7.3 billion people in the world today, and by 2050 there will be 9.6 billion people.

But let's consider the fact that in the 1800s, 1 in 30 people lived in a city, today, 1 in 2 people, and in the future, everyone will be living in a city.

The expansion of urbanization is neither even nor fair.

Most people, 90%, live in cities in the Southern Hemisphere.

Urban geographers and demographers say city size and density never predict violence.

Tokyo is one of the largest cities with a population of 35 million people, but is said to be the safest capital city in the world.

The problem is the speed of urbanization.

I call this phenomenon turbo-urbanization, and it's one of the main causes of infrastructure weakness.

If you think about the phenomenal expansion of cities, think of Karachi as a phenomenon of turbo-urbanization.

In 1947 Karachi was a bustling city of about half a million people.

Today, with 21 million people, it accounts for three-quarters of Pakistan's GDP, but it's also one of the most violent cities in South Asia.

Dhaka, Lagos and Kinshasa are 40 times larger than they were in the 1950s.

Take New York for example

It took 150 years to reach eight million people.

São Paulo and Mexico City took 15 years to reach the same population.

So what are medium cities, large cities, megacities, and hypercities?

What are the results of that analysis?

first of all young

Young people are growing in many cities

this is really good news

because of the decline in child mortality

But the growth of the younger population is something to watch out for.

What that fundamentally means is that there are far more young people living in cities with weak infrastructure than in cities that are strong and prosperous.

In one underdeveloped city, 75% of the population is under the age of 30.

Consider that 3 out of 4 people are under the age of 30.

It's like Palo Alto with muscle builders

In Mogadishu, for example, the average age is something like 16.

So are Dhaka, Dili and Kabul.

Are you in Tokyo? I am 46 years old

So do most cities in Western Europe.

Now, youth alone does not necessarily lead to violence.

It's one of many factors: youth combined with unemployment and lack of education, and crucially, being a man can kill you.

Statistically, all risk factors are correlated with youth and are associated with increased violence.

If you're a parent with a teenage son, you'll understand what I'm talking about, right?

Imagine your son not going to school or work and hanging out with bad boys.

They're pulling them away from their parents, depriving them of educational opportunities, sprinkling drugs and alcohol and guns where they've lost the chance to sit and watch fireworks.

I hate it just by imagining it

Life expectancy here in Brazil is 73.6 years

If you live in Rio de Janeiro, unfortunately, you'll be two years younger.

But if you're a young, uneducated, unemployed black man, life expectancy drops to under 60.

That's why youth and violence are the leading causes of death in this country.

But it's not all bleak prospects for cities.

Cities are at the heart of innovation, vitality, prosperity, excitement and connectivity.

It's also a place where smart people gather.

And young people are more digital and technologically savvy than ever before.

The expansion of the Internet and mobile phones has narrowed the international information gap between North and South and the gap within Japan.

But these new technologies are enough to give you calluses in your ears.

You've been told it's a double-edged sword, right?

Police around the world are beginning to use remote sensing and big data to predict crime.

Some police can predict violent crime before it happens.

Future crime scenarios are here and now, and they also require attention.

We have to weigh security issues against the right to privacy.

But police aren't the only ones evolving.

We've also heard of civic movements that are active locally and around the world, leading to media protests and real revolutions.

But of particular concern here are the criminal gangs that are going online and trying to dominate cyberspace.

In Ciudad Juarez, Mexico, where I work, organizations like the Zetas and the Sinaloa Cartel dominate social media.

They recruit members in the media, they sell their products, they pressure them, they threaten them, they kill them.

violence is going virtual

This is just one part of a fast-paced, dynamic and complex situation.

So there are many other megarisks that define the weaknesses of our modern infrastructure, especially income inequality, poverty, climate change, impunity.

But we face a clear dilemma: some cities are thriving and driving global growth, while others are sluggish and set back.

If we're going to change direction, we need to start a dialogue.

It is not possible to focus only on functioning cities such as Singapore, Kuala Lumpur, Dubai and Shanghai.

We need weaker cities to join the conversation.

We can do this by pairing weaker cities with healthier, more prosperous cities to encourage learning processes, collaboration, and sharing what worked and what didn't.

El Salvador and Los Angeles are great examples of this. The mayors of San Salvador and Los Angeles are working together to get former and current gangsters to work together, tutor and educate them.

We look not only at cities, but also at crime hot spots.

Basically, location plays a role in urban crime formation.

Even in cities with weak infrastructure, 99 percent of violent crimes occur in only 1-2 percent of addresses Did you know?

Take São Paulo, where I work, for example.

It went from being one of the most dangerous cities in Brazil to being one of the safest, with a focus on intelligence gathering, risk zone mapping, and police restructuring, which reduced homicides by 70 percent in 10 years.

Focus on dangerous people

Sadly, young, unemployed, out-of-school men are at higher risk of killing and being killed.

We try to break this chain of violence and find stability by nipping the bad buds when a child goes astray.

This is great work, in Kingston, Jamaica, here in Rio, where we've been involved in high-risk youth with education, employment, recreation, and as a result, violence in our communities has decreased.

Cities should be safer, more open and more livable.

unity is what matters

Urban mobility is important.

We have to get rid of racism, exclusion and city walls.

Medellin's remedy is my favorite

In the late 1990s, when I was in Colombia, Medellín was the death capital of the world, but it changed its policies and dared to inject tax dollars into low-income and violent areas, provide a network of cable cars for public transportation and better infrastructure, and integrate it with middle-class neighborhoods.In the process, it reduced homicides by 79 percent in less than 20 years.

And the last is technology

Technology is very promising, but it's also dangerous.

We've seen some amazing examples of innovation, and more will come from places like this, where police are doing predictive analytics.

Citizens crowdsource for new solutions

My group is also involved in developing apps to make police more accountable and to improve public safety.

but we have to proceed with caution

If I can tell you one thing, it's that deadly violence is never inevitable. Our cities can be made safer.

Ladies and gentlemen, let's cut violent murders in half in our lifetimes.

That's why I ask, "Are you still not acting?"

thank you

(applause)

this is a simple idea about nature

I haven't heard much about nature in the last few days, so I'd like to say something about nature.

I have something to say for the soil, the bees, the plants and the animals, and I'm going to talk about a very simple tool that I've found.

It's not a technology, it's just a literary idea.

I think it's a powerful tool for changing the relationship between humans and the natural world and other species on which we depend.

The tool, as Chris said, is very simple: to see us humans through the eyes of plants and animals.

It's not my idea, it's someone else's idea, but I'm trying to take it to a new position.

Where did you come up with this?

Like many of my ideas and tools, they came up in my garden, and I love gardening.

One day seven years ago, I was planting potatoes. It was the first week of May. In New England, the apple trees were just about to bloom, and there were white clouds in the sky.

I used to plant chopped potatoes here, and the bees were collecting nectar from this tree, and the bumblebee was shaking the tree.

One of the great things about gardening is that it doesn't require all of your human concentration, and unlike woodworking, you don't have as many injuries and you have a lot of mental space to think.

As I worked by the humble bee, I asked myself that afternoon, what do I and the humble bee have in common?

How similar and different are our roles in this garden?

And I realized that we had a lot in common, that each of us spread only certain genes, and each other -- imagine the bees' point of view, maybe -- they thought they were in control.

I decided for myself which kind of potato to plant. I chose Yukon Gold or Yellowfin or whatever, and I collected those genes from seed catalogs all over the country, and I took them home and planted them.

And that bee must have thought, too, to go to that flower on that apple tree, to suck the nectar and go home.

We have a philosophy that suggests that we are absolute sovereigns in nature, and so are the bees.

I will plant the potatoes, remove the weeds, acclimatize the seeds

But that day it occurred to me that maybe this idea is just a selfish idea?

Of course the bees think they're in charge, but we're wise,

I know very well that the relationship between the bee and the flower is that the bee is skillfully manipulated by the flower.

Manipulated in a Darvin sense, you know?

So the flower developed very specific traits that seduced its bees with its colors, smells, tastes and patterns.

And the bee is brilliantly tricked into sucking the nectar, putting the pollen on its feet, and flying off to the next flower.

Bees don't divide anything

That's when I realized that I was, in fact, the same.

I was seduced by that very potato, and I planted it, spread the genes, and expanded the habitat a little bit.

So I thought, what if we could look at ourselves through the eyes of these other species that are working with humans?

And suddenly I realized that agriculture was not a human art or invention, but an evolutionary co-development of a group of very clever species, mostly edible grasses, designed to exploit humans and deplete the world's forests.

It's called the "Plant Race"

suddenly everything looks different

Mowing the grass that day was a completely different experience.

Before that, I always thought, and I actually wrote this in my first book, which is about gardening, but the lawn is a culturally suppressed nature, a totalitarian landscape, and every time we mow it, we brutally suppress it so that it doesn't bear fruit, it doesn't die, it doesn't reproduce.

That's what grass is

But then I realized, "No, this is what grass wants.

What an idiot, Kusa's purpose in life is to knock down the trees that take the sunlight away from her.

The point is, we have humans cut the trees so they don't grow back.

Then I started looking at things from the plant's point of view, and I put it all together in a book called "The Botany of Desire."

And I thought, by looking at flowers, the tastes and desires of honeybees, for example, they like sweets, they like this color, they don't like that color, and they like symmetry.

Some kind of potato, some kind of drug What does cannabis think of us

I thought this might be an interesting way of looking at the world.

Now, no matter what idea we try, there's also the question of what do we get, even if it's a quirky one.

And how do I meet the Aldo Leopold test when I talk about nature, my subject as a writer?

That is, can we be better members of the biocommunity?

Does it make us contribute to the maintenance and perpetuity of the ecology rather than its ruin?

I think this idea would

So let's see what benefits you can get from looking at the world this way, other than interesting insights into human needs.

As an intellectual matter, seeing the world from other perspectives can teach us how to deal with strange anomalies, which -- and this is the field of cultural history -- 150 years ago there was the Darwinian Revolution.

Wow, mini-me, thanks to this intelligent Darwinian revolution, we've learned that we're just one species among many, and the evolution that's happening to us is happening on all other species as well. We act and are acted upon.

But oddly enough, 150 years later, this lesson hasn't caught on, and no one really believes it.

We are still Cartesians, Cartesian children. We believe that subjectivity and consciousness make us special beings, and that the world is divided into subjects and objects, with nature on one side and culture on the other.

It's only when you look at it from the perspective of plants and animals that you realize that the real queer idea is the idea that nature is at odds with culture, the idea that consciousness is everything.

Seeing the world through the eyes of other organisms is a cure for the disease of human-centered society.

You suddenly realize that human consciousness, which we consider to be nature's crowning achievement, is just a tool for navigating the planet.

In a way, it's only natural to think that it's the best tool.

As one comedian said, "So who the hell is going to say that consciousness is such an important and wonderful thing?"

"It's consciousness"

If you look at plants, you'll find that they're just as interesting in different tools.

I'll give you two examples, also from the garden. You know what lye beans do when they're attacked by spider mites?

It emits a wide range of volatile chemicals that attack spider mites and attract other mites to protect the lye beans.

While humans have consciousness, tool making, language, etc., plants have biochemistry.

It has reached a level beyond our imagination.

The complexity and sophistication of plants, it's just amazing, and I started out thinking that humans have 40,000 or 50,000 genes.

I think it's a complete scandal that the Human Genome Project ended up with only 23,000 results.

To give you a basis for comparison, rice has 35,000 genes.

So which species is more sophisticated?

the answer is both

We've evolved together over the same period, just on different paths.

So it's both a self-centered remedy and a way of realizing Darwinian thinking.

So that's what I do as a writer, as a storyteller, to tell stories that make people feel what we know and make them think about environmental consciousness.

Another example is very practical

I'm going to take you on a farm, and I've used this idea to understand the food system better, and what I've learned is that we're being controlled by corn right now.

The story of ethanol that you've all heard today is corn's ultimate victory over decency.

(Laughter) And there will be far more corn planted this year than last year, and more corn will grow because we've made ethanol a savior.

For me, this helped me understand the agricultural industry, which, of course, is Cartesian.

It's based on the concept of using other species, we're the sovereigns, we're the ones who build the factories, and we take these technologies and we produce food, we produce fuel, we create whatever we want.

Let us take you to a quirky farm

This farm is located in Virginia's Shenandoah Valley

I went looking for a farm that actually took the idea of ​​looking through the eyes of other species, and I met a farmer named Jor Saracin.

I worked as an apprentice on his farm for about a week, and I got the most promising information about our relationship with nature in my 25 years of writing about nature.

This is it, on a farm called Pollyface.

The idea is to grow six kinds of animals and some plants in very clever, symbolic arrangements.

You say permaculture, but in his case cows, pigs, sheep, turkeys and. . .

What else did you do? . .

All six species -- yes, rabbits -- all perform ecological services for each other, such as one animal's droppings being lunch for another, or treating each other's pests.

It's a very intricate and beautiful sequence, but I'm going to show you a close-up of just one part of it: the relationship between cows and laying hens.

This goes beyond just growing food

It's a way to change the way we think about nature, a Cartesian zero-sum game theory, that frees us from the idea that if we get what we want, then nature disappears, and whether nature wins or humans win.

Now leave the cow in the pen for a day

The only technology we have here is this cheap, fairly new electric fence connected to a car battery that I can build in 15 minutes walking across a 1,000 square meter farm.

cows eat for a day and move again

eats all grass intensively

I'll wait about three days, and then I'll pull something called an egg mobile.

It's a strange, fragile device, like a carriage made out of planks, but it can hold 350 chickens.

After three days, you'd pull it out to the farm, and you'd put down the board, and you'd see a flock of 350 chickens running wild across the board, clucking down the board, and heading straight for the cow dung.

What happens after that is interesting. They dig up cow dung and look for fly larvae such as maggots.

The reason I waited three days was because after four or five days, the larvae would have hatched, and then I would have been plagued by flies.

But they wait until they're big, juicy larvae, because they're protein-rich and they're a chicken's favorite food.

Chickens do breakdance-like movements to dig out maggots, pecking their dung and throwing tons of manure.

very convenient. that is the second ecological service

And third, of course, while the chickens are on the farm, they're defecating like crazy, and their manure is also nitrogen fertilizer, which nourishes the grassland.

Then move on to the next place After 3 weeks it's overgrown with grass Within 4-5 weeks

repeat again

He can also graze, mow, use other animals like sheep, or make hay for the winter.

Now think about what happened on this farm.

It's a very productive system.

This mere 404,700 sq m produces 18,181 kg of beef, 13,636 kg of pork, 25,000 dozen eggs, 20,000 chickens, 1,000 turkeys and 1,000 rabbits.

“Can the world eat only organic food?”

I'm sure you've heard this before, but it's possible to produce this much on this much land.

It just gives each species what they want and makes them aware of their desires and their physiological peculiarities.

make use of it

Now let's look at it from the grass's point of view.

What will happen to the grass when I do this?

When ruminants eat grass, they cut leaves from this height to this height.

Anyone who gardens knows the ratio of roots to shoots. For a plant to thrive, it has to keep its roots and leaves in balance.

Therefore, when the number of leaves decreases, the roots also become smaller.

As the roots die, organisms in the soil such as earthworms, fungi, and bacteria eat the roots and decompose them into new soil.

Soil is made like this

from bottom to top

And the prairies were created in this way, with the relationship between the oxen and the grass.

What I realized after realizing this -- and if I asked Joel Saracin what he grows, he'd say that he doesn't grow chickens, he doesn't grow sheep, he doesn't grow cows, he grows grass, because grass is the keystone organism in these systems -- and what I realize is that it's completely at odds with our miserable idea of ​​nature.

Human victory, nature's defeat

You get all this food from this farm, and at the end of the season, there's more soil, more fertility, more biodiversity.

this is very hopeful

Many farmers today are adopting this method.

This is much better than the somewhat Cartesian system of organic farming.

What this shows is that if we pay attention to other species and soils, with just this perspective idea -- no technology other than this fence, it's cheap, it could spread quickly in Africa -- we can get the food we need from the planet, and we can heal the planet.

This is how we bring the world back to life

And when you start to feel Darwin's insight in your bones, it's the kind of things that can only be achieved with these ideas that are worth hoping for.

thank you

Sight is the most important sense and the highest priority of the five senses.

We are constantly looking at the world around us, quickly perceiving it, and understanding what we see.

Let's start with an example

I'm going to show you a picture of a person, in just a few seconds.

May I?

please answer intuitively

what did he look like?

In our survey, we looked at over 120 people, and we got a lot of different answers.

The facial expressions felt by people varied.

"Unpleasant"

this was the most common answer

But if you ask the person on your left, they might say "regret" or "doubt," but if you ask the person on your right, they might say something completely different, like "hope" or "sympathy."

we see the exact same face

But it feels completely different, because perception is subjective.

When we see something, we're actually filtering through the mind's eye.

Of course, the examples are endless, but here are some examples of how we see the world through our mind's eyes.

let me introduce a little more

Dieters perceive apples to be larger than nondietists.

A softball player who's just coming out of a slump may feel the ball is smaller than a player who has a good batting average.

Political ideology also influences how people see you, and how politicians see you.

That's what my research team did

When Barack Obama first ran for president in 2008, he polled hundreds of Americans a month before the election.

As a result, one American thinks these photos are the most Obama-like.

75% of these people voted for Obama in the election.

But others thought these photos were the most Obama-like.

89% of those people voted for McCain.

We were shown a bunch of photos of Obama, one by one, and, unbeknownst to the viewers, each photo changed the color of Obama's skin, lightened or darkened it.

What's going on?

When you look at a person, when you look at an object or an event, why do people see things differently?

There are many reasons, but the important thing is to know how our eyes work.

Visual scientists believe that the amount of information we receive at any given point in time is relatively small.

Very sharply, clearly, precisely, you can see the surface area of ​​one thumb with your outstretched arm.

Everything else is blurry, which means that we see most of what we're presented with vaguely.

But we have to clarify and understand what we're seeing, and it's our minds that fill that gap.

As a result, perception is subjective, and you see things through your mind's eye.

As a social psychologist, questions like this are very interesting to me.

What intrigues me is when opinions diverge.

Why do some people think the glass is half full and others think it is half empty?

What does it mean that what one person thinks and feels is understood in a completely different way by another person?

And does it matter?

As a first step toward addressing this question, I decided that my research team and I would look into two issues of global concern: health and exercise.

People all over the world struggle with weight management, and we use a variety of methods to keep it off.

For example, you decide to exercise after the holidays, but the vast majority of Americans give up on keeping their New Year's resolutions by Valentine's Day.

We encourage them to get back in shape this year, but that's not going to be enough to get them back to their ideal weight.

Then why?

Of course, there are no simple answers, but I think it's our mind's eye that holds us back.

Some people find it harder than others to exercise, some find it easier than others

So the first step in testing this question was to measure each individual's objective physical condition.

Measurement item is the ratio of waist circumference to hip circumference

People with a higher waist-to-hip ratio are less healthy than those with a lower ratio

After the measurement, the subjects were asked to put on weights and compete in walking to the finish line.

But before that, we asked the subjects to guess the distance to the goal.

We thought that physical condition affected the distance we estimated.

what i found out

that the waist/hip ratio predicts the estimated distance

People who were out of shape and unhealthy felt the distance to the goal was much further than those who were in good shape.

The state of your body affects how you feel about your surroundings.

But your state of mind also plays a role.

In fact, our bodies and minds work together to influence the way we see the world.

This idea led me to wonder if people with strong motivation and strong exercise goals felt closer to their goals than those with low motivation.

So we conducted a second study to test whether motivation influences perception.

We performed a waist circumference measurement, a hip circumference measurement, and several other physical fitness tests to provide an objective measure of physical condition.

Based on the results that we shared with our subjects, some of them said they weren't willing to do any more exercise.

They've already achieved their desired health and are unwilling to do anything more.

they are unmotivated

But other subjects were more motivated to exercise when they were told the results.

they have a strong goal to reach

We asked them to guess the distance before they walked to the goal again.

What is the distance to the goal?

Also, as in the previous study, we found that the waist-to-hip ratio predicts distance perception.

Unhealthy people felt the distance to the goal was farther than healthy people.

But importantly, this result only applies to people with low motivation to exercise.

In contrast, those who were more motivated to exercise felt the distance was shorter.

Even the most unhealthy subjects felt just as close, if not closer, to the goal than healthy subjects.

In other words, the state of your body changes how you perceive the distance to your goal, but people who are working on a near-term goal, and who believe they can achieve it, feel more comfortable exercising.

This led us to wonder if there was a teaching method that would change how we perceive distance and make exercise seem easier.

So we looked into the vision science literature and thought about what to do, and based on what we learned, we came up with a strategy we called "Keep your eye on the target."

This is not an inspirational poster slogan.

It's a practical guide to how to make sense of your surroundings.

For those who have trained with this strategy, we told them to focus on the goal, not to look away, to imagine the goal shining in the spotlight, and to see everything around them blurry.

We thought it would seem easier to exercise with this strategy.

We compared the group using this strategy with the reference group.

I told the reference group to look around as usual.

You'll notice the goal, but you'll also notice other things, like the trash can on the right, the people on the left, the street lights.

We thought that this group of people would feel the distance.

what about the result?

When subjects guessed distance, did this strategy succeed in altering their perceptual experience?

The answer is "success"

Subjects who focused on their goal perceived their goal nearly 30 percent more than subjects who walked around looking around as usual.

i think this result is great

We were very excited because this strategy would help us feel easier when exercising, but the big question is, does this strategy actually help us exercise better?

Could this strategy improve the quality of exercise?

So the next thing we asked the subjects to do was to have an extra weight attached to them as they walked to the finish line.

Each subject had a weight of 15% of their body weight attached to their ankles.

I instructed them to raise their knees high and walk quickly to the finish line.

What we've planned is a slightly more difficult, but not impossible, general fitness exercise.

So the big question is, does focusing on the goal and focusing only on the goal change how we perceive exercise?

The answer was "weird"

Subjects who kept their eyes on the target all the time said they could do this exercise with 17 percent less effort than those who looked around.

This strategy changed their subjective perception of exercise.

Also, objectively, the nature of exercise has changed.

People who stared at the target moved 23% faster than those who looked around.

A 23 percent improvement is like turning a 1980 Chevrolet Citasion into a 1980 Chevrolet Corvette.

I was very excited about the results, because this strategy was cheap, easy to use, and had great results, whether you were in good or bad physical condition.

By always looking at your goal, you find it easier to exercise, and even when you're doing more intense exercise, you find it easier because you're moving faster.

It turns out that more than just walking a little faster for good health, keeping an eye on your goals can help you adopt a healthier lifestyle.

If you're still not convinced that we see the world through the eyes of our minds, see the last example.

Here's a picture of two cars parked on a beautiful street in Stockholm.

The car behind looks much bigger than the car in front

But in reality, the two cars are the same size, but it doesn't look like it.

Is this a mess of our eyes and a mess of our heads?

no it's not

our eyes are made like this

We see the world differently, and sometimes it doesn't line up with reality, but that doesn't mean that someone is right and someone is wrong.

We see the world through the eyes of our minds, but we can change the way we see it.

Think about the days when nothing works

Fed up, frustrated, tired, so much work piled up and a huge dark cloud hovering in my head, on days like these, everyone around me looks depressed.

My co-workers look annoyed when I ask for an extension of my deadline My friends look annoyed when meetings drag on and I'm late for an appointment at lunch My husband looks disappointed at me who would rather sleep than go to the movies at the end of the day

On days when everyone seems frustrated and angry with me, I tell myself I have a different point of view.

Maybe your colleague was confused, your friend was worried, your husband understood, and so on.

We see the world through the eyes of our minds, and at times the world may seem dangerous, nasty, and hopeless, but that's not always the case.

We can change our perspectives, and if we find ways to make the world look nicer and more comfortable, it can become a reality.

thank you

(applause)

i am an ethnobotanist

I'm a scientist who studies how people in the rainforest use plants.

I've been doing this for a long time, but let's face it -- they know more about the forests and the precious medicines in the forests than we can ever come close.

At the same time, their indigenous culture is disappearing faster than the forest itself.

It's not the jaguar or the harpy eagle that's most endangered in the Amazon rainforest, but the isolated, uncontacted tribe.

Four years ago, I injured my leg in a mountain climbing accident and went to the doctor.

Doctors used heat, cold, aspirin, narcotic analgesics, anti-inflammatory drugs, cortisone injections.

it didn't work

A few months later, as I walked into a village in the northeastern part of the Amazon, the shaman said, "You're limping."

I will never forget this moment

He looked into my face and said, "Take off your shoes and give me that machete."

(Laughter) He walked to a palm tree, cut a fern, put it on the fire, put it on my leg, put it in a pot, and made me drink the tea.

Seven months later, the pain was gone.

It started hurting again so I went to him again

He did the same thing, and I've been pain free for three years.

Who would you like to treat?

(Applause) And don't get me wrong, Western medicine is the most successful way to treat disease, but it's also full of holes.

what about breast cancer?

What about schizophrenia?

What is acid reflux?

What about insomnia?

In many cases, the people of the Amazon can fix what we can't fix.

A witch doctor in the northeastern Amazon is treating leishmaniasis, a nasty protozoan disease that afflicts 12 million people worldwide.

Western medicine uses injections of antimony.

It's painful, it's expensive, it's a heavy metal, and it's probably not good for your heart.

This man treats himself with three plants from the Amazon rainforest.

this is a magic frog

My colleague, the late Lauren McIntyre, who discovered Lake McIntyre, the headwaters of the Amazon in the Peruvian Andes, lost his way 30 years ago near the Peruvian-Brazilian border.

He was rescued by an isolated Indian tribe called the Matzeh.

They invited him to follow him through the woods and he did so.

they brought a basket of palm leaves

I took a giant cat's toad out of it, this big frog, and I started licking it.

It has strong hallucinogenic properties.

His story about that moment caught the eye of the editor of the cannabis magazine High Times.

Ethnobotanists are surrounded by people of many different lineages.

The editor decided to go to Amazon to give it a shot — or a lick — of the experience he wrote, "My blood pressure hit the ceiling and I lost control of my body. I fell flat. Six hours later, I woke up in a hammock. For the next two days, I felt like a god."

(Laughter) An Italian chemist read this and thought, "I'm not interested in the theological aspects of giant cat frogs.

What does this change in blood pressure mean? ”

The chemist is working with giant cat toad skin peptides to create new drugs to treat high blood pressure, while another is trying to find a way to combat drug-resistant Staphylococcus aureus.

It would be ironic if this isolated tribe of Indians and a magical frog turned out to be the answer to the cure.

This is an Ayahuasca shaman in the northwestern part of the Amazon performing a ritual to Ya.

I took him to Los Angeles to meet the director of a foundation so that they could get funding to protect their culture.

The man who saw Sherman said, "You didn't go to medical school, did you?"

"I'm not going," said Sherman

"So what do we know about treatment?"

Sherman looked at him and said, "If you have an epidemic, go see a doctor.

But most of human afflictions are diseases of the heart and soul.

Western medicine is useless in that regard, and I am the one who heals it.”

(Applause) Learning new medicines from nature isn't all rosy.

This is a Brazilian venomous snake whose venom has been studied here at the University of São Paulo, Brazil.

ACE inhibitors were later developed from that venom.

First-line treatment for high blood pressure

Hypertension accounts for more than 10% of deaths

This $4 billion industry is powered by Brazilian snake venom, but Brazilians aren't getting a penny.

This is not an acceptable way of doing business.

Rainforests are said to be the highest expression of life on earth.

One of my favorite Surinamese sayings is, "The rainforest holds answers to questions we haven't asked yet."

But as you know, rainforests are rapidly disappearing.

Here in Brazil, in the Amazon, in the world

This is a picture I took from a small plane, and from here is the eastern border of the Xingu National Reserve in the province of Mato Grosso, to the northwest.

The upper half is where the Indians live.

The line in the middle is the eastern boundary of the reserve.

The top half is Indian, the bottom half is white.

The top half brings wonder potions, the bottom half is just skinny cows

In the top half, carbon creates forests, and in the bottom half, carbon is released into the atmosphere, causing global warming.

In fact, deforestation is the second largest source of carbon released into the atmosphere.

When we talk about environmental destruction, let's not forget the unparalleled splendor of the Amazon.

The Amazon is a land of beauty and wonder

The world's largest anteater lives in this rainforest and can weigh up to 40 kilograms.

The rubron horn spider is the largest spider in the world.

It also lives in the Amazon

The Harpy Eagle has a wingspan of over two meters.

And black caiman, this monster can weigh up to 500 kilos.

known as the man-eating crocodile

The anaconda is the world's largest snake, the capybara is the world's largest rodent.

Here in Brazil, we have a capybara specimen that weighs 91 kilograms.

Let's turn our attention to the land of the Akrio people, the northeastern part of the Amazon, where these creatures live.

Uncontacted tribes have a mysterious and symbolic role in our imagination.

I know nature better than anyone

live in perfect harmony with nature

Some would call them primitive by our standards.

"They don't know how to make fire." "They didn't know until they came into contact with modern civilization."

But they know the forest far better than we do.

The Akrio have 35 words for "honey," and are viewed by other Indians as the true masters of this jungle land.

this is my friend ponay

When I was a teenager obsessed with the Rolling Stones of New Orleans, Poney was a woodland wanderer who roamed the jungles of the northeastern Amazon in small groups, chasing prey, foraging for medicinal herbs, and trying to find a wife among other wandering groups.

It's people like these who know what we don't know and who teach us a lot of lessons.

But much of the Amazon forest doesn't have these indigenous peoples.

All that's left is this: carved rock marks used by uncontacted indigenous peoples to sharpen stone axes.

The cultures that once danced and loved and sang gods and worshiped forests are gone, leaving only traces carved into the rock.

Let's look at the western part of the Amazon, the epicenter of isolated tribes.

Each of these dots represents a small uncontacted tribe, and there are estimated to be 14 or 15 isolated groups in the Colombian Amazon alone.

why are they isolated?

They know we exist, they know there's a world out there.

this is their resistance

They chose to be isolated, and I think they have a right to remain that way as human beings.

Why are they hiding from the rest of humanity?

the reason is this

Part of it started in 1492.

The rubber trade at the turn of the 20th century was a big factor.

Demand for natural rubber from the Amazon has led to a botanical version of the gold rush.

Rubber for bicycle tires Rubber for automobile ties Rubber for Zeppelin

There was a mad race to get the rubber, and Julio Arana, here on the left, is one of the most brutal villains.

This man's company and other companies murdered and slaughtered and tortured and murdered Indians, like the Uitoto man on the right.

Even today, people who come out of the forest rarely get a happy ending.

This is the Nukak tribe, they were exposed to modern civilization in the 80's.

Within a year, everyone over the age of 40 died.

Remember they don't have letters

elders are their library

A shaman dying is like a library burning down.

they were displaced

Dispossessed of their land by drug traffickers, the Nukuk people live as beggars in the parks of Eastern Colombia.

Let's move on to one of the most spectacular places in the world, southwest of the land of Nukuk, is Chiribiquete National Park.

It was surrounded by three isolated tribes, but thanks to the Colombian government and my colleagues in Colombia, it was expanded.

It's bigger than Maryland.

A treasure trove of plant diversity

It was my teacher, Richard Schultes, who first surveyed the plants in this area in 1943, and here he is at the top of Bell Mountain, the sacred mountain of the Calihona Nation.

Let's see what this place looks like today

As you fly over Chiribiquete, you can see that the mountains of this lost world are still missing.

No scientist has climbed these mountains.

No one has climbed Bell Mountain since Schultes did it in 1943.

We've made it to Bell Mountain, which you can see on the right side of the video.

how it is today

It's not only a treasure trove of botanical diversity, it's not only home to three isolated tribes, it's also the world's largest treasure trove of pre-Columbian paintings, with more than 200,000 paintings.

Dutch scientist Thomas van der Hamen described it as "the Sistine Chapel in the Amazon rainforest."

Let's look southeast of Chiriviquete, again in the Colombian Amazon.

The Columbia Amazon is wider than New England.

The Amazon is a big forest, and Brazil is a big part of it, but not all of it.

There are two national parks, Kahuinari and Pre, within the Colombian Amazon on the right, on the border with Brazil.

If you look closely, you can see the cultural diversity in the shape of the roofs of these dwellings, called morokas.

this is another tribe

It's an isolated area, but it's filled with people from the outside world.

In Putumayo, trade and transportation are increasing.

With the end of the civil war in Colombia, people began to come in from outside.

Illegal gold miners are coming in from the north or the Brazilian side of the east.

Commercial hunting and fishing are on the rise.

Illegal loggers are coming from the south, drug traffickers are going through the park to Brazil.

That's why people didn't get involved with isolated Indians in the past.

This picture is out of focus because I had to take it in a hurry.

(Laughter) It's like -- (Applause) it looks like a picture of a hangar in the Brazilian Amazon.

This photo was actually taken at an exhibition in Havana, Cuba.

Expressed reasons why we should not interfere with uncontacted Indians.

It's from a group called Los Carpinteros.

but the world is changing

This is the Máxico Piro tribe on the Brazilian-Peruvian border, who wandered out of the jungle after being driven out by drug traffickers and loggers.

In Peru it's called a "human safari"

Disgusting business is going on

They take tourists to isolated tribes and take pictures with them.

As you give them clothes and tools, you also bring them disease.

I call it "Inhumane Safari"

This is another photo of the Indians near the Peruvian border, taken by a missionary plane.

I'm telling you to convert them to Christianity.

You know what that will lead to

what should we do?

It's about avoiding interference with uncontacted tribes and handing technology over to tribes that are in contact with modern civilization in a culturally sensitive way.

This is the ideal marriage of ancient shamanic wisdom and 21st century technology.

We're doing this for more than 30 tribes, mapping, managing and protecting 300,000 square kilometers of ancestral rainforest.

(Applause) In this way, Indians can decide the fate of their environment and their culture.

We've also built a lookout to keep outsiders out.

Indians trained as park rangers patrol the perimeter to keep the outside world out.

This is the actual contact scene

I'm a Chitonawa tribe on the border of Brazil and Peru.

I came out of the jungle looking for help

they were attacked with guns and their houses were burned

some were slaughtered

The use of machine guns to slaughter uncontacted tribesmen is one of the most disgusting and inhumane acts on earth today and must be stopped at all costs.

(Applause) This work is mentally rewarding, but it's also difficult and dangerous.

Two colleagues recently died in a small plane crash.

They worked in the forest to protect uncontacted tribes.

The question is, what kind of future awaits us?

This is the Yola tribe in Brazil.

The future that awaits them What is the future that awaits us?

let's think differently

let's build a better world

If the climate changes, let's change it for the better, not the worse

Let us live on a planet overgrown with vegetation, Let isolated peoples remain isolated and preserve their mysteries and knowledge, if they so wish.

Let's live in a world where a shaman who lives in the woods heals everyone with magical plants and sacred frogs.

thank you

(applause)

I'm going to start with the story of a woman named Mary who lives in a village in Africa.

Her first memory is of her family fleeing a riot orchestrated by the ruling party.

Her brother was murdered by militiamen simply because she belonged to a different party, and she herself was raped multiple times.

One morning, a month before the election, the people of Mary's village were summoned to another scare rally.

At this rally, a man would stand in front of people and say, "I know who you are and who you voted for. If you don't vote right, you're going to be in trouble."

But this time Merry is different than usual

it felt different

She had been looking forward to this rally, and she had a little hidden camera hidden in her clothes that no one noticed.

Filming of this rally is prohibited.

I would risk my life if I tried to take a picture.

Mary knew the danger, but to stop this and protect herself and her villagers, she had to expose this threat and break their peace by showing them that there were people pursuing them.

For a month, Mary and her friends secretly filmed the threat rallies held by the ruling party.

[Hidden camera footage] We're talking about the upcoming election.

nothing can stop us from wanting

If there is someone on the other side, I will show no mercy.

[Intimidating rally by militia] The party can hurt you at any time.

young guys beat you up

[Political rally chaos] If you lie when you say you support the party, think it's over.

[Party Youth Militia] Some died in rebellion

some lost their homes

If you don't follow the party, what awaits you is a miserable life.

This footage was shown all over the world, but more importantly, it was shown locally.

I got to see those people who were threatening me.

They were afraid to find someone pursuing them.

It's no longer safe

Mellie and her friends saved hundreds of lives by keeping the ruling party from resorting to violence in elections.

Mary is one of hundreds of activists our organization has helped to combat human rights abuses on camera.

My career originally took a completely different path.

I was born into a conservative Israeli family, and for as long as I can remember, I've wanted to join the Israeli army, serve my country, and prove my claim to the land of Israel.

I joined the military shortly after the first Intifada (the Palestinian resistance), and I was in the toughest, toughest, most aggressive infantry unit, and I had the biggest gun in my platoon.

I soon became an officer, leading a unit, and then I was posted to the West Bank, and I started seeing scenes like this.

It's a sight I don't want to see

I endured it for a while, but in the end I refused to work in the West Bank and was put in a brig.

This is -- (Applause) It's not as bad as it looks.

It's like a hotel, just bad food

(Laughter) In the brig, I kept thinking I should let everyone know.

We have to let them know what the reality of the West Bank is like.

I needed to tell people what I had seen and heard, but I also felt that the Palestinian people themselves needed to tell their stories, not journalists and filmmakers who came from the outside.

I joined an Israeli human rights organization called Betzelem.

We searched the West Bank and picked 100 families who live in the most dangerous areas: those who live near checkpoints, Israeli military bases, and those who live next door to Israeli settlers.

I gave them cameras and taught them how to use them.

Very disturbing footage of violence by settlers and soldiers soon began to accumulate.

I'm going to show you two video clips of this project.

Both aired in Israel and caused a lot of controversy.

I apologize in advance that this is a very violent video.

The masked men in the first footage are Jewish settlers.

Minutes before I turned the camera on, they came to a Palestinian family who was working in the fields and told them to leave because the land belonged to Jewish settlers.

Palestinians refused

so let's see what happened

The approaching masked men are Jewish settlers.

I'm getting closer to a Palestinian family.

This is a scene from a demonstration in the West Bank.

The man in green is Palestinian.

he will be arrested soon

Blindfolded and handcuffed

Soon after this, he would regret coming to the demonstration.

I got hit in the leg with a rubber bullet.

There is no sign of life

Not all settlers and soldiers behave this way.

We need fair justice, just what some people do.

These footages compelled the military and police to investigate.

Of course, it was also aired in Israel, where it was seen by the general public.

This project has forced a rethinking of human rights issues in the occupied territories, and has helped reduce violence in the West Bank.

The success of this project made me wonder if the same method could be used in other parts of the world.

You might think that today, thanks to technology like smartphones and the Internet, we can see and know what's going on in every corner of the world, and everyone can tell us about it.

Even today, less than half of the world's population has access to the Internet, three billion people in the world -- and again, three billion people in the world can only watch news that has been censored by those in power.

Around that time, I got a call from a wonderful person named Uri Frutzmann.

he is a filmmaker and activist

We realized that we had similar thoughts, so we decided to start an organization called Videre together.

During the time I started this organization in London, I secretly traveled to areas where there was mass violence and abuse and it was unreported.

and i was wondering how i can help

I learned four things

First, the need to reach out to remote communities, where violence goes on behind the scenes.

We need to work with them to understand what's not being communicated and help them document it.

The second thing we learned is that we need to make sure they're safe to shoot.

Safety must come first

In the West Bank, where I used to work, you wouldn't get shot for pulling out a camera, but in the areas where we want to work, pulling out your phone can literally kill you.

That's why we keep our activities private and use hidden cameras when necessary.

Unfortunately, of course, I can't show you the hidden camera that we're using now, but this is the hidden camera that we used back in the day.

what you can buy at the store

Now we build our own hidden cameras, including the one Mary used to hide under her clothes when she filmed the ruling party's rally.

It blends in so well with its environment that no one notices it.

Ensuring safety goes beyond the use of hidden cameras.

Safety measures began long before activists turned on their cameras.

To protect our collaborators, we pre-plan every location and risk of filming, have alternatives in place if something goes wrong, and make sure everything is ready before the operation begins.

The third thing I learned is the importance of validation.

Even if you have a good picture of atrocities, if you can't verify it, it's worthless.

Recently, there were some purported images of Syria and the Gaza Strip, but they were shot in a different conflict.

Such misinformation undermines the credibility of the source and undermines the credibility of other credible sources.

We go to great lengths to make sure our information is reliable and reliable.

We start by finding out who the collaborators are themselves, and we work closely with them.

how to shoot

I'll ask you to take a picture of a street sign, a watch, a newspaper.

We look at the map, we double check the information, we look at the image metadata.

The fourth thing I learned, and the most important one, is how to use video to bring about positive change.

The key to being effective is how you use the footage you get.

We're working with hundreds of activists who are covertly filming.

What's the situation on the ground? What footage is missing to convey that? Who's influencing the situation?

Sometimes it's run on local media to get people's attention.

Sometimes we work with politicians to change laws.

We also work with lawyers to use it as evidence in court.

But the most effective way to create social change is working within communities.

I would like to show you one example.

Fatima is part of a women's network fighting rights abuses in Kenya.

In her community, women are constantly being harassed on their way to school or work.

They're trying to change the community from within.

In the video I'm going to show you, Fatima shows you what it's like to go to work.

Her hidden camera footage is overlaid with her own audio commentary.

I am Fatima Chiusik

32 years old Mother Lives in Jiwa La Ngoombe

I take the number 11 minibus every morning.

But I can't go to work in peace, and every day starts with fear.

come with me feel how i feel through my eyes

As I walk, I'm thinking, "Am I going to be touched again?

will you get caught?

Will I be run over by a tour conductor? ”

The men in the car look at me with nasty eyes, touch me, rub against me, grab me, and when I sit in my seat, I want to think only about the day, my dreams, and the kids at school, but I'm filled with anxiety about what they'll do when the bus arrives.

Today there is a new front in the fight for human rights.

My weapon used to be a big gun

this is my current weapon

It's a much more powerful and much more effective weapon.

But this power must be used wisely.

Putting the right image in the right hand at the right time can make a real difference.

thank you

(Applause) Thank you.

(applause)

I'm an expert in pulling heavy objects in the cold, and I'm here to talk to you at TED, an oasis for the intelligentsia.

Most of my adult life has been spent as a polar explorer, and last month I completed the most ambitious expedition of my life with teammate Tarka Lapiniere.

In fact, I feel like I was transported straight here after four months of exploration from a place full of complaints and complaints.

So I still haven't been able to switch heads

A strange side effect of exploration seems to have completely ruined my short-term memory.

So I've prepared a note to avoid 17 minutes of complaints and complaints.

This is the first time I've ever told you the story of this expedition. It's not about decoding genes or building a space telescope, it's about giving everything we have to do something that no one has done before.

I hope it will be a hint for everyone to think about.

It was a voyage of exploration in Antarctica, the coldest, harshest, driest and highest continent on earth.

Antarctica is fascinating and vast.

It's twice the size of Australia, and it's about the size of China and India combined.

On a side note, I've experienced an interesting phenomenon in the last few days, and I wondered if Chris Hadfield would be at TED in a few years and say something like, "Oh, Antarctica, that's cool.

My husband and I went to Antarctica with Lindblad."

Or "Hey, did you go to Antarctica for a marathon?"

(Laughter) Our journey is 69 marathon distances, walking from the Antarctic coast to the South Pole and back again in 105 days, about 3,000 kilometers.

In the process, we broke the record for the longest human-powered distance traveled in the polar regions by about 640 kilometers.

(Applause) For those of you on the West Coast, walk from here to San Francisco and back again.

It's been quite a long trip for a camping trip, and here's a well-written article from Malaysia's Business Insider.

[Two men have completed the polar adventures that so many explorers have died before] Chris Hadfield eloquently describes the fear, success, and survival possibilities of exploration.

Nine people have tried before us, and five people died on the way, not one of them being able to go back and forth between the poles.

I'm Captain Robert Falcon Scott.

Led the last unit to attempt this adventure

He and his rival, Sir Ernest Shackleton's expedition, competed for a decade to be the first to reach the South Pole and survey Antarctica, which at the time was less known than the surface of the moon visible to astronomical telescopes.

Most of Antarctica wasn't surveyed 100 years ago.

some of you may know

Captain Scott's last expedition, the 1910 Terra Nova expedition, began with a grand polar act.

Using ponies, dogs, petroleum-powered tractors, etc., the plan was to pre-position lots of food and fuel for the last five of Scott's expedition to the South Pole, and then the five would turn around at the South Pole and pull the sled back on foot.

Scott and his final team of five arrived at the South Pole in January 1912 only to find they had been beaten by Norwegian Roald Amundsen on a dog sled.

Scott's party was on foot at the end.

For more than 100 years since then, reaching the South Pole with human power remained unattainable.

Scott's party of five men was wiped out on the return trip.

For the last 10 years, I've been wondering why

Why hasn't Scott's team's record been broken since then?

Scott's party walked 2,500 kilometers on foot

No one has come close to that record since.

So it's the pinnacle of human endurance, effort and physical achievement in the harshest climate on earth.

This is like a marathon record that hasn't been broken since 1912.

Curiosity, stubbornness, or arrogance, of course, a little bit outlandish, but just as you might imagine, all of these things came together to make me think that maybe I could be the man to accomplish this feat.

Unlike Scott's expedition, it's just the two of us, and last October we left the Antarctic coast with all our belongings in tow in what Scott called "human transport."

I told you I would walk from here to San Francisco and back, but I was actually dragging a load a little heavier than the heaviest player in NFL history.

Our sled started at 200 kilos, or 440 pounds, the same weight pulled by Scott's weakest pony.

At first we were at 800m/h

Maybe the reason this trip hasn't been done for over 100 years is because no one was stupid enough to try it.

I can't claim it was exactly the Edwardian way -- I didn't name any mountains, I didn't map any unsurveyed valleys.

It probably wouldn't surprise me if we knew in the future that part of the human brain lights up when you curse yourself.

The average American spends 90% of their time indoors

We didn't go indoors for almost four months.

I didn't see the sunset

24 hours daytime

the living environment is very harsh

In 105 days I only changed my underwear 3 times Tarka and I shared a 2.7m2 tent

There were also some technologies that Scott never dreamed of.

Every night I blogged from my tent on a custom solar-powered satellite communications device and a computer, and on top of the tent was a foldable solar panel.

Writing was very important to me

Adventure and exploration literature inspired me as a child, and I'm sure you all have seen the importance and power of storytelling here this week.

Even though we were using 21st-century equipment, the real reality we experienced was the same challenge that Scott faced: the weather, and the massive amount of frictional drag between the sled and the snow, which Scott called the glide.

The lowest temperature of the snowstorm I experienced was minus 70 degrees, and most of the trip was in a state of zero visibility called whiteout.

I climbed up and down Beardmore Glacier, one of the world's largest and most dangerous glaciers.

It's 180 kilometers long, and most of its surface is called blue ice.

A clean, glistening, iron-hard blue surface, deep fissures in glaciers up to 60 meters deep, lined with thousands of crevasses.

Airplanes can't land, so they have the lowest practical chance of being rescued and are at the greatest risk.

We arrived at the South Pole on foot on Day 61, a day late due to bad weather, but unfortunately this was a disappointment.

At the South Pole is Amundsen-Scott Station, a permanent American base.

There is a runway, a cafeteria, hot showers, a post office, a souvenir shop, a movie theater, and a basketball court.

It's a little different these days, and there's a lot of garbage being thrown away.

I think it's great that humans can live 365 days a year with hamburgers and hot showers and movie theaters, but it also seems to create a lot of empty cardboard boxes.

On the left side of this picture, you can see acres of garbage waiting to be flown out of Antarctica.

But at the South Pole, there's a monument that tells us that we were the fastest, unaided, unaided, 1,500-kilometer hauler of the toughest route in history, dragging the heaviest weight of anyone in history.

If we interrupt and fly home, which is, of course, a very common sense decision, my story ends here, and the ending would be something like this.

If you have the right team around you, the right tools, the right technology, enough confidence and determination, anything is possible.

But if you turn back, the story gets interesting.

The Antarctic highlands, over 3,000 meters, are windy and very cold, and we were exhausted.

After 35 marathons, we still have a long way to go. Of course, we had safety nets that didn't exist in Scott's day: snowplanes, cell phones, 24-hour tracking radios. But as we'll see later, it's less about making life easier and more about making the nuanced decisions that push us so close to human limits.

Humankind's journey to its limits is a brutal torture, pulling a sled full of food every day, but exhausted from hunger every day.

Over the years, in my proposals to supporters, I've made lighthearted statements about challenging the limits of human endurance, but in reality, it's been a very scary environment.

Two weeks of almost constant headwinds slowed us down before we reached the South Pole.

As a result, for some days, I could only eat half the amount.

Food on the sled for the trip was limited, so they tried to make the food last longer by halving their caloric intake.

As a result, both of them gradually became hypoglycemic - their blood sugar levels were dropping day by day - and they became more sensitive to extreme cold.

Tarka took a picture of me one day, hypothermia and passing out.

We've both had multiple bouts of hypothermia, something we've never experienced before, and it's very humiliating.

The more indefatigable you think you are, as I was, the more damage it does. Hypothermia doesn't give you a choice.

become completely helpless

Like a drenched toddler

will look miserable

I remember wishing I could just sleep and stop

It's a very, very strange feeling.

We finally ran out of food, 46 miles short of the first depot where we started our journey.

We literally had 10 refueling stations filled with food and fuel for the return trip.

It took 12 hours from the other side of Antarctica

Calling the plane was one of the toughest decisions of my life.

That's why it sounds like a scam to be standing here with such an upset stomach.

I gained 15 kilograms in the last three weeks.

My hunger left me with a funny scar: every time I found a hotel buffet, I would gobble it up.

(Laughter) In fact, we were really hungry, in a very bad way.

Standing here alive and unharmed, I can tell you this story.

But calling outside help was never part of the plan, so I'm still struggling inside myself.

This trip was my biggest dream and it was almost perfect.

On the way back to the shoreline At the top of Beardmore Glacier our crampons - boot spikes for traveling over glacier blue ice - broke.

There were 100 miles of blue ice descents as hard as slippery rocks.

I had to fix the crampons almost every hour.

To give you an idea of ​​the scale, we're looking down at the entrance to Beardmore Glacier.

Manhattan slips into the hollow on the horizon

It's about 20 miles between Mount Hope and Mount Kiffin.

I've never felt so small as when I was in Antarctica.

As you descend to the entrance to the glacier, you can see fresh snow covering dozens of deep crevasses.

Lord Shackleton's men described walking across such an area as walking on glass windows in a train station.

Mostly skis and boots through the snow, but countless crevasses.

At one point, it fell to my armpit, but luckily it didn't fall any further.

And just five weeks ago, after 105 days, we reached our arduous finish on the coast of Ross Island, New Zealand's Antarctic side.

You can see the ice in the foreground and the rough rocks in the background.

1,800 miles of unbroken ski trails behind

We've accomplished the longest polar trip on foot that I've dreamed of for a decade.

And looking back now, I still think the same way. I spent years talking about the importance of goals and determination and confidence.

Like I said, there's little visible evidence that I traveled.

because I gained 15 kilos

It's covered by make-up now, but there are some faint marks of frostbite.

Around my nose and cheeks where I was wearing goggles, but inside, I'm a completely different person.

To be honest, Antarctica challenged me and shredded my pride to the point where I don't know if I'll ever be able to put it into words.

I'm still having trouble organizing my thoughts

What I can stand here to tell you is that all of us can achieve great things through ambition, passion, and sheer stubbornness that refuses to back down.

But as you may know, I want to share with you the saying, "The itinerary is more important than the destination."

because it contains important

As I approached the finish line on that wild, rocky shore of Ross Island, I began to feel something very big. What that long, grueling walk taught me was that reaching the finish line may never be the perfection that so many people dream of.

A lot of people ask me, "What's next?"

Now I'm so happy just to recover, just to go to a hotel buffet.

But Bob Hope said, "I'm very honored, but I'm still a stubborn person who isn't satisfied." (Laughter) Thank you.

2014 is a special year for me: 20 years as a consultant, 20 years of marriage, in a month I will be 50.

I was born in a small town in Germany in 1964.

One day in gray November, I was overdue

The obstetrics and gynecology department at the hospital is busy with many births scheduled for that day.

In fact, 1964 was Germany's busiest year with over 1.3 million births.

Compared to last year, 600,000 people, half the number

This is the population (age) pyramid for Germany, and the little dot up here is me.

(Laughter) (Applause) Red is the potential workforce, the population between the ages of 15 and 65. I'm interested in this red area.

Let's run a simple simulation to see how this age structure changes over the next few years.

And so the peak shifts to the right, and like many baby boomers, I'll be retiring in 2030.

By the way, you don't need a predicted fertility rate to predict this red area.

The red part, the potential working-age population in 2030, is already established today, if immigration rates don't change much.

If you compare the red areas in 2030 and 2014, you can see that they are quite small.

Before I show you the world situation - what does this mean for Germany?

The labor supply - the number of workers will drop dramatically in Germany.

What about labor demand?

This is the hard part

The consultants' favorite answer is, "It depends."

so i said that too

Avoid predicting the future

because there's too much speculation

Instead-

We looked at Germany's GDP and productivity growth over the last 20 years, and we calculated the following scenario: If Germany wants to continue at this rate of GDP and productivity growth, we can calculate how many workers it would need to sustain growth in Germany.

This green line is the labor demand

Germany faces a talent shortage early

There will be a shortage of 8 million people. That's more than 20% of the current working population, which is a very large number.

And then I calculated some scenarios and got this picture.

To close the gap, Germany would have to dramatically increase immigration, it would have to have more women in the labor force, it would have to move the retirement age forward -- which was just brought forward this year -- and we would need these policies all at once.

If Germany fails here, economic growth will stagnate.

No more growth. Why?

It's because we don't have the workers to base this growth on.

Companies will look for employees elsewhere.

But where?

We simulated labor supply and demand for 15 economies around the world, which account for more than 70 percent of global GDP, and by 2020, this is what the picture looks like.

Blue is labor oversupply Red is labor shortage Gray is border countries in between

By 2020, there will still be a labor glut in some countries, such as Italy, France, the United States, but by 2030, this will change dramatically.

Labor shortage in most large economies globally Labor shortage in most large economies worldwide This includes 3 of the BRIC countries

China, Brazil and Russia, where the effects of past one-child policies are showing.

Now, to tell you the truth, things get even more difficult in reality.

What I'm showing here is just the average

If we take this back from the average and break it down by skill level, what we see is that the high-skilled labor shortage is even higher and the low-skilled labor force is partially surplus.

So, in addition to overall labor shortages, society in the future will face a situation where skills mismatch is pervasive, which means that everywhere there will be huge challenges in education, qualifications, and upskilling in governments and businesses.

Then we looked at robots, automation, technology.

Will technology boost productivity and redefine the future? The short answer to this is

The numbers above already included the productivity boost from technology.

The long answer goes like this

Let's take Germany again

Germans have a reputation for productivity.

In the '90s, I worked in the Boston office for about two years, and when I left, my senior partner said to me, "Give me more Germans, they'll work like machines."

(Laughter) That was in 1998.

16 years from now, I'm sure you'll say the exact opposite.

"Give me more machines, they will work like Germans."

(Laughter) (Applause) Technology isn't just about manufacturing.

Many jobs will be replaced, and office workers, without exception, may be replaced by robots, AI, big data and automation.

The key question is no longer will technology be able to do these jobs, but when, how soon, and at what scale? is the question

In other words, will technology solve the global labor shortage?

The answer is yes and no.

Now the answer is more sophisticated, "It depends."

(Laughter) Take the automotive industry, where more than 40 percent of industrial robots have already been deployed and are beginning to automate.

In 1980, electrical components accounted for less than 10% of the cost of producing a car.

Today this is over 30%, and by 2030 it will be over 50%.

These new electronic components and applications required new skills and created new jobs, kind of like cognitive systems engineering, the job of optimizing the interaction between the driver and the electronic control system.

In 1980, no one could have imagined that such a job would be created.

And the truth is, the number of people involved in building cars has changed very little over the last decade, even with the advent of robots and automation.

what does this mean?

Of course, technology replaces many jobs, but it also creates many new jobs and new skills, which means technology exacerbates the overall skills mismatch.

This kind of de-averaging will expose critical issues for governments and companies.

Skilled people – Talent will matter in the next decade

If these people are a scarce resource, we should understand them better.

Do they think it's okay to work abroad?

what kind of job would you prefer?

To find the answer, this year we conducted a global survey of 200,000 job seekers from 189 countries.

Migration is a key point in bridging the gap, or at least a short-term solution, which is why I asked about mobility.

More than 60% of these 200,000 said they would be willing to work abroad.

it was higher than i expected

And if you look at employees between the ages of 21 and 30, the numbers are even higher.

If you look at it by country, it's true that people are in flux around the world, but that's only part of it.

The least immigrant countries were Russia, Germany, and the United States.

So where do people prefer to emigrate?

Australia ranks 7th, with 28% of people willing to move

And then France, Switzerland, Germany, Canada, England, and America is the most popular country in the world.

Well, what kind of jobs do these 200,000 people like?

What are you looking for in a job?

Salary is 8th out of 26 lists

The top four were about work culture

No. 4 Good relationship with boss No. 3 Work-life balance No. 2 Good relationship with colleagues No. 1 is the same all over the world Being evaluated for one's work

it means to be thanked

It's not a once-a-year bonus, it's a daily thing.

So the global labor crisis boils down to personal problems.

people want to be recognized

Isn't that the case with everyone?

Let's connect the dots

We are facing a global crisis ahead: a global workforce shortage, a skills mismatch, and a cultural challenge.

And this global labor shortage is imminent.

now we are at a turning point

What can we – governments and businesses – do?

Every company, every country needs a talent strategy, and act now. This talent strategy has four pillars.

The first is planning, which predicts supply and demand for different jobs and skills.

Workforce planning becomes more important than financial planning

The second is how to attract the best talent, Generation Y, women, and even retirees.

The third is employee education and skill improvement.

Plenty of tasks to improve skills

Fourth, how to retain top talent is how to create a culture of gratitude and goodwill in the workplace.

But an important underlying factor is how we improve our attitudes.

Employees are a resource, they're an asset, they're not a cost, they're not just a head count, they're not a machine... They're not the "Germans."

thank you

(applause)

Ten years ago I received a phone call that changed my life.

At the time, I was a cardiologist at UCLA, specializing in cardiac imaging.

The call was from the veterinarian at the zoo in Ross.

An old female chimpanzee woke up with a flabby face, and veterinarians feared she had suffered a stroke.

I was asked to come to the zoo and have an imaging scan to look for possible heart problems.

I'm sorry to say that North American zoos are now staffed by highly qualified and widely accredited veterinarians who provide excellent care for sick animals.

But sometimes, I have to ask my doctor for some specific advice, and I was the lucky doctor who asked me to help him with that.

So far, I've made sure this chimpanzee didn't have a stroke, this gorilla doesn't have a dissection of the aorta, and I've seen this macaw's heart murmur. This California sea lion didn't have pericarditis.

This procedure is the same as most human patients, with the exception of limbs and tails.

Now, most of the time, I work as a doctor at UCLA Medical Center, where we discuss symptoms, diagnosis, and treatment of human patients.

Sometimes we had rounds at the UCLA Medical Center and the Los Angeles Zoo on the exact same day.

And then this kind of thing became very clear to me.

Physicians and veterinarians see essentially the same diseases, whether their patients are animals or humans: congestive heart failure, brain tumors, leukemia, diabetes, arthritis, ALS, breast cancer, and even mental illnesses like depression, anxiety, obsessive-compulsive disorder, eating disorders, and self-harm.

I have to say to you here

I studied comparative physiology and evolutionary biology, and while I was in college -- I wrote my thesis on Darwinian theory -- I learned that there was a lot in common between animal and human disease, and that gave me a much needed wake-up call.

I began to wonder, despite all that commonality, why hadn't I consulted veterinarians and consulted the veterinary literature to gain a deeper understanding of human patients?

Why haven't I, or the physician friends and colleagues I asked for answers, ever attended veterinary conferences?

Why is this very thought surprising?

So every doctor accepts the biological connection between animals and humans.

Every drug we prescribe, and every drug we take ourselves or give to our families, is first tested on animals.

But there's a difference between giving animals drugs, human disease, and animals naturally getting congestive heart failure, diabetes, and breast cancer, and animals naturally getting congestive heart failure, diabetes, and breast cancer.

Now, perhaps some of the surprises are due to the widening gap between urban and non-urban parts of the world.

City kids hear rumors that they think wool grows on trees and that cheese is made from plants.

Now, today's human hospitals are increasingly becoming gleaming cathedrals of technology.

And it creates a psychological distance between the human patients being treated there and the animal patients who live in the ocean, in the farms, in the jungles.

But I think there's a much deeper reason.

As doctors and scientists, we know, in theory, that Homo sapiens is just another species, not as rare or special as any other species.

But in my heart, I don't think that's exactly the case.

How do you feel when you're listening to Mozart or watching a Mars rover on your Macbook?

We tend to think that humans are special, even though we know that seeing ourselves as the preeminent species comes at the cost of scientific isolation.

well lately i

Whenever I see a human patient, I always wonder, what do vets know about this issue that I don't understand?

If we look at our patients as human beings, we might be able to treat human patients better.

There are some interesting examples that made me think about this.

heart failure caused by anxiety

Around the year 2000, a human cardiologist "discovered" that emotions cause heart failure.

It described the example of a gambling father who lost his life's savings with a roll of the dice, and the example of a bride left at the altar.

But this "new" human diagnosis was neither new nor unique to humans.

From monkeys to flamingos to deer to rabbits, veterinarians have been diagnosing, treating and even preventing emotionally induced conditions in animals ranging from monkeys to flamingos and deer to rabbits since the 1970s.

If this veterinary knowledge had been transferred to ER doctors and cardiologists, how many lives could have been saved?

self-harm behavior

There are human patients who hurt themselves.

Some people pull out part of their hair, and some people actually injure themselves.

Animal patients can also harm themselves

Some birds pluck their own feathers

Some stallions bite their flanks until they bleed

But veterinarians have very specific and effective ways to treat and even prevent self-harming animals.

Shouldn't this veterinary knowledge be passed on to patients, psychologists and parents who suffer from self-harm?

postpartum depression and postpartum psychosis

Occasionally, it can show up soon after giving birth, and sometimes it can lead to severe depression and even psychosis.

They neglect their newborn babies, and in extreme cases, they can even hurt them.

Equine veterinarians know that sometimes a mare will ignore the foal and refuse to nurse soon after giving birth, and there have been cases of the mare kicking the foal to death.

But veterinarians realized that the mare's refusal to suckle the foal was mediated by a pathological phenomenon associated with an increase in oxytocin in the mare's blood.

Oxytocin is a bond-forming hormone that makes mares more interested in their foals.

Shouldn't this information be passed on to patients suffering from postnatal depression and psychosis, to clinical psychologists, family doctors and parents? Shouldn't it be handed over?

Now, despite this great promise, unfortunately, the gap between the two fields remains wide.

In order to explain it, we have to identify the problems one by one.

Some doctors look down on doctors who aren't medical doctors.

That is, the attitude towards dentists, optometrists, psychotherapists, but especially animal doctors.

Of course, most doctors don't know that getting into veterinary school is harder these days than getting into medical school. When you get into medical school, it's all about knowing one species, Homo sapiens.It's all about knowing one species, Homo sapiens.

So I think it's understandable that veterinarians are frustrated by the patronage and ignorance of doctors.

It's a veterinarian's term. What do you call a veterinarian who can only see one species?

(Laughter) I've become very passionate about filling that gap, through programs like Darwin's Rounds at UCLA.

Through all-animal conferences, medical schools and veterinary schools come together for joint discussions to share the diseases and disorders of animal and human patients.

At the all-animal conference, attendees will learn how treating tiger mammary cancer can help kindergarten teachers better treat breast cancer, how understanding what happens to ovarian cysts in Holstein cows can help dance instructors with dysmenorrhea better care, and how better understanding how to treat separation anxiety in nervous shelties can help ease the anxiety of children entering school for the first time.

Not only in the United States, but in other countries, through all-animal conferences, doctors and veterinarians, as doctors, as peers, as colleagues, check their attitudes and preconceptions at the door, and then walk in together.

After all, we humans are animals too. It's time for us doctors to take care of our patients and our own animal nature, and it's time for us doctors to take care of our patients and our own animal nature, and join veterinarians in a cross-species approach to health.

Because some of the best and most humanistic medicine is administered by doctors with non-human patients.

One of the best ways we can care for our human patients is by paying close attention to how they live, how they grow, how they get sick and how they heal, for every non-human patient on this planet.

thank you

(applause)

When I arrived in Kiev on February 1st of this year, Independence Square was surrounded by government police.

The demonstrators who occupied this square, known as the "Maidan," were preparing for battle, amassing mountains of homemade weapons and mass-producing makeshift protective clothing.

The Euromaidan protests began peacefully in late 2013, shortly after Ukrainian President Viktor Yanukovych rejected a broader deal with the EU and sought to strengthen ties with Russia.

In response, tens of thousands of citizens gathered in central Kiev to demonstrate against their allegiance to Russia.

A few months later, the confrontation between police and civilians escalated.

I built a temporary studio along the barricade on Hrushevsky Street.

So I photographed the combatants against a black curtain, which obscured the eye-catching visual backdrop of fire, ice and smoke.

In order to tell the story of each person, I knew I had to remove the dramatic backdrop that we often see in mainstream media.

What I was witnessing was news and history at the same time.

When I realized that, I was freed from the framework of newspaper and magazine photojournalism.

Oleg, Vasily, and Maxim were ordinary men, born in ordinary towns, leading ordinary lives.

But the elaborate costumes they wore were amazing.

I say "costumes" because they weren't put together by someone.

All of them were uniforms crafted from surplus military uniforms, irregular military uniforms, and loot stolen from police officers.

I was intrigued by the way they chose to express themselves and the way they looked to represent masculinity and the ideal warrior.

I worked slowly with a manually focused analog film camera and a handheld exposure meter.

it's the old fashioned way

It gives us time to talk to each other and quiet eye contact.

Tensions escalated, culminating in a deadly clash on February 20th, which came to be known as "Bloody Thursday."

Government snipers began shooting at civilians and demonstrators on Institutka Street.

Many people died in a short time

Hotel Ukraine's front desk turned into a makeshift morgue.

There were rows and rows of corpses lying in the streets.

the streets were stained with blood

The next day, President Yanukovych fled Ukraine.

Three months of protests left more than 120 confirmed dead and many more missing.

History unfolded at great speed, but there was no celebration on the Maidan.

In Kiev's Independence Square, as the days went on, armed fighters were joined by tens of thousands of civilians who filled the streets for a mourning rally.

Many of them were women, and they carried bouquets of flowers to mourn the dead.

People came every day to fill the square with millions of flowers.

The Maidan was filled with grief

It was so quiet I could hear the birds

I never heard it before

I stopped the women who had come up to the barricade to lay the offerings and asked if I could take a picture.

Most of the women were crying during the filming.

On the first day of shooting, both Emine, my intermediary, and I cried along with the women who visited the studio.

Up until that point, I had never seen a woman.

Their pastel coats and shiny handbags The red carnations and white tulips and yellow roses they carried were out of proportion to the black sooty squares and the dingy men who camped.

It's pretty clear that these two kinds of pictures don't make sense without one of them.

Because it's about men and women and who we are.

The pictures speak to the roles of men and women in the struggle, not just in the Maidan or Ukraine.

Men fight and women mourn them

Man represents the ideal warrior, and woman represents what violence means.

When I took this photo, I believed I was documenting the end of violence in Ukraine.

But in fact, I was recording the "beginning"

Currently, the death toll has reached about 3,000, and tens of thousands of people have been evacuated.

I visited Ukraine again 6 weeks ago

On the Maidan, the barricades have been removed, the flagstones used as weapons in the protests have been replaced, and cars are moving freely through the center of the square.

There are no fighters, no women, no flowers.

A huge billboard with geese flying over a field of wheat covers the charred exterior of the trade union building, calling out: Glory to Ukraine.

Glory to the heroes"

thank you

(applause)

(music) (applause)

thank you

It's only 18 minutes and you have to explain how many days and hours it takes, so it's better to start now.

First, watch Al Jazeera's program "The Listening Post."

(Video) Norway is a relatively news-poor country.

There wasn't much drama in last week's election.

Norwegian media is characterized by a lack of drama.

A few years ago, Norwegian public broadcaster NRK decided to broadcast a seven-hour train journey live.

Over a million Norwegians liked it, according to viewership polls.

It's the emergence of a new kind of reality show that's turning all TV conventions upside down.

No story, no script, no drama, no climax, this is called slow TV.

For the last two months, Norwegians have been watching boat trips along the coast, and there's a lot of fog along the coast.

NRK management is considering broadcasting a national knitting evening.

It looks boring at first glance, but it's actually boring, but something about this TV experiment seems to have caught the attention of the Norwegian people.

So I decided to send Marcella Pizarro of The Listening Post to Oslo to find out what it was.

(Laughter) (Helm) And then Al Jazeera did an eight-minute video about this weird Norwegian TV show.

Both Al Jazeera and CNN are wondering about this.

It all started in 2009, when a colleague had a great idea.

the place is

was at lunch

The Day of Germany's Invasion of Norway in 1940 — Why not make a radio show that chronicles it?

It's going to air at exactly the same time it happened.

It was an interesting idea, but we only had two weeks until the day of the invasion.

So we discussed what else we could think of as a show about what's really going on.

I want something that takes a lot of time

someone came up with the idea of ​​a train

That year was the 100th anniversary of the Bergen Line. The train from West Norway to East Norway takes seven hours, exactly the same as it did 40 years ago.

we say "uncut"

"So how long is the show?"

I repeated that exchange.

Luckily, they laughed and kindly said yes, so we started filming a seven-hour, four-minute show on a sunny day in September.

It actually took 7 hours and 14 minutes due to a signal failure at the last station.

I brought in four cameras, three of which captured beautiful nature outside.

Then I passed on the stories and information of the passengers.

(Announcement) We'll be arriving at Haugastal station soon.

That's all, but we have 160 tunnels, and we played the footage in between.

(Narration) While I'm digesting my meal, I pick up a little bit.

It's the last descent before we reach our destination.

Pass through Mjörfel Station

a new tunnel

(Laughter) We thought we had a good show.

2,000 railway enthusiasts in Norway will love it.

It aired in November 2009.

It turned out to be much more attractive than we thought.

This is Norway's five biggest channels on a normal Friday, and NRK2 is on the far right, and what happened when they played the Bergen Line show was that 1.2 million Norwegians watched the show.

(Applause) Another funny thing is, on NRK's ​​main channel, the newscaster said, "By the way, on channel 2, the train is arriving at Myrdal station."

Hundreds of thousands of people jumped on this train over here. (Laughter) It was also a huge success on social media.

It was amazing to see thousands of Facebook and Twitter users watching the show and talking to each other as if they were on the same train.

This is one of my favorites, and I'm a 76-year-old man.

He watched the show all the way through, and when he got to the terminal station, he got out of his seat, picked up his luggage, and then banged his head against the curtain rail before realizing he wasn't on the train.

(Applause) So that's why it was such a powerful and lively show.

It's 436 minutes on a Friday night, and that night I got a tweet saying, 'Aren't you cowardly to quit at 436 minutes?

How could you possibly use 8,040 minutes to broadcast an iconic Norwegian journey? The coastal ferry Hurtigruten connects 3,000 kilometers of coastline from Bergen to Kirkenes.

It has an interesting history of 120 years and is deeply connected to coastal life.

So just a week after the show on the Bergen line, I called Hurtigruten and started working on the next show.

I wanted to do something a little different this time.

The Bergen Line was a taped program.

We were all gathered in the editing room watching this footage when I met a reporter at the All station.

I called him and we were talking about the show. So he came to the station and took a picture and waved at this camera. And I thought, what if more people knew we were on the train?

Did a lot of people come?

how did it go

So I decided to do my next show live.

I wanted a picture like this where you're above the fjord and on the screen at the same time.

It's not the first time NRK cameras have been on board ships.

This is from 1964, and even the technical chiefs were in suits and ties. The NRK had a whole set of equipment on board and relayed it 200 meters from shore, talking to engineers in the machine room and having a great show on deck.

It's not the first time we've done it on a boat.

This is five and a half days of live coverage, and I thought I needed help.

So I asked the viewers what would you like to see?

what do you want to show how would you like it to be?

Should I have a website? What should we offer there?

So I got a lot of feedback from the viewers, which was very helpful in making the show.

In June 2011, the Hurtigruten ship sailed with 23 staff members.

(Music) There were many things that left a strong impression on me on this trip, and they were all people.

For example, this guy is head of research at the University of Tromsø (Laughter) and I'll show you the clothes, again.

strongly memorable

It was worn by a man named Eric Hanson.

Or these two guys who really grabbed our show, or the thousands of people who showed up on the journey, made it happen.

they made the story

This boy is a third year middle school student named Carl.

It says, "I will be a little late for school tomorrow."

Where I have to go to school at eight in the morning

I went there at 9 o'clock, but my teacher didn't scold me because he was watching the program too.

(Laughter) How did you do it?

Turn the ship's conference room into a television control room

remodeled

We did it all ourselves and brought in 11 cameras.

this is one of them

It's a sketch I did in February, and the experts at NRK have come up with some really cool stuff based on this sketch.

Incorporating originality and ingenuity

(Video) This will raise and lower

This is now Norway's most important drill.

One of 11 cameras that captures stunning live footage from the ship — controls up and down bow camera

Eight wires support the camera.

I'm in charge of another camera

I use different cameras for different situations.

HELM: This is another camera that's usually used for sports coverage.

You can take close-ups of people from hundreds of meters away, like this (a man falls off a horse -- Laughter).

he's fine no problem

Everywhere I went, I was able to capture people waving, thousands of people, all with cellphones.

When I point my camera at them, I get a message saying, "Dad, you're in it!" and wave your hand.

It's five and a half days of images of people waving. What a joy it is to be able to send warm messages to the people you love.

It was also a huge success on social media.

When Her Majesty the Queen of Norway appeared on the last day, Twitter couldn't handle the load.

On the Internet, we streamed over a hundred years to 148 countries this week, and this website is still available, and in fact can be watched forever, because Hurtigruten was named UNESCO's Norwegian documentary, and it even entered the Guinness Book of Records as the longest-running documentary ever.

(Applause) Thank you.

It's a long show.

some watched longer

It says, "I haven't used my bed in five days."

He was 82 and couldn't sleep.

I kept watching the show, hoping something might happen, and I don't think anything happened.

You can see the famous Troll Fjord and the next day where the highest ever NRK2 was recorded.

Here's what the Norwegian major TV viewership numbers looked like in June 2011: Hurtigruten's best as a TV producer.

I'm happy to say that 3.2 million Norwegians watched this show in a country with just five million people.

Even Hurtigruten passengers were watching the show (Laughter) instead of turning 90 degrees and looking out the window, they chose to watch TV.

Through this bizarre TV show, we were able to become a part of everyone's living room with music, nature and people.

"Slow TV" became a buzzword, and we started looking at what else slow TV could do.

You can target something that takes a long time, like a train or Hurtigruten, or you can pick something and make it longer.

This is a recent project, a peep show.

I did 14 hours of birdwatching on TV, 87 days on the internet.

I did a live broadcast of salmon fishing for 18 hours.

It took me three hours to catch the first fish, so it was a really slow show.

I also did a 12-hour boat trip on the beautiful Telemark canal.

Our next project has attracted interest from outside Norway.

This is Comedy Central's "The Colbert Report."

(Video) A very popular show in Norway caught my eye. It's called "National Fireplace Evening." What it's about is people in winter gear talking in the woods, chopping wood, and then filming fires in fireplaces for eight hours.

Nearly 20% of Norwegians saw it. 20%!

HELM: If fireplaces and chopping wood are interesting, what about knitting?

In our next project, we spent over eight hours broadcasting live from sheep to sweater, and Jimmy Kimmel, who runs a show on ABC, liked it.

(music) (video) Even the people on the show are falling asleep, and the knitters didn't even break the world record.

It was a mistake, but as the old Norwegian saying goes, it doesn't matter if you win or lose.

Death comes to everyone, so it doesn't matter

(Laughter) (Helm) Exactly. So why does this show stand out?

It's very different from other TV shows.

We're taking the viewer on a journey that's going on right now, and the viewer feels like they're really there. They feel like they're on a train, on a boat, and they're knitting together.

I think it's important that we don't edit the time. I also think it's important that we make slow TV accessible to people.

This is from a seven-week coastal voyage last summer.

There was a lot to plan and coordinate.

This is a work plan for 150 people last summer, but more importantly what we didn't plan for.

don't plan what will happen

just bring your camera

it's like a sports game

get people together and see what happens

This is the schedule for Hurtigruten, just one page for a 134-hour show.

By the time we left Bergen, nothing else was decided.

We let our viewers create their own stories. Let me give you an example.

This is from last summer, and as a TV producer, I think it's a good picture, but I'd like to switch screens around here.

But this is slow TV, so I have to keep it on, and my stomach hurts.

Some of you may have noticed that there is a flag

And you start to wonder, is the owner at home?

Are you out? The cow is wandering around, but is it okay?

Where the hell is that cow going?

So if you keep it on like this for a long time, and I've been doing it for 10 minutes, you're starting to create a story in your head.

that's slow tv

I think slow TV is one good way to tell stories on TV. We're going to try to keep doing this once or twice a year, not very often, to keep it feeling like a special event.

Maybe that's a good idea for slow TV, but life is interesting when it's a little weird anyway.

thank you

(applause)

The Ferguson, Missouri, shooting protests of Michael Brown have been subjected to a shocking police crackdown, revealing military weapons and equipment designed for combat that have spread to police forces in small towns in the United States.

It's harder to notice, but the same thing is happening with surveillance equipment.

Large-scale surveillance, such as that done by the National Security Agency, is also being carried out at local police stations, allowing us to gather vast amounts of sensitive personal information about each person that was once impossible.

Location information is very sensitive

Driving a car in the United States reveals that you've been to a therapist, or attended an alcoholic rehabilitation meeting, or gone to church, or not.

When this personal information is combined with the personal information of other people, governments can learn more about how citizens are connected to each other.

Such information was private

Thanks to modern technology, governments have secretly learned much more information than they needed.

Local police use information like this to determine who you are.

One of the key technologies for mass location tracking is the seemingly innocuous "automatic license plate reader."

If you haven't seen it before, I don't think you know where to look.

Mounted on roads and in police cars, these readers take images of passing cars, read their license plates and convert them to text so they can be matched against a list of cars that are potential criminals.

But not only that, but local police continue to keep records of not only wanted people, but also just passers-by, and that number continues to grow, accumulating an incredible amount of data about where Americans are going.

Did you know these facts?

When Mike Katz-Lacave asked the local police for information about him from his license plate, it turned out that they kept not only dates and places, but also where he was headed, and often even photos of his passengers.

The second photo from the top shows Mike and his two daughters getting out of a car in the driveway of their home.

Police have hundreds of photos like this one of Mike's daily life.

If you drive a car in the United States, there is no doubt that your life will be filmed, and I'd bet you.

mike did nothing wrong

Why is it permissible for the police to retain such information?

Because the cost of storing data has plummeted, and police continue to keep data in the hope that it might one day come in handy.

It's not just a matter of one particular police department doing it alone, or several police departments doing it.

At the same time, the federal government is also aggregating all this information from individual police stations into one place, building a huge database that contains hundreds of millions of records about where Americans are going.

This document, leaked from the Federal Drug Enforcement Administration, one of the government agencies most interested in such information, reveals the existence of such a database.

On the other hand, in New York, the New York Police have installed license plate readers in their patrol cars and drive by mosques to get information about worshipers.

The use and abuse of these technologies is not unique to the United States.

In the UK, police put 80-year-old John Cutt under license plate surveillance because he'd taken part in dozens of legal protests, even though he just sat on a bench sketching the protesters.

License plate readers aren't the only mass location technology that police can legally use today.

Cell phone tower dumping techniques can identify cell phone communications that pass through towers at a time that police can legally use.The technology is known to enable the location tracking of tens or hundreds of thousands of people.

And a device called "StingRay" (a dummy repeater) that allows police to send out tracking signals to identify cell phones in your home.

It's also been known to attach this device to a car to survey the surroundings if the home of the person being tracked is unknown.

Just as the Ferguson police have high-tech weapons for the military, police forces across the United States have high-tech surveillance equipment.

Just because you haven't seen something like that doesn't mean it doesn't exist.

So how do we deal with this?

This could pose a serious threat to civil liberties.

History has shown that once police have a wealth of data to track innocent people, it can be abused for intimidation, political gain, and sometimes just voyeurism.

Fortunately, we also have measures to take.

Because city councils can control local police, they can enact ordinances to destroy innocent people's information and authorize only lawful use of such technology.

thank you very much

(applause)

I draw to understand things better

Sometimes I draw a lot of pictures at once and still don't know what I'm drawing.

For those of you who feel that digital gadgets are easy to use and feel superior to, you'll laugh, but it took the man known as the author of the "Book of Tools and Machines" two days to plug a new DVD drive into his laptop in preparation for a debate called "Understanding."

I had never heard of an extension manager.

I'd been able to do extensions without a manager before, so it never occurred to me that I would need to read the instructions. But in the end, I was able to connect.

Now, let's talk about something I'm good at, something that's a good fit for the tech-minded people here, or something I'm particularly interested in.

I ended up choosing the latter option.

talk about rome

Why am I so interested in Rome?

I graduated from the Rhode Island School of Design, an American art school, and I studied architecture in the late '60s.

I was fortunate enough to study abroad in Rome during my last year of college, and that's how Rome changed my life.

I can't underestimate the fact that I commute from my parents' house for the first four years, while going to and from college.

Somewhere along the line, the '60s came to an end, and I only read about it later. (Laughter) It seemed like an interesting time, but I didn't know it was.

If I have the opportunity, I would like to experience Rome without hesitation and do something with and for Rome.

I paint for the purpose of deepening people's understanding

A picture that convinces the reader that I understand myself well

That's my role as an illustrator, that's my job.

Here you can see a sketch of Rome

I have painted many pictures of Rome over the years.

It's all sketches of Rome. I go back to Rome as often as I can because I need to.

It's all a different subject, a different style, a different time.

One of the reasons I'm showing you this is because I want you to understand my process, what I feel about Rome and why I feel it.

This is a fine detail sketch

Rome is a city full of surprises

So many unique perspectives, after all. Narrow, winding lanes suddenly open up into large sunlit squares, but they're certainly not squares defying human standards.

The reason is that the plaza was created in the flow of nature.

The past and the future intersect, the natural light pouring in from the canyons overhead, the blue sky most days - especially in the summer - is like drawing a map, and it's not the usual map you use to give directions.

While thinking about this, how should I express this in the form of a book?

I thought, how can you experience Rome as I feel it, Rome as I understand it?

Here's a trial and error sketch

The reason why it takes so much trial and error is that if you don't know what you want to draw, you can't draw it easily.

This is a small map At first I thought I would start with a map, maybe a small atlas, my favorite roads and things that connect me to Rome.

Here, I'm using one line of text to represent the exhaust of a scooter.

Here the same text revolves around the fountain, which you can read even if you turn it upside down.

This text becomes a story, and it may be possible to draw a vivid story.

Maybe I should move away from the idea of ​​a map altogether Let me show you a view of Rome that I really like Kicking a soccer ball in the air It's a sight you see so often in the squares of this city It bounces here and there and I'll give you an explanation of where it hits

But I think it's too easy

I'm just getting started with this presentation, but these weren't the first ideas that came to my mind.

So I realized that I didn't really have anything that I could think of, so I decided to think about the binding.

For example, four books in a small box

While I was thinking about this, one idea that came to my mind from the sketches was to travel around Rome using different means and at different speeds.

From something like the whole picture of Rome seen from an airship

Quick snapshots taken from a speeding scooter, and a leisurely walk reveals the splendor of Roman decoration.

So back to the airship idea

It reminded me of the inventor, Alberto Santos-Dumont.

We can find the three-dimensional airship that he painted, and use its size as a basis for comparison and overlay it with the sights of Rome.

Pass over and across landmarks Park in front and travel through the pages without being a ruler as if measuring with a ruler

Even if you don't know the length of 11 measured by a ruler, you can compare 11 measured by an airship to the Pantheon.

This is a girl named Beatrix with a dog named Ajax. She buys an airship -- a little one -- she's building it right now. Ajax is sniffing the balloon for holes.

Launch this airship from the top of the Spanish Steps and go on a journey to observe the city from the sky.

Pass over the Spanish Steps

Effective for showing how the river flows through the hills

But across the road from there, by the Column of Marcus Aurelius, as you can tell by the diameter of the airship, when she tries to read the story around it, she gets a little too close to the column and touches it.

You can capture that and paint the structure of the monument, which is like a thick pile of gold coins. It passes over San Ignacio Square, and although the picture has lost its symmetry, it's a place worth visiting anyway.

You can see an amazing blue sky in a picture frame of a wonderful building.

Over the Pantheon Over the Oculus 26 feet in diameter

Lock the airship, lower the anchor ropes, and drop down for a closer look.

Here, the text is flipped to the right to read, so by turning the book, it feels like you're looking from the ground, and you can see from her point of view, into the hole. By inviting the reader into the space, you get a different point of view. It's a good point of view for a building that can contain a perfect sphere. The diameter of the sphere is the distance from the center of the floor to the center of the oculus.

Unfortunately, the anchor rope gets entangled in the leg of a Boy Scout visiting the Pantheon, and they are yanked out and taken on an amazing and terrifying tour of the Roman cathedral, which hangs in the opposite direction, giving them an upside-down perspective.

As soon as they reach the top of the Church of Santivo, they escape, this spiral building.

Her journey continues to Piazza Navona

The Tre Scalini restaurant looks busy, but when I think about it, I realize it's lunch time and I'm hungry.

Continuing the flight to Piazza del Campo de Fiori, there we put Ajax the dog in a basket and drop him off with a shopping list of groceries at the open-air market.

Anyway, the dog will return to the airship with the shopping.

When the girl opened the package to eat the prosciutto ham, Ajax suddenly jumped on the ham.

The dog manages to save the prosciutto, but the tablecloth flies away.

Reluctantly, without a tablecloth, we land the airship somewhere and find a place to eat lunch.

Along the way, you'll find a large wall, and you'll find a lot of small holes that are useful for docking your airship, which is useful for keeping your airship tethered.

Surprisingly, this wall is the only remaining outer wall of the ruins of the Colosseum.

After lunch, we untie the anchors, walk through the Baths of Caracalla, and over the outer wall of the city, to the abandoned gatehouse, and from here we can see the Pyramid of Cestius again, with the lightning rod on top.

Actually, this is the problem. The airship got too close. When you're on the airship, you have to be very careful of sharp objects.

So the story of the girl's journey ends here.

Now it's Marcello, he's kind of lazy

By the time the alarm clock went off, it was already 5 minutes before 12:00.

Jump up quickly, hop on your scooter and drive through the city, past the church of Santa Maria della Pace, run through the alleys and lanes, through the tourist excursions, and disturb the life of the quiet Roman backstreets.

I think you can see the speed he's running past in this little sketch, but again you can flip it over and look at it from both angles, because there's text on both the top and the bottom, and the image you see here is upside down.

He continues running and approaches the waiter, who doesn't notice him.The waiter is carrying two plates of linguini.He's carrying mild pasta with white wine and shellfish sauce to customers sitting on the road outside the restaurant.

It's too late for the waiter to notice the scooter.

Marcello continues on his scooter like nothing happened.

The view from here is obstructed by linguini.

Breaking the scaffolding These scaffoldings are a symbol of how Rome continues to be a splendid city where you can always feel the history. While preserving the appearance of a city wrapped in history, it continues to grow and change, aiming to become what the times demand and what we want.

Passing through Piazza della Rotonda Piazza della Rotonda Even in front of the Pantheon there's a lot of chaos, but I arrive at work

In fact, Marcello's job is to drive the number 64 bus, and if you've ever been on the number 64 bus, you know that this bus drives around town with the same enthusiasm that Marcello's scooter does.

The last one to appear is Carlette

I'm looking at the table. I'm going to propose tonight to my girlfriend of 40 years.

Arrange the candles, place the flowers in the center of the table, and consider the placement of the plates and glasses.

But I'm still not convinced because I feel something is missing.

The phone rings and I am summoned to a Palazzo (building)

I'm going to walk, even if it's a hurry - I mean walking, but it's still pretty slow compared to other modes of transportation I've seen.

We all know Carlette because we're in the entertainment world, specifically television.

But he's a TV repairman, so everyone knows him.

everyone has his phone number

Arrive at the Palazzo and find yourself in front of the large main gate

Enter the courtyard and talk to the caretaker The caretaker says there's a big problem in the palazzo None of the TVs are working There's an important soccer game tonight, so everyone is restless and nervous.

We go down to the basement and check the wiring, and then we slowly work our way upstairs.

Ascend to the top until you reach the central staircase and from there take a small staircase to reach the attic.

When I opened the attic window, there was a tablecloth caught in it, like it was wrapping around the building's TV antenna.

Remove it and the problem will be solved immediately Palazzo's inhabitants will be delighted

solved his problem with

Now the table is perfectly set at home, just waiting for her to arrive

So far, this is my first attempt at this book, but I don't think I've done enough to introduce you to Rome, which I want to tell you.

Then I decided to introduce only the famous plazas, so I went inside, crawled under the plazas, showed how the plazas spread out, and explained why they were shaped the way they were.

But that would be too complicated, so if I collect only the parts that I like, and put them in the pantheon without changing the scale, it will be an amazing place where you can see the tops of the pyramids of Santoibo and the Sestis, and even Bramante's Tempietto.

In order to create a single painting, I also incorporate the styles of the painters Piranesi and Escher.

What if some kind of smoke draws a thin blue line and flows like the path connects the story?

I thought, "Wait a minute, what are you thinking?"

Books are not just about collecting and accumulating information, they can also be said to be layers of information.

The act of reading is always peeling back layers, we call them pages, and we peel them back in a certain way.

But think of it as removing just one layer. Rome is a place with many layers, some horizontal and some vertical.

The veneering on the walls of a building in Rome hides old scars, scars that have changed over the centuries, and the building has been remodeled along with it to avoid demolition.

Now, if you fold the page on the left and open it up, you can see what's hidden behind the scars.

For example, in 1635 the windows had to be small because they knew the enemy was coming.

That's how the traces of remodeling are hidden under the make-up.

You can take a peek inside by opening this Palazzo page.

And, more importantly, you can also see the giant stone blocks in the corners of these amazing buildings, which are actually fake blocks often made out of brick and masonry.

You can see it three-dimensionally like this

It's a double-folding representation of a narrow path leading suddenly to a large open space. This double-folding page, if the reader, like me, has been familiar with pop-up books since childhood.

By sticking your head inside, you will feel the illusion of being in a plaza.

It's not particularly complicated, it's just using double-sided pages.

you can make it easier

See the Pantheon and the Rotunda square in front of it

I'm laying out all the books here

If you don't open the book all the way, but just open it 90 degrees, you can look down in front of the Pantheon, like you're looking down into the square.

From here, if you turn the book upside down, you can see the square and the front of the Pantheon.

There are no page spreads, no gimmicks, nothing, it just doesn't open to the full book

This idea looks good, so I've tried it indoors, and it looks like it could be a combination of woven pages and half-open pages.

This is what it feels like when you're inside the pantheon, and this is how ideas develop.

Even if you think that the idea itself can be used, it lacks a human element.

I went back to the basics of storytelling, because it's an important part of keeping people interested, and it's necessary to sustain content interest and convey information.

I was interested in the title, "Pigeon's Progress."

If this was a homing pigeon, I thought I'd call it "Homer's Odyssey."

But that's going too far... (Laughter) If the title was appropriate, I should have used it, but it's about Rome, so it's a book about all the things I love about Rome.

This is a pigeon that lives on the roof of a church

After a day like any pigeon would go out and do, you come back to the nest and it's all covered in scaffolding and green nets, and no matter what you try, the pigeons can't go home.

Now that I'm a homeless pigeon, I have to look for a different nest.

I thought I might have no choice but to go back to my family, but I wouldn't say that's a good idea, but it would also be a reason for the pigeons to flock.

I also thought that would be interesting, so I thought that I needed someone to be involved in that.

We introduced an old grandfather who seems to have made it his life's work to take care of sick pigeons.

Wherever he goes to help the pigeons - even in danger, they are loyal to him, performing tricks for him, being his lunch break partner.

A special bond develops between this old man and the pigeons.

But then the grandfather becomes ill, near the end of the story, seriously ill.

Grandfather teaches him to draw his name Aldo on a dove

I don't see my grandfather for three or four days, so he lives in a small attic, and pigeons fly around, drawing his name.

Then the old man summons all his strength and climbs the ladder to the roof, where a flock of pigeons is waiting. Like a red balloon, he carries the old man and flies up to the top of the town wall.

I forgot to mention that my grandfather used to bury pigeons outside the town walls when they died.

It's an old Roman tradition that the dead are not buried within the city walls.

It was supposed to be a bright story-

(Laughs) This doesn't continue as a story.

So, back to what I was talking about a while ago, I can't cover it up with a book cover, and if the story doesn't have a coherent development, I have no choice but to come up with a title.

That allows me to concentrate to some extent, and draw at least the title page.

This is the page with that title, but that's what ultimately led me to the idea that I finally settled on. It's the story of a young girl who entrusts a message to a homing pigeon.

Doves fly over the Appian Way

You can see the tombstones and pine trees lining the road

This red line represents the flight track of the pigeon, and you can't see the red line because you're standing in the pigeon's point of view.

Because at this point it's possible and necessary to get the feeling of flying over the city without moving.

You'll pass by the Pyramid of Sesius, and even if you haven't been to Rome recently, you'll be familiar with this landscape, past the gatehouse.

It's kind of funny here

Things happen that homing pigeons don't do. Pigeons take long, scenic routes.

Fly around the Colosseum, past the Church of Santa Maria in Cosmedin and the Temple of Hercules, towards the river

The Michelangelo-designed window frame almost crashes into the Palazzo Farnese, but it is said to have been made from stones excavated from the Colosseum.

Descend towards Piazza Campo de' Fiori

This is what I show my students, but it's a complete transformation of the facts, because it completely ignores the rules of perspective.

The only thing the rules of perspective need is to look like they're right, and then they're right.

Now imagine where the vanishing points meet again, some on Mars, some in the city of Cremona.

If you go to the square in front of the church of Santa Maria della Pache, of course there are children playing soccer, and this is where you hit the soccer ball.

This is a picture of being hit by a soccer ball.

Here's the whole piece: part of the church of Santa Maria della Pace, part of a soccer ball, a little bit of a bird's wing, but there's no development from there, so I'm going to revisit it here.

If you want to see the church of Santa Maria della Pace, the book is very flexible and interactive with the reader.

The red line expresses the impact you feel while walking along the path.

Here the bird reconciles itself, past the medieval towers, which are, by the way, one of the few surviving medieval towers today. Heading to the Church of Santa Anese, it circles Piazza Navona and looks down from the vault. take a breather

Now let's go inside. It's possible because we're flying, right? You don't have to worry too much about gravity here.

I get a little excited when I pass in front of the statue of Christ, so it's no wonder they're trying to imitate architecture here.

The walls are full of elements where the past and the future intersect, such as the neon sign that says "Restaurant" and the beautiful motifs carved into the walls.

In time you'll reach the courtyard of the Palazzo, and this is your final destination.

Go through the courtyard to the small window in the attic, where you'll find someone working at the drawing board.

I'm going to unfold the message on the bird's foot, and here's what the message says.

Now, if you look at the drawing board, you can see what I'm doing here: a map of the pigeon's journey, with the red lines connecting the landmarks.

And finally, if you need information to complete the cycle of understanding, all you have to do is read this sentence.

thank you

When we think of mapping a city, we tend to think of roads, sidewalks, buildings, stories about how the city came to be, or bold visions of urban designers, but there are many more ways to map cities.

Today I'd like to introduce you to a new kind of map.

This map does not represent geography

Each dot represents a person, each line represents a person's relationship, and the communities within the network are color coded.

I'm in this green area on the far right, where the geeks are, and TEDx is the same.

We meet the same people over and over again because we don't venture deep and wide in the city because we don't venture deep and wide in the city.

On the other side of the network, there are people who like hip-hop and things like that, and they feel more comfortable in the climate of the DMV (Washington, D.C., Maryland, Virginia) than they do in redeveloped Baltimore.

In the center, you can see something that connects the two communities, which is sports.

We have the Baltimore Orioles, the Ravens, and the Olympian, Michael Phelps.

The famous Under Armor company is also in Baltimore, and it's the only community that's interested in sports that connects communities at both ends of the network.

See San Francisco

Here we see something different

Media, politics, and news groups are common in other cities like Baltimore, but the ones that stand out the most are the geeks and techies that make up the top half of the network.

As you can see, the tension that's going on in San Francisco -- the fear that the city is becoming more high-income, or that the tech startups are bringing in new wealth and new immigrants -- is real.

The LGBT community doesn't seem to have the same kind of affinity with the geek community or the art or music community.

So this is what happens

[Kick out Twitter] This picture someone sent me a few weeks ago shows the reality of what's going on in San Francisco right now.

Let's see Rio de Janeiro

I've spent the last few weeks collecting data on Rio, and what really stands out about this city is that everyone is really, really mixed.

This is a very diverse city, unlike Baltimore or San Francisco.

We still see groups of governments, newspapers, politicians, columnists.

TEDxRio is on the bottom right, right next to bloggers and writers.

And then there's a really wide variety of people who are interested in different kinds of music.

Even Justin Bieber's fans are visualized in detail.

Other boy bands, country singers Gospel music, funk and rap Stand-up comedy There's even a strip dedicated to drugs and jokes

Isn't that amazing?

Fans of the CR Flamengo football team are also here.

We see the same spread of people in sports, civic activism, the arts and music, but in a completely different way. To me, this is a good representation of what we think of as Rio, a multicultural and diverse musical city.

We have these data

There's an incredible wealth of data available about cities, perhaps more than anything we've ever had.

So what can it do?

Well, first of all, we can understand that racial segregation is socially constructed.

It's a result of our choices, and there are ways we don't. And if you think about it, what we're doing is pointing a space telescope into a city, as if it were a huge high school cafeteria, and peering in to see where everyone is sitting.

Maybe it's time to mess around with that seating arrangement.

And the other thing we're finding is that racial categorization really narrows the spectrum of diversity.

We're including people of all races on this map, but looking only at race doesn't do much to help foster a diverse society.

So if we're going to solve social problems in terms of diversity, we first have to change how we think about diversity.

Finally, we can create interventions to reshape our cities, and if we have the ability to do so, isn't it our responsibility to do so?

So what is a city?

Some might call it a geographic area of ​​streets and buildings, but I think a city is a collection of relationships between the people who live in it, and if we can paint these relationships as they really are, then maybe we can create the cities we want.

thank you

(applause)

I was on a long trip this summer and had a wonderful experience listening to Isabel Wilkerson's classic book, "The Warmth of Other Suns."

It's a documentary chronicling the period between 1915 and 1970, when six million black people sought hope in North America to escape the violence in South America.

The beatings of black men, the torture by fire, and the lynching were especially unbearable to hear.

I couldn't help but say, "Oh, that's enough."

"I need a break. Let's listen to the radio."

And I turned on the radio, and in Ferguson, Missouri, Michael Brown, an 18-year-old black boy, unarmed, beaten to the ground by a white police officer, he fell to the ground, bleeding for four hours, while his grandmother, his young children, his neighbors looked on in horror, and I thought, again.

Violence and brutality against black men has been going on forever.

So it's the same thing, just with a different name for the victim.

It's Amadou Diallo

Sean Bell

Sometimes Oscar Grant

And maybe Trayvon Martin

This violence and this barbarity is part of the spirit of our nation.

It's the history we've made

what should we do?

Did you know that there are still people who, when they see a young black man, dodge to the street across the street, lock the door, clutch their wallet?

this point

Of course, we don't shoot people down in the street, but surely we have the same kind of stereotypes and prejudices within ourselves that cause so many tragedies.

I came even though I was taught that way

I believe that incidents like this can prevent another Ferguson tragedy through self-reflection and a desire to change.

So here is my suggestion

I want you to think about three things today, to prevent a repeat of Ferguson's tragedy, and to change the image of black youth. These ideas are not just about protecting them, but about opening up the world for them to thrive.

How about that?

Can you imagine our country lovingly enveloping them, treating them as part of their future, giving them a world of openness and the kindness they deserve for their loved ones?

How wonderful would our lives be? How nice would our country be?

The first idea is

escape from denial

Don't try to be "nice"

All you need is a real human being

I've done a lot of work on human diversity, and people approach me before workshops.

"Hello Ms. Diversity, nice to meet you." (laughs) "But we're open-minded."

I reply, "Yeah! Really?

I do this job every day and I often find prejudices in myself."

I was on a plane recently, and I heard the voice of a female pilot on the announcement, and I was so excited.

"Ah, you're a woman. Amazing."

"We are in the stratosphere"

Everything was fine, but suddenly it started to shake I thought to myself, "I hope she can drive."

(Laughter) yeah yeah

I didn't even realize it was prejudice until I got on the flight home, where there was a male pilot, as usual, and although I often shook, I never questioned the pilot's skill.

no problem for the pilot

Here's the problem

If someone asked me this question in person, I would say, "Women pilots are great."

But when things get unsettled and things get nasty and dangerous, that's when prejudices come out that we don't realize.

In airplanes moving at high speed in the sky, male pilots are preferred.

this is the default in mine

Male is standard value

who is your standard?

who do you rely on

Who are you afraid of?

Who do you want to get involved with in your heart?

Who are you avoiding?

i want to tell you what i learned

You can take the subconscious association test online to measure your unconscious bias.

Results from 5 million people

It's become clear that our standard is white, we like white people.

we like white people what's that?

When presented with images of blacks and whites, people associate positive words with images of whites faster than they can spend with images of blacks.

When we see a black face, we associate it with negative words more easily than when we see a white face.

Seventy percent of white people who took this test viewed white people favorably.

50 percent of blacks also liked whites

We were unconscious when there was prejudice

What do we do with this fact that the brain associates unconsciously?

I think what you're probably thinking is something like this: I'm going to keep pretending that I have no skin color bias.

do it again

would you recommend it? no

We've worked as hard as we can to eliminate prejudice, as if we can't see the color of our skin.

The problem isn't that we see the color of our skin, it's what we do about it.

Ignoring skin color is a false ideal

While we acted like we couldn't see the difference in skin color, we didn't realize the many ways that racial differences affect people's potential, rob them of their chances of living a rich life, and sometimes lead to premature death.

In fact, what scientists are saying is ridiculous.

It's ridiculous to ignore skin color

And what they recommend is to stare at these great black people.

(Laughter) You look at their faces and you remember them, because when you look at people who are great people and who are black, you break the associations that your brain makes on its own.

Why am I showing you all these amazing black men in the back?

Finally sorted out and got this number

Okay, now I'm going to reset your automatic associations when you see black people.

Did you know that these young black men grew up to be great personalities and made our lives better?

Now

One scientific way is to temporarily influence this automatic prejudice.

Remember (serial killer) Jeffrey Dahmer and (politician) Colin Powell.

See, it worked, didn't it? (Laughter) That's the thing. Be aware of your prejudices.

Please, don't be stubborn, be open-minded, and look for data that will tell you that the old stereotypes you've held are wrong.

So that's the first thing. And the second thing is, don't walk away from black young people, walk up to them.

It's not that hard, but it's one of those things that you try to do deliberately.

A few years ago, I was on Wall Street with a wonderful Korean colleague I was working with on racial diversity.

We were walking outside late at night, lost and wandering around

And there's a black man across the street and I'm like, "Oh, nice black man."

I walked towards him without thinking

Her response was, "Oh... are you talking to me?"

He's black across the street

Black men usually know their way

I don't know why you think that - but I do.

She said, "Your response was like, 'Yeah! It's a black man!'"

"I was like, 'Oh my gosh, that's a black man!'" We both went in completely opposite directions.

And she said, 'Oh, I'm a diversity consultant

I'm prejudiced against black men and I'm a person of color too! ”

I said, "I'm begging you to relax your shoulders."

You see, me and the "black man" have been friends for a long time.

(Laughter) My father is black, too, you know?

I have a 190cm black son and my husband is also black.

I know black men very well, so when I see a black man, I know what kind of person he is, and he was kind, too.

He said, "Let me show you where you two are going."

Prejudice is the story we make up before we know people Prejudice is the story we make up before we know people

But how do we, who grew up being told to look out for them and avoid them as much as possible, know them?

So even if you're worried, please walk towards them

Of course, depending on the time and circumstances, I'm not saying you should take risks.

Please reconsider your friendships and expand your social and professional circles.

who is in your social circle

Who is missing?

How many genuine friendships do you have with young black men and women?

Or a friend who is "very different" from you? Or a friend who is "very different" from you?

I looked around a little

At work, in class, at church - black boys are out there and you're good

I will say hello

But what I'm saying is, go deeper, closer, more than that, and build a relationship where you can see the full picture of the person, build a relationship where the stereotypes disappear.

I know there are people who can relate to me, especially my white friends who think, "You don't know I'm clumsy, do you?

It's impossible to do something this difficult!

Absolutely fail! ”

Yeah, maybe, but it's not about being perfect, it's about connecting with people.

And if you're afraid of failure, you'll never succeed.

I mean, I just have to do it

My message to black youth is that when someone walks up to you with an open heart, accept the invitation.

Not everyone wants to punish you

Find people who see your humanity

Relationships with people who are different from you create empathy and caring.

And then something very powerful and wonderful happens, and gradually you start to realize that they are you, they are part of you, they are part of your family, you are yourself.

So step out of your comfort zone and into something bigger and brighter, because that's how you avoid another tragedy like Ferguson.

That's how we create communities where everyone, especially black youth, can thrive.

It's going to be a little harder at the end, I know, but I'll say it anyway.

When you see something, you have to have the courage to say it, even to the people you love.

Holidays are coming and we'll all be sitting around the dinner table and having a good time together.

While many of us are spending the holidays at home with our families, you're listening to conversations at the dinner table.

"Grandma is a bigot," she says.

(Laughter) "Uncle is a racist."

But we love Grandma and Uncle, of course.

They're nice people, but they're saying the wrong things.

I should point out that because the table has

I have children too

Why do you think these prejudices persist and are passed down from generation to generation?

because we say nothing

Everyone has to be proactive and say, "Grandma, don't say things like that anymore."

"Uncle, he shouldn't be treated like that.

No one should be treated like that."

It's important that we don't hide our children from the ugliness of racism, especially in families with young sons, because black parents don't have that luxury.

We are dear children, to tell our future that we have a great nation of great ideals, that we have worked so hard to make so little progress, but that it is not over yet.

We all still have feelings of racial superiority that still take root in common sense, in society, and across generations, creating despair, fostering injustice, and destructively devaluing black youth.

Tell your children that when we still see the color of our young black people, it's difficult to see their character at the same time. But you can help them change this society for the better, to fight injustice and, above all, to make a society where black people are judged more by who they are than by the color of their skin.

So many great black men, the greatest politicians, the bravest soldiers, the hard workers...

These people are mighty missionaries

They were talented scientists, artists, and writers.

a dynamic comedian

A loving grandfather or a gentle son

They're strong fathers, young people with their own dreams.

thank you

(applause)

While preparing for this talk, I tried to relive my life, to find out when and exactly where this journey began.

A long time passed, and I simply didn't know where my story began, where it was in the middle, and where it ended.

I always thought it started one afternoon in the community when my mother told me that I had escaped three arranged marriages by the time I was two.

Or it could have been the night in the community when the lights went out for eight hours and my father sat around us all telling stories about his struggles as a child.My grandfather was a farmer and he wanted my father to work in the fields.

One dark night when I was 16, three children came up to me and whispered in my ear that your friend was murdered in some kind of honor killing.

But then it became clear to me that these things were the biggest triggers of my journey. But that wasn't the beginning. My real journey began in front of a mud house in Sindh, Pakistan's outback.

In some ways, I feel like my life is the result of some wise choices and decisions my parents made.

Just like that, another decision my parents made was to keep me and my siblings connected to our hometown.

We lived in a community that was loosely called Livabud, which means poor man's town, but my father was determined to have a home in the countryside.

I came from a very poor tribe deep in the mountains of Balochistan called Burahui.

Burahui or Brohi means mountain dweller and is also a name in our language.

Thanks to my father's very strict customs of following their own customs, we were able to live a wonderful life with songs, culture, traditions, stories, mountains and lots of sheep nearby.

At the time, it was hard for me to live the extremes of living in my village, between the traditional life and being educated in a modern school.

I knew I was the only girl with that kind of freedom, and I felt guilty about it.

While I was attending school in Karachi and Hyderabad, many of my cousins ​​and childhood friends got married.

We've seen beautiful traditions, but their charm has faded with the disappointment of having a girl, and with women's perseverance being a virtue.

Until I was 16, I healed my grief by crying. Most nights when everyone was asleep, I would bury my face in my pillow and sob until that night when I found out that my friend had been killed in the name of an honor killing.

"Honour killing" is a practice where if a man and woman are suspected of having an extramarital or premarital affair, they are killed by her family.

Usually it's the brothers and fathers and uncles of that family who kill them.

The United Nations reports that there are about 1,000 "honour killings" committed in Pakistan each year, and only those that are reported.

I had no idea what that murder meant, and I thought I had to do something about it.

Instead of crying alone in bed

i thought i would do something to stop it

I was 16 -- I wrote poetry and went door to door telling people why honor killings happened and why they should be stopped, and started raising awareness until I actually found a much, much better way to deal with this problem.

At the time, we were living in a very small one-room house in Karachi.

Every year during the monsoon season, our house was flooded with rainwater and sewage, and my mother and father shoveled the water outside.

Around that time, my father brought home a big machine, a computer.

It was so big that it looked like it would take up half the room, and it had all the parts and wires you needed to hook it up.

It was the most exciting thing ever for me and my sisters.

My oldest brother, Ali, was put in charge of managing the computer, and we all used it for 10 to 15 minutes each day.

As the eldest of eight children, I used it for the last time, washing the dishes with my mother, cleaning the house, preparing food, putting blankets on the floor, and then finally going to the computer, and then finally going to the computer, and finally connecting it to the internet, and spent 10 to 15 minutes of pure joy and amazement.

That's when I discovered a website called "Jigl"

[Google] (Laughter) I really wanted to do something about this practice, so I turned to Google and found Facebook, a website that allows people to connect with anyone in the world. From my tiny cement-roofed house in Karachi, I connected with people in England, America, Australia, and Canada.

In just a few months, it became huge.

Received a lot of support from all over the world

Became interviewed by the media

Many people have reached out to help raise our awareness.

The movement has grown so much that it has spread from online to every corner of our hometown, and we have rallied and gone on strike in our hometowns in support of women, trying to change the policy of Pakistan.

When I thought everything was going well, my team, basically my friends and neighbors at the time, thought everything was going well, but they didn't know that there was a big opposition coming their way.

They stood up against our organization, saying my community was spreading anti-Muslim behavior.

We challenged the centuries-old customs of this district.

I remember my father receiving an anonymous letter that said, "Your daughter is trying to spread Western culture in this honorable society."

Our car was hit by a stone

One day, when I went to the office, the metal sign had been smashed as if a heavy object had been thrown at it by many people.

Things were getting worse and I had to hide myself in various ways.

I closed the windows in my car, veiled my face in public, and didn't speak in public.

When I was 18, I returned to Karachi and thought that this was the biggest mistake of my life.

i was devastated

As a teenager, I blamed myself for everything that happened.

And looking back, I realize that it was certainly my fault and my group's fault.

There were two big reasons why our work was a big failure.

The first reason is that we stood up against people's core values.

We said no to something very important to them, challenged their customs of honor and hurt them deeply in the process.

And the second thing, which was very important to me, and surprisingly surprising, was that we didn't involve the real heroes in this movement, who should have stood up for themselves.

The women in the village didn't know that they were fighting for themselves in the area -

Every time I came back, I found cousins ​​and friends with scars on their faces, and I asked them, "What happened?"

And they said, "My husband is beating us."

But we're working locally for you!

we are trying to change the policy

So why don't they change their lives?

Then we found something very surprising.

National policies don't necessarily affect tribal or rural communities.

It was shocking—are we really doing nothing?

We found a huge gap between official policy and the real truth on the ground.

So I thought I'd try something different this time.

Tried to use strategy, tried to go back and apologize

yes i apologize

We went back to the community and said we were so ashamed of what we had done.

We said we came to apologize and in fact we came to make amends with you.

How did you do that?

We want to promote three main cultures

I think it's music, language and embroidery.

No one believed us in the beginning

nobody wanted to exercise with us

I spent a lot of time talking to these communities, convincing them all, until they agreed to make brochures about their legends, their folktales, their stories, promote their language, make CDs of their drum beats and tribal songs, and sell their music.

And the third thing that I really like is that we've set up centers in villages to promote their embroidery.

this is how it started

We worked with a village to open the first center.

A day blessed with good weather

opened the center

Women came to embroider, and through a life-changing educational process, they are learning about their rights, what Islam says about women's rights, how to develop a business, how to make money, how to make more money from it, how they can fight the habits that have been destroying their lives for centuries, because in reality, in a Muslim society, women should be shoulder to shoulder with men.

Women have many social positions that we, and they, are not told about, and I must say that they need to know where their rights lie, because they can find ways to seize them for themselves, and we can't.

So this was a really widespread example -- it's pretty amazing.

Through embroidery we encouraged their traditions

We entered the village and brought the community together.

We created a center in which 30 women who came in were taught for six months the additional values ​​of traditional embroidery: business development, life skills and basic education, how to say no to our rights and bad practices, how to stand up as leaders for ourselves and for society.

Six months later, we helped borrow money and connect it to a market where they could become local entrepreneurs in their own communities.

We soon called the project Sgar.

Sugar is a local word used in many languages ​​of Pakistan.

It means a woman of skill and confidence.

I truly believe that there is only one thing that must be done to create female leaders, and that is to let them know that they have what it takes to be a leader.

The women you see here have powerful skills and potential to be leaders.

We just have to remove the barriers that hold them back, and that's what we decided to do.

But then, just as we thought everything was going well, everything went horribly wrong again.The next setback awaited us.Many men began to notice visible changes in their wives.

My wife started giving opinions and making decisions. My wife started taking care of all the problems in the house.

Husband keeps his wife out of the center. It's time to use the second strategy.

We went to the fashion industry in Pakistan and decided to investigate what was going on there.

You can see that the fashion industry in Pakistan is developing very strongly day by day, but we don't get much cooperation from the tribal areas, especially from the women in the tribal areas.

So we launched what is now called "Nomad," the very first fashion brand for tribal women themselves.

And women started earning more. They started contributing more financially to their families. So men had to think twice before they said no to their wives who wanted to go to the center.

(Applause) Thank you, thank you.

In 2013 we launched the first Sgarhub instead of the Center.

Together with Trip Advisor, we created a cement hall in the center of the village and invited many other organizations to work there.

We created a home for this non-profit organization to work on and address other issues that Sgar wasn't working on. It's been an easy place to train them, and they've used it for agricultural training, to buy and sell commodities, and to do whatever they want.

So far, we've been able to help 900 women in 24 villages around Pakistan.

(Applause) But the truth is, that's not what I want to do.

My dream is to reach out to a million women in the next 10 years, and to ensure that, this year we launched the Sgar Foundation in America.

It's not just trying to fund Sugar, but so many other organizations in Pakistan can replicate the idea and find more innovative ways to unbind the rural women of Pakistan.

thank you very much

(Applause) Thank you very much.

( Chris Anderson ) Khalidah, you really are a force to be reckoned with.

In many ways, this story is incredible.

It's hard to believe that someone so young can do so much with so much strength and ingenuity.

So the question is, this is a grand dream of reaching out and empowering a million women, but how much of your success right now depends on you, on the power of that human charm that you have?

How far do you plan to extend that dream?

(Kalida Brohi) My job is to give people great ideas and spread their dreams.

I can't tell you how to do it because there are so many different ways.

we are trying only 3 ways

There are many different ways to advance women's potential.

That's my job.

I'm going to keep doing it Sgar will keep expanding

We plan to extend a helping hand to two more villages, and I believe we will soon be able to reach out from Pakistan to southern Asia and beyond.

I love how you talked about your team in your talk, but you were 18 at the time.

What is that team like?

This is your friend from school, right?

Everyone in the village thinks I'm old enough to be a grandmother.

My mother got married at the age of nine.I am the oldest unmarried woman in my village and I have achieved nothing in life

Wait a minute, nothing?

Kaliida: Nothing. Chris: Traditionally, yes.

People feel sorry for me, mostly

But how much time are you actually spending in Balochistan right now?

i live there

I still go back and forth between Karachi and Balochistan.

All my siblings go to school

I am still the eldest of eight children.

But I'm sure some people see what you're doing as a threat.

How do you keep yourself safe? Do you feel safe?

Are you in danger?

I know that question has been asked many times before, but the word "fear" just hits me and then I can't see it, but there's a different kind of fear.

The fear is what will happen to the people who love me dearly if I'm killed.

My mother waits for me until late at night

My sisters want to learn more from me. And I have a lot of girls in my community who want to talk to me and ask questions. And I recently got engaged. (Laughter) (Applause) Is he here? stand up

(Applause) I escaped an arranged marriage to a truly different world, L.A., and I chose my husband.

I had to fight for a whole year, that's a whole other story.

But I think that's the only thing I'm afraid of, and I don't want my mother to be in danger when she's waiting for me to come home at night.

Those who want to help you, they can continue to help, maybe they'll buy you the clothes that you bring in that are actually made and embroidered in Balochistan.

that's right

Those people can also get involved with the Foundation, right?

Of course we need the help of as many people as possible. Right now, the foundation is in its early stages, and I have to learn a lot about how to run it, how to get funding, how to communicate with more organizations, especially online sales, which is very new to me.

I'm not a fashion person, it's true.

I am honored to have you on the stage.

Please stay brave and stay wise please stay safe

(Khalida) Thank you very much. (Chris) Thank you, Khalida. (Applause)

Today's theme is "Mathematics that talks about love"

As we all know, mathematicians are very good love seekers.

But it's not just that we're carnivorous, we're great storytellers, and we carry the best pencil cases.

Because we've actually done so much research and calculated how to find the perfect partner.

My favorite paper in this study is "Why I Don't Have a Girlfriend."

Peter doesn't have high hopes

Of the free women in England, Peter is looking for someone who lives nearby, who is his age, who has a college degree, who is compatible with him, who is attractive, and who finds Peter attractive.

(Laughter) The number that popped out was 26 people across the UK.

And the number that came out was 26 people in the whole of England.

The best guess is that this is 1/400th the number of extraterrestrial life that exists.

What's more, the chances of Peter going out for the night and meeting this special woman are 1 in 285,000.

Maybe that's why mathematicians don't go out of their way to go out at night.

But I'm not so pessimistic

Because, like you, love doesn't always work that way.

Human emotions are chaotic, irrational and unpredictable.

But that doesn't mean math is useless, because love, like much of life, is full of patterns, and math is all about the study of patterns.

Patterns vary, from weather to stock market volatility to planetary movements to predictions of urban growth.

To put it bluntly, all of this would be pretty chaotic and unpredictable.

I believe that mathematics is very powerful and can give us new perspectives on almost anything.

Even if it's something as mysterious as love

Now, to convince you of how wonderful and accessible math can be, here are three mathematically testable secrets of love.

Then, the first secret is "Online Dating Winning Method"

My favorite online dating site is OkCupid, after all, because it was founded by a team of mathematicians.

Like mathematicians, they've been collecting information on all users for almost a decade.

I'm trying to find patterns in it, patterns in how people talk about themselves and how they interact on the site.

And, seriously, I made an interesting discovery.

One of my all-time favorites is that online dating sites don't necessarily attract people with attractive looks.

please explain in detail

Thankfully, OkCupid allows you to optionally rate the looks of the opposite sex on a scale of 1 to 5.

Comparing this average score with the number of messages received shows the correlation between attractiveness and popularity on online dating sites.

Here's a chart that the folks at OkCupid made.

It's worth noting that people who are more attractive don't necessarily receive more messages.

But strangely enough, the people in the blue boxes are equally attractive, but they're significantly more popular than the people in the red boxes. Why?

Because good looks don't mean good

Let me give you a concrete example.

Let's say you have someone like the actress Portia de Rossi, and everyone says that Portia de Rossi is a very beautiful woman.

No one thinks she's ugly, but she's not a supermodel either.

What if I compare myself to someone like Sarah Jessica Parker, and I'm sure many of you, myself included, would agree that Sarah Jessica Parker is absolutely stunning and the most beautiful creature on the planet.

But some - mostly online posts

Some people say she looks a bit like a horse (laughs).

How attractive are Sarah Jessica Parker and Portia de Rossi? How attractive are Sarah Jessica Parker and Portia de Rossi?

But I think the distribution of ratings would be something completely different.

Portia's ratings center around a 4, because everyone thinks she's very beautiful, while Sarah Jessica Parker is divided.

There is a wide range of evaluation

In fact, this spread is important.

It's the range of ratings that makes these sites more popular.

So, as long as you have people who recognize your attractiveness, you'll do better if you're considered unattractive by others.

It's a lot better than everyone thinks you're the cutie next door. It's a lot better than everyone thinks you're the cutie next door.

If you put yourself in the shoes of the person sending the message, you'll see that it makes sense.

For example, let's say you find someone attractive, and other people aren't necessarily all that interested in that person.

You have less competition and more incentive to contact.

What if the person you find attractive is likely to find everyone attractive?

Honestly, do you really want to be embarrassed?

Here's where it gets interesting

When choosing photos to put on online dating sites, people do their best to hide what they might find unattractive.

A typical example would be someone who's slightly overweight deliberately altering a photo to hide their body, or a bald person choosing a photo with a hat on.

But if you want to succeed, you should do the opposite.

So, even if some people think you're unattractive, you should show what makes you different from others.

People who like you will love you no matter what, those who don't see only the good in you and it doesn't matter.

The second tip is how to find the perfect partner.

Let's say your love life is going great Let's say your love life is going great

But the problem here is how to equate romantic success with lasting happiness, and especially when to decide on "that person."

Generally speaking, the first person to do you a favor tells you that you shouldn't make a hasty decision and get married.

But at the same time, if you want eternal happiness, you don't want to wait too long.

My favorite author, Jane Austen, said, "A 27-year-old unmarried woman can never again hope to feel and arouse love."

(Laughter) Jane, thank you. You really know love.

So the question is, how do you know when it's time to settle down with a limited number of people in your life to date?

Luckily, there's a pretty sweet piece of math we can use here called "optimal stopping theory."

Let's imagine, ideally, you start dating at 15 and get married by 35.

During that time, you'll meet a lot of people you can relate to.In that time, you'll meet a lot of people you can relate to, with different levels of strength.

If you decide to marry someone, you can't know what kind of person you've met after that, and similarly, you can't go back in time and change your decision.

At least in my experience, I don't like being turned down because someone else is there and then being asked back years later.

So, mathematically, it should go something like this: The first 37 percent of people on the dating list who are on the list all turn down as serious marriage partners.

(Laughter) And then you pick the first person you feel is better than anyone you've ever met.

For example

By following this, you'll be able to implement the best practices to maximize your odds of finding the perfect partner, backed by mathematics.

Unfortunately, this also comes with risks.

For example, if the perfect partner appeared in the first 37%.

Unfortunately you will have to decline

(Laughter) And as long as you follow this mathematical formula, you'll never meet someone better than the one you met before, so you just keep saying no and you'll be alone until you die.

(Laughter) Maybe in the end you'll end up surrounded by cats.

Now there's another risk, and this time think about it, if the first 37 percent of the people you met were the most boring, boring, worst people.

Well, at this point, you're at the stage of refusal, so it's okay, you can refuse.

But if the next person I meet is barely boring, interesting and better

How about that

As long as you follow this method, you will marry that person.

You end up in a relationship that's literally second best.

It is unfortunate

But here's the opportunity, and the market, there's room for Hallmark to decide.

Like this Valentine's card (laughs)

"Dear Husband, You were barely better than the first 37% of people I dated."

it's pretty romantic for me

So you can't expect a 100 percent success rate with this method, but there's no better strategy than this.

In fact, some fish in the wild practice this exact same strategy.

The fish rejects the first 37 percent of the courtships that appear during the mating season and then chooses the next fish it meets that is bigger and stronger than any fish it has ever encountered.

I think humans do this subconsciously too.

For a little while, we meet various people of the opposite sex and refine our sense of the market, so to speak, while we are young.

And it's not until you're in your mid-20s or later that you start seriously looking for a mate.

This is the definitive proof that the brain already has a little bit of mathematical circuitry embedded in it.

I told you my second tip.

Now, the third tip is how to avoid divorce.

You choose the perfect partner and you're going to spend the rest of your life with that person.

I think we all want to avoid divorce if we can, but not Piers Morgan's wife.

But the sad fact of the modern world is that one in two married couples in the United States end up divorcing, and the numbers are not much different elsewhere.

It could be argued that the quarrels that precede the breakdown of a marriage are not ideal subjects for mathematics research.

After all, it's very difficult to set what to measure and what to quantify.

But the person who did the research was psychologist John Gottman.

Gottman observed the conversations of hundreds of couples and recorded everything he could think of.

I recorded what conversations were going on, I recorded skin conductance responses, I recorded facial expressions, I recorded my heart rate, I recorded my blood pressure, so I recorded everything except whether my wife was always right, which, well, she was always right.

Gottman's team concluded that one of the most important factors in predicting whether a couple will get divorced is how positive or negative the two people in the conversation are.

The couples rated very low risk had more positives than negatives according to Gottman's criteria.

When the relationship is strained, people who are going to divorce are on a downward spiral.

With this very simple idea alone, Gottman's team was able to predict with 90 percent accuracy whether a couple would get divorced.

But it wasn't until I worked with mathematician James Murray that I began to understand why and how this downward spiral happened.

The conclusions they've arrived at are impressively simple and interesting.

These equations predict how a couple in conversation will react, positively or negatively, when they speak.

These formulas change depending on how a person feels when he's alone and how he feels when he's with his partner, but most importantly, how much the husband and wife influence each other.

Now, I would like to point out that the other thing that these equations can perfectly describe is the relationship between two countries in an arms race.

(Laughter) So, a couple who's arguing and spiraling down into the brink of divorce is actually mathematically equivalent to the beginning of a nuclear war.

(Laughter) But what's important about this equation is the impact that people have on each other, specifically what's called the "negative threshold."

Negativity Threshold This is like a critical point where the husband must be so bad that the wife will go mad, and vice versa.

I used to think that a good marriage was all about compromise and mutual understanding and allowing each other space.

So I thought that the most successful relationships had a very high threshold of negativity.

It's like a couple who closes their eyes to the small things and talks only about the big things.

But in fact, the answer that the math and the team came up with was that the exact opposite is true.

The best couples - the most successful couples have very low negativity thresholds.

These couples don't pretend to be ignorant, they allow each other to complain.

What's more, they're always trying to mend their relationship, and they're pretty positive about the future of their marriage.

Talking about everything or turning a blind eye to the little things makes all the difference.

Of course, it's not enough to just lower the threshold of negativity and try to build good relationships without compromise.

But it's very interesting that there really is mathematical evidence that we shouldn't let our anger hoard.

So far, I've given you three tips on how math can help you in love and relationships.

In addition to these uses of mathematics, I'd like to share a little personal opinion about the power of mathematics.

For me, equations and symbols are nothing dry.

They have a voice, speaking out to the breathtaking richness of nature and the astonishing simplicity of the patterns that twist and unfold around us, from the way the world moves to the way we behave.

I hope that couples will listen a little bit to the math of love, and love a little bit of math.

thank you

(applause)

Have any of you ever been tear gassed?

Is it tear gas? Anyone here?

Sorry, I'm sorry. You may know that this is a very toxic substance, but you may not know that it's a very simple molecule with an unpronounceable name: chlorobenzalmalononitrile.

I could say that!

It was invented decades ago, but in recent years it seems to be used very frequently by police forces around the world. From my own experience of being forced to breathe, tear gas has two opposite effects.

The first is to inflict severe pain on the eyes, and the second is to force them to open their eyes.

Tear gas has certainly opened my eyes, and that's what I'd like to share with you today. Personal live broadcasts via the web have the potential to radically change the face of journalism, activism, and, in my view, political discourse.

This idea came to me in early 2011 when I was covering the protests in São Paulo.

It was during those marijuana marches, where people were gathering to demand cannabis legalization.

As the group started marching, riot police attacked them from behind with rubber bullets, stink bombs and tear gas.

To make a long story short, I was among the protesters as editor-in-chief of a well-known magazine for 11 years, and when I left because of the inevitable effects of tear gas, I was determined to work on a new way of communicating the raw experience of a place like this.

The next week, I was in the protest again, and already had nothing to do with the press.

As an individual doing a live broadcast, basically all of my equipment was borrowed.

It's a backpack with a very simple camera and a 3G modem.

I provided a link to the stream that you could share on social media or embed on your website, and then the protests would be over.

no violence

There was no standing around

But I made a very interesting discovery. I could see a TV station broadcasting from a distance, but there was a team of broadcasters in a big vehicle and a bunch of cameras.

This was exciting for me as a journalist. But when I got home, it was even more interesting. I found that more than 90,000 people watched my broadcast.

I also learned that this was the first time in our country that an individual had live-streamed a street protest.

This surprised me. I'm not a computer geek, I'm not very tech savvy, it's something you can do with readily available equipment.

I realized that I was in very important, unexplored territory. All I had to do was change the way I looked at things a little bit. The web could be a huge, uncontrollable, anarchic television channel. Anyone with the most basic skills and simple equipment, even a stuttering person like me -- pardon me if it's hard to hear -- even someone like me could broadcast the news.

this seems groundbreaking

Over the next two years, we experimented with live broadcasting in a variety of ways, not only on the street, but also in studios and homes.

NINJA is an abbreviation of Narrativas Independentes Jornalismo e Ação, which means "independent commentary, reporting and action".

It's a collective for reporting without much media planning.

no financial base

And I didn't even think about making money off of it. It's a smart thing to do, and you shouldn't be thinking about making money with journalism right now.

But we had a firm, clear belief that social media, in a highly interconnected environment, should be able to create networks of experimental journalists across the country.

So we started by creating a Facebook page, putting out a statement, and then we started a very simple press out on the streets.

And then something happened, something unexpected happened, something no one expected.

Protests have begun in São Paulo

At first it was topical and thematic.

It's a campaign against city bus fare hikes.

this is a bus

"Thief" is scribbled on

Such demonstrations became widespread, and protests erupted.

And violent police crackdowns became more frequent.

But there was also another conflict here, and perhaps more important for the purposes of my talk, it was about the content of the report.

Against the "facts" reported by the mainstream media, anyone who was there could have argued that if they could show what they saw, it wasn't what was really happening.

It's this clash of perspectives and media coverage that has turned mere protests into long-term political change in our nations, driving hundreds of thousands, perhaps millions, to take to the streets across the country.

It's no longer just about bus fare hikes

everything was protested

People's demands, their expectations, their reasons for protesting are varied and often contradictory.

If you read what's written on these placards, you'll understand.

These events were part of the process of resolving political grievances in this country, and they were, of course, political, but they were also new ways of organizing action through the emerging means of communication.

It's against this backdrop that Media Ninja has gone from being largely unknown to becoming a national phenomenon, and that's because we had the right equipment.

we don't have big tv cameras

This is basically what I use

i am using a smart phone

It allowed me to blend in with the protests I was covering, and it allowed me to do other things as well, like being able to show what it was like to be in the middle of a protest, and for the people at home to see it through the eyes of the party.

But I think there are more important things than equipment.

That's the mindset, we're not part of a media company.

We're not competing for the scoop.

I'm trying to get people to participate, and I'm trying to teach them how to do this kind of reporting, how to become a broadcaster.

This was a key factor in how the small group of media Ninja exploded across the country in just a few weeks.

Within a week or two, as the protests continued, hundreds of young people from all over the country were formed, connected by this network.

I was broadcasting in over 50 cities at the same time.

It's something no TV station has ever done.

And that's why we're suddenly the dominant force on social media.

The number of followers on our Facebook page grew from a few thousand to 250,000 in no time.

Our posts and videos have been viewed 11 million times in one week.

This is a much higher number than newspaper and magazine sites.

Through this, Media NINJA has transformed into something more than just a single medium or a single media project.

It was as if it had become a public service to citizens, to protesters, to activists, because it became a very simple, efficient and peaceful means of countering powers like the police and the established media.

Our images began to be used in regular television broadcasts.

When things got tense, our live broadcasts started being broadcast on regular television.

Our footage helped free people from prison who were wrongfully arrested on false charges, and we were able to prove their innocence.

But unfortunately, media NINJA quickly came to be seen as enemies of the police and were beaten badly and arrested in the streets.

there was a lot of that

But because we were still connected, even that helped spark important debates about the role of the media and the state of press freedom in our country.

And so media NINJA evolved into what we wanted it to be -- a national network of hundreds of locally organized young people reporting on social and human rights issues, and expressing themselves not only as political activists, but as journalists.

So what I did at the beginning of the year -- Media Ninja was already an autonomous network -- I decided to dedicate myself to another project.

It's a project called Fluxo, which means "flow" in Portuguese.

In a news studio in the heart of São Paulo, we're experimenting with what I call a post-TV format, live.

Not only that, but I'm also trying to fund independent journalism through direct relationships with an active audience, because I'm sure you want to make a living doing what you've decided to do under tear gas.

But there's something more important than my personal example, which I think is much more important.

I said that live broadcasting turns the web into a huge television network, but it does more than that. And what I've noticed from seeing how people are using it is that it's not just reporting, it's politically organizing and expressing opinions. Because it frees us from the monopoly of the family, empowers citizens in ways that don't directly involve others, like story sharing and dialogue, and allows us to challenge and influence power in ways that we'll see.

And I think it can do something that might be even more important. I think the simplicity of this technology is that you can bring the objective and the subjective together in a very political way, because it's a huge help for viewers and citizens to see the world through someone else's eyes and put themselves in someone else's shoes.

To do so, I believe, is what good journalism, good activism, and most of all, good politics should aim at.

Thank you very much.

(applause)

In the past, if you wanted a computer to do anything, you had to write a program.

You may have never programmed before, but you need to specify exactly what your computer needs to do in order to do what you want it to do.

So it's hard to write a program without knowing exactly how to do what you want to do.

That was the problem faced by the person in this picture, Arthur Samuel.

In 1956, he wanted to create a program that could beat him at checkers.

But how can you better describe in detail the steps to point to a checker than you can?

He came up with a better way: let the computer learn itself by playing a thousand checkers games against itself.

This worked, and the program was actually able to beat the Connecticut state champion in 1962.

So Arthur Samuel is the father of machine learning, and I owe him a lot, because I make a living out of the application of machine learning.

Keggle, which I headed, has over 200,000 machine learning professionals.

At Keggle, we've run hundreds of successful competitions with never-before-seen problems.

From that perspective, I've learned a lot about what machine learning used to do, what it does now, and what it will be able to do in the future.

Google may be the first example of machine learning becoming a major commercial success.

Google has shown that information can be found by algorithms using machine learning.

Since then, there have been many commercial success stories of machine learning.

Companies like Amazon and Netflix are using machine learning to suggest products that users might want to buy or movies that they might want to watch.

Its accuracy is sometimes eerie

LinkedIn and Facebook suggest people you might know, and you have no idea how they know, but they're also using the power of machine learning.

Instead of being programmed in detail, it uses algorithms that learn from the data what to do.

That's how IBM's Watson defeated two Jeopardy world champions, and he was able to answer the complex questions you see here.

[In 2003, the ancient "Lion of Nimrud" disappeared from the town's national museum (along with many other artifacts)] It's thanks to machine learning that self-driving cars are possible.

For example, it needs to be able to distinguish between trees and pedestrians.

I don't know how you could write specific steps to do something like that, but machine learning made it possible.

In fact, this car has driven millions of miles on normal public roads without any accidents.

Computers can not only learn, they can learn things that they don't know how to do, and they can even do better than humans.

One of the most spectacular examples of machine learning was when I hosted a project at Keggle where a team from the University of Toronto led by Jeffrey Hinton won a drug discovery competition.

What's amazing about this is that the team that broke the algorithm developed by the pharmaceutical giant Merck and a team of experts in the field had no one with a solid background in chemistry or biology or life sciences, and they did it in just two weeks.

How was it possible?

They used an algorithm called deep learning.

I think you can see how serious this was when it was on the front page of the New York Times a few weeks later.

On the left side of the screen is Jeffrey Hinton.

Deep learning is an algorithm inspired by how the human brain works, and there are no theoretical limits to what can be done.

The more data and processing time you use, the better the results.

The New York Times has another great example of deep learning in its article, which I'm going to show you.

It shows that computers can hear and understand people.

(Video) The last step I want to add to this process is to actually have them speak in Chinese.

The key here is to create a text-to-speech system that takes the vast amount of information I've got from Chinese speakers and turns Chinese text into speech, and then uses an hour or so of my own voice data to tune the system to make it sound like I'm speaking.

still not perfect

make a lot of mistakes

(Speech-synthesized Chinese translation) (Applause) There's still a lot more work to be done in this area.

(Speech-synthesized Chinese translation) (Applause) This was at a conference in China.

It's not often that you get a round of applause at a conference, although TEDx has a much more free atmosphere.

Everything you saw was made possible by deep learning.

(Applause) Hi

English transcription is also deep learning

The Chinese translation of the text in the top right is also done with deep learning, and deep learning is also used to synthesize speech.

deep learning is awesome like this

It seems like a single algorithm can do almost anything, and a year ago I learned that deep learning can also "see."

In a strange competition called the German Road Sign Recognition Benchmark, it was shown that deep learning can identify such road signs.

Not only did it do better than any other algorithm, but it did, as you can see on this scoreboard, twice as accurate as the second-placed human.

In 2011, we had a case where a computer could see better than a human.

A lot has happened since then

In 2012, Google announced that a deep learning algorithm watched YouTube videos, processed data on 16,000 computers for a month, and then the computers learned concepts like "people" and "cats" on their own.

This is close to how humans learn.

People learn what they see rather than being taught what they see.

Also in 2012, Jeffrey Hinton, who was mentioned earlier, won the famous ImageNet competition, which was to try to figure out what a picture was in 1.5 million images.

As of 2014, the image recognition error rate is up to 6%.

It's also more accurate than humans.

Machines have come to do a very good job of this, and they are being used commercially.

For example, Google announced last year that it mapped every street address in France in two hours, and it did so by feeding Street View images into a deep learning algorithm to identify street addresses.

I don't know how long it used to take. It would have taken dozens of people and years.

This one is from China's Baidu

It's like the Chinese version of Google. The top left image is what I uploaded to Baidu's deep learning system, and the bottom row is the result of the system understanding that image and gathering similar images.

Similar images have similar backgrounds, similar face orientations, and even tongue sticking out.

I didn't find it by the text on the web page

I only uploaded images

Computers now understand what they see and can search databases of hundreds of millions of images in real time.

What does it mean for a computer to be able to "see"?

But you can do more than just see

Deep learning can do more

Deep learning algorithms can understand complex and nuanced sentences like this.

What you see here is the system from Stanford, where the top dot is red, indicating that the sentence as a whole expresses a negative sentiment.

Deep learning is now able to understand what a text is saying about something with near-human accuracy.

Deep learning is also used to read Chinese, with the accuracy of native Chinese speakers.

It was developed by a Swiss team, but none of them could speak Chinese.

Deep learning is the best system for this, as good as native humans.

This is a system that I built at my company that puts it all together.

These images have no text associated with them, and as you type a sentence, it understands the image in real time, identifies what the image is, and finds an image that closely resembles the written sentence.

So they understand my writing and these images at the same time.

You've probably seen something similar on Google's site, where you type something and it shows you an image, but what you're actually doing is searching for text on web pages.

It's very different from understanding images.

It's only in the last few months that I've been able to do this.

I showed you that computers can not only see, but they can also read, and they can understand by listening.

So it may not surprise you to say that you can even write.

This is the text that I generated yesterday with a deep learning algorithm.

Here's the text generated by Stanford's algorithm.

A sentence describing each image is generated by a deep learning algorithm.

Algorithms have never seen a man in a black shirt playing a guitar before.

I've seen "man," I've seen "black," I've seen "guitar," but this caption is new and unique to the image.

When it comes to writing, computers still fall short of humans, but they're getting there.

Tests show that computer-generated sentences are preferred 1 in 4 times.

It's only been two weeks since this system was built, so if things continue as they are, I think that computer algorithms will probably outperform humans within the next year.

So computers can also write

Putting these together opens up some very interesting possibilities.

In medicine, for example, a team in Boston announced that computers had discovered dozens of tumor characteristics that could help doctors make cancer diagnoses.

Similarly, a group at Stanford has developed a machine-learning system that looks at magnified images of tissue and predicts survival rates in cancer patients more accurately than human pathologists.

In both cases, not only are the predictions more accurate than humans, but they also provide new scientific insights.

In the case of radiology, it's a new human-understandable clinical indicator.

In the case of pathology, we found that not only the cancer cells were important in the diagnosis, but also the cells surrounding the cancer.

This is contrary to what pathologists have been taught for decades.

In both cases, the systems were developed by a combination of medical experts and machine learning experts, but last year we overcame this aspect as well.

Here's an example of identifying areas of cancer in human tissue under a microscope.

This system can identify cancerous areas as accurately as or better than a human pathologist, but it was developed using deep learning by a team with no medical knowledge or experience.

Similarly, this is a segmentation of neurons.

We can now segment neurons with the same accuracy as humans, but this system was developed using deep learning by people with no medical background.

I thought it was normal for someone with no medical background to start a medical company, so I decided to start one.

I was terrified to do so, but the theory seems to suggest that data analysis techniques alone can provide useful health care services.

Thankfully, it's received a very positive response, and it's supported not only by the media, but also by people in the medical community.

Our basic policy is to take care of the middle part of medical care, replace it with data analysis as much as possible, and let doctors do the part that they are best suited for.

I would like to show you an example

Generating a new medical diagnostic test currently takes about 15 minutes, and I'm going to show you that in real time, but I'm going to cut some of it down to three minutes.

Rather than creating a medical diagnostic test to show you, I'm going to show you a test that diagnoses images of cars, because it's easier to understand.

I'm going to start with 1.5 million images of cars, and I'd like to first sort them by the angle at which they were taken.

The image is completely unlabeled and we're starting from scratch.

Deep learning algorithms can be used to automatically identify structural regions in the image.

The beauty of this is that it allows people and computers to work collaboratively.

As you can see, we tell the computer what areas we're interested in, and the computer refines the algorithm based on that.

This deep learning system is in a 16,000-dimensional space, and it's spinning its axes in that space, trying to find new structural regions.

If it succeeds, it points out areas of human interest.

The computer was able to find a region, for example an angle.

Through this process, we'll gradually tell you what kind of structure we're looking for.

If this is a diagnosis of a disease, you can imagine a pathologist identifying areas of disease, or a radiologist pointing out potentially problematic nodules.

Sometimes algorithms can be difficult

now the computer is confused

The front and back are jumbled

So you have to be a little careful and manually separate the front from the back, and that's how you tell the computer that you're interested in this group.

And so we go on and on, and for a little while, we train our machine learning algorithms on hundreds of examples to improve them.

Some parts of the image have faded, but this is something we've already recognized how to understand.

And then by using the concept of similar images, the computer was able to find just the front of the car.

When that happens, humans tell computers what they're good at.

Of course, even at this stage, it can be difficult to separate certain groups.

Now, even if you let the computer rotate for a while, it's still a mixture of left and right images.

We're going to give the computer a little more hint, so that it can use a deep learning algorithm to find projections that can separate the right side from the left side as much as possible.

By giving that hint — it worked

I managed to find a way to tell the right side from the left side.

I hope you got the basic idea

This isn't about humans being replaced by computers, it's about humans and computers working together.

What we're trying to do is allow one person to do something in about 15 minutes that used to take a team of five or six people years.

This process requires 4-5 iterations

We can now classify 1.5 million images with 62% accuracy.

Then you can pick a large section and quickly check it for errors.

If it's wrong, I'll let the computer know.

By doing that for each group, we were able to classify 1.5 million images with 80 percent accuracy.

And then for the small number of cases that weren't classified correctly, think about why.

After 15 minutes of doing this approach, I was able to classify with 97 percent accuracy.

Techniques like this would solve a major problem in the world: the global doctor shortage.

The World Economic Forum says that developing countries need 10 to 20 times more doctors than they do now, and that it will take 300 years to train enough doctors.

What about using deep learning to address this by making healthcare more efficient?

I'm thrilled to have this opportunity

At the same time, I am also concerned

Countries in blue on the map have more than 80% of employment in the service sector.

What are services?

is like this

These things are also things that computers are becoming capable of.

Eighty percent of jobs in the developed world are made possible by the availability of computers.

what does this mean?

"It's okay because I can replace it with another job.

For example, a job as a data scientist.”

you might think

It doesn't take long for a data scientist to build something like this.

For example, the four algorithms I'm talking about today were created by a single person.

If this has happened before, and new ones have come along and replaced old jobs with new jobs, what would those new jobs look like?

It's a very difficult problem, because human capabilities only improve slowly, but deep learning systems improve exponentially.

We are one step away from being overtaken

Even if you look around now and think, "Computers are still stupid."

In five years, we'll hit the ceiling on this graph.

We need to think about this ability now.

I've experienced something similar before.

It's the industrial revolution, and there was a radical change in capabilities with the advent of the engine.

But after a while things calmed down again

There have been social upheavals, but once the engine was everywhere, things stabilized.

The machine learning revolution will be very different from the industrial revolution, because the machine learning revolution will never stop.

Better computers will take over the intellectual work, which will allow us to build even better computers, and change the world in ways the world has never seen before.

This effect is already visible

Over the last 25 years, capital productivity has increased, but labor productivity has flattened out and even declined slightly.

So I want you to start this discussion now.

When I explain this situation, they don't really take it seriously.

"Computers can't really think," "they don't have emotions," "they don't understand poetry," "we don't really understand how the mind works," etc.

What then?

Machines can now do things that humans were paid to do and spend their time doing. It's time to start thinking about how we can adjust our social and economic structures to reflect this new reality.

thank you

(applause)

The Power of “Mada”

I heard that a high school in Chicago requires a certain number of credits to graduate, but if they don't pass the exam, they get a "failed" grade.

How wonderful! I thought, "If I fail", I think "I'm no good" and "I can't help it anymore".

But when the grade you get is "Fail," you know you're on a learning curve, right?

It gives us the road ahead that leads to the future (which has yet to come)

Also, "failed" gave me a flash of inspiration that became a decisive turning point in the early stages of my research.

I tried to test how children deal with challenges and difficulties by giving 10-year-olds challenges that were just too hard for them.

Among them, there were children who showed surprisingly positive reactions.

I said things like, "I love challenges!"

They can develop their "abilities"! I understood that

I had what I call a growth mindset.

On the other hand, other students felt "miserable" and "worse."

According to their more "stagnant" mindset, intelligence was something to be measured, and they branded themselves a "failure."

Instead of surrendering to the power of "yet", I was trapped in the "now" present state.

what will the students do next?

Let me tell you about a research study

The stagnant students said, "If I fail one test," instead of studying more, "I'll probably cheat."

In another study, after a single failure, we looked for someone who had done worse than us, to reassure ourselves that we had unmistakably done well.

And in both studies, they shied away from difficult problems.

Scientists have measured the electrical activity that occurs in the brain when students are confronted with errors.

On the left are students with a stagnation mindset.

hardly active

escape from errors

nothing to do

On the right side, students with a growth mindset, the idea that many abilities can be developed.

they take it very seriously

My brain is burning with "still" as a friend

Growth-type children work slowly and carefully

These kids are doing error handling.

they learn from their mistakes and fix them

Now how do we raise our children

Are you nurturing it for the sake of the "now" rather than the "still yet to come"?

Are we raising a child who is obsessed with lining up '5's on the report card'?

Are we raising "children who don't know how to draw big dreams"?

Is your child's "greatest goal" the next 5 or the score on the next test?

Will we carry this constant short-term acknowledgment (need for admiration) into the rest of our lives?

Employers will be able to tell me that we've already raised a young generation who don't have the motivation to work on days when they don't have a reward (long-term reward) called a "bonus."

now what can we do

How can we connect "yet" to "what we can do"

I will show you some

First and foremost, praising them smartly, praising isn't about intelligence or talent.

it was a failure

don't do it anymore

Instead, praise the process they're working on: their effort, their method, their focus, their perseverance, their progress.

Admiration for this process creates strong, flexible children.

There are many other ways to turn "not yet" into "reward."

Recently, we teamed up with a game scientist at the University of Washington to develop an online math game that rewards "not yet."

In this game, students are rewarded by "effort, solution, and progress."

Ordinary math games get points for answering, "Now! Right!"

As a result, we found that "effort", "solution method", "work time", and "perseverance" increased when faced with very difficult problems.

I hope that the words “not yet” and “not passed” will give children “strong self-confidence”.

You can even change your own mindset!

In one research study, we taught our students that every time you push yourself out of your comfort zone to learn something new or difficult, the neurons in your brain make new and stronger connections, and over time you become smarter.

What happened? In this study, the students who weren't taught this growth mindset continued to perform poorly in school as they struggled through middle school.

We've demonstrated the kind of growth I've just shown you with thousands of children, especially those who have been underperforming.

Now let's talk about equality

In the United States, there are groups of students who are chronically underachieving, such as children on inner-city and Native American reservations, for far too long.

Most people had given up because they were still "insufficient"

However, when an educator gives a growth-oriented mindset class that is full of "still", "equality" emerges.

I'll give you just a few examples.

Scored in the top 5% of the national academic achievement test in the kindergarten class (compulsory education from the age of 5) in the Harlem area of ​​New York City in one year

Most of the kids couldn't even hold a pencil when they got to school.

Fourth graders who fell far behind in the South Bronx in a year are number one in New York State on math tests! in the 4th grade class of

Over the course of a year to a year and a half, students from schools on the Native American Reservation went from bottom to top in the district! Surprisingly, that area also included a wealthy neighborhood in Seattle.

In other words, indigenous children have transcended Microsoft kids.

This has happened because the way we think about "effort" and "difficulties" has shifted.

In the past, hard work and hardships were what made us feel stupid and give up, but now, hard work and hardship are the time when neurons are making new connections, stronger connections.

It's time for them to really "get smarter."

I got a letter the other day from a 13-year-old boy.

He said, "Dear Professor Dweck, I appreciate that your book is based on solid scientific research, and that's why I decided to do it.

I worked harder in school, and in my relationships with my family and with everyone at school - and I've experienced remarkable progress in each and every one!

I know now that I've wasted most of my life.”

Stop wasting your life! Now that we know that various "abilities" can be developed and nurtured, this is the "basic human right" of "all!"

thank you

(applause)

There are many superheroes in our world

but they have the worst super powers

So you can be transparent. For example, there are Catadors, people who make a living collecting recycled materials.

There are several reasons for the emergence of catadores, including social injustice, high unemployment, and an abundance of solid waste -- a flawed garbage collection system.

The catadors do the hard, honest, essential work that they do to help us all, but no one realizes it.

Here in Brazil, catadors collect 90 percent of the actual recycled waste.

Most catadors work individually, picking up trash from the roadside and selling it to junkyards for very cheap prices.

Sometimes I collect more than 300 kilos, and I use my bag, my shopping cart, my bicycle, my cahossa.

A cajossa is a cart made of wood or metal, and you see it on many streets in Brazil, more like graffiti art or street art.

I'll tell you about the first time I met these marginalized superheroes.

I'm a graffiti artist and an activist, and my art is social, environmental, and political in nature.

My job was to paint walls, but in 2007, I started painting in Cahossa with the hope that it would be a new way of helping cities.

But this time, I wanted to give Catador a voice.

Adding art and humor to the movement made it even more appealing and helped draw attention to the catadors, and it could also boost their self-esteem.

And now they're famous not only on the roadside, but also in the mass media and socially.

In short, I've never stopped working since I jumped into this world.

I've painted over 200 cahossa's in many cities, and I've been invited to do exhibitions and travel around the world.

And then I realized that Catador's underrepresentation wasn't unique to Brazil.

Catadors have been met in Argentina, Chile, Bolivia, South Africa, Turkey, and even developed countries like the United States and Japan.

And it was at this point that I realized we needed more people to buy into the movement, because this is such a big challenge.

And then I started a joint event called "Pimp My Carrosa." (Laughter) Crowdfunded.

thank you

(applause)

Garbage Cart Modification Operation? is a huge crowdfunding event in support of Catadors and their cahossa.

A catador can be supported by a wide range of wellness and medical professionals, including physicians, dentists, podiatrists, hair stylists, and massage therapists.

You'll also receive four items: a safety suit, gloves, a kappa, and a pair of glasses to see the city clearly, while their cahossa is being refurbished by some amazing volunteers.

And then they give out safety goods like reflective tape, horns, and mirrors.

And finally, when Kahossa's painting is done, it becomes part of a large, amazing, moving art exhibition.

"Garbage cart, remodeling strategy?" Sao Paulo and Rio de Janeiro

We did it in the city of Curitiba, but in order to take it to other cities, including overseas, we launched "Garbage Cart, Modified Operation? - Pimpx."

Anyone can join

In just two years, 170 catadors, 800 volunteers, 200 street artists, and over 1,000 donors have been involved in the event, and the movement is helping to educate local schools about recycling.

Catador has lost its previous low presence and is gradually being respected and appreciated.

With a painted cahossa, they won't succumb to prejudice, but rather, they'll earn more and have more contact with society.

From now on, I would like you to take a closer look and recognize the Catadors and other invisible heroes in your city.

See the world as one connection without borders and borders.

Believe it or not, there are 20 million catadores in the world.

The next time you see a Catador, please remember that they are an integral part of our world.

Obrigado Thank you for your attention.

(applause)

i am a lexicographer

I am working on making a dictionary

A lexicographer's job is to put every possible word in the dictionary.

But it's your job to decide what the words are, not mine.

It's up to all English speakers to decide if it's a word or not.

"Language" is what we use between people who agree to communicate.

By the way, when someone decides whether a word is good or bad, sometimes there isn't much reason.

That's why I say, "Because it's grammar!"

(Laughter) I don't really care about grammar -- I'll tell you.

However, there are actually two types of grammar.

One is the grammar in our brains, the rules that native speakers and good speakers of a language follow unconsciously when they speak.

It's also the grammar that children learn when they learn a language.

Let me give you an example. This is "Wag."

One is "a wug"

another one came out

became two

So two...

(Audience) wugs

that's right! You can make wag plural

this rule is in the brain

I didn't need to be taught, but I know

This experiment was developed by Professor Gene Berko Gleason of Boston University in 1958.

So it's been discussed for quite some time.

So these natural rules in our brains are more like natural laws than traffic laws.

If you ask me, there is no one who does not obey the laws of nature, right?

When you leave the house in the morning, your mother will say, "It's going to be a little cold today, so take your jacket with you, just follow the laws of gravity."

you don't say

On the other hand, there are rules that are more like manners than laws of nature.

In this case, words are like hats.

Once you know what a hat does, you don't have to say, "Don't wear a hat on your feet."

All you need to say is, "Can I wear my hat in the room?"

"What kind of person should I wear?"

"What kind of hat should I wear?"

These should be called secondary grammars, and linguists sometimes call them "usages" to distinguish them from grammars.

By the way, sometimes people use grammars like these rules to discourage the creation of new words.

but i think it's stupid

Because everybody always says, "Let's be creative, make new music and art, invent all kinds of technology."

But when it comes to words, they say, "Stop! Stop creating. Shut up, lads."

(Laughter) But I don't understand that attitude.

Words are wonderful and there should be more

That's why I want you to keep creating new words.

I will teach you 6 ways to create new English words.

The first method is the easiest

stealing from other languages

[Steal other people's stuff] (Laughter) Linguistics calls it "borrowing," but since you don't give back what you borrow, let's just call it "plagiarism."

We usually name things we like, like delicious things.

Chinese kumquat and French caramel are examples.

It also takes the name of cool things, like "Ninja".

That's Japanese. It's hard to steal from a ninja, so it's a great trick.

(Laughter) Another way to make words in English is to put two English words together.

This is called "composite"

English words are like Lego.If you put enough effort into them, you can put them together.

(Laughter) It's common in English: heartbroken, bookworm, sandcastle are all compound words.

Rather than having a mouth like a duck, why don't you make up the word "duckface"?

(Laughter) The way you make the next word is a little bit like compounding, but when you're putting too much effort into putting the word together and you're missing parts.

These words are called "composites," for example, brunch is a blend of breakfast and lunch.

A motel is a portmanteau of a car and a hotel.

Did anyone know that motel is a hybrid word?

This word has a long history, so many people don't realize it's missing something.

Edutainment is education and entertainment

electrocute is electric and kill

(Laughter) You can also change how words work.

Say "function transition"

It's about changing a word that behaves as one part of speech into another part of speech.

Did you know that "friend" wasn't a verb for "befriend"?

"Friend" used to be a noun, then it became a verb.

Almost any word in English can be turned into a verb.

Adjectives can also be nouns

Commercial was once an adjective, now it's a noun

The word green can also be used as a verb for "to green."

Yet another way of making words is "inversion."

take the words and add a little touch

For example, in English, you could edit from the editor

The origin of the verb "edit" is "editor"

This kind of retrogeneration can sound a little weird.

(Laughter) Another way to make words is to take the first letters and put them together.

National Aeronautics and Space Administration becomes NASA

Any word can do the same "Oh my God! (OMG!

)" It doesn't matter how funny the words are

All are proper English words

Absquatulate is a fine English word

Opportunist (mugwump) is also a fine English word

The words don't have to sound natural, it's okay to be funny

So why should we make words?

The reason is that every word is an opportunity to communicate your ideas and intentions.

new words attract people's attention

So people will pay attention to what you're saying, and you'll have a better chance of getting your point across.

A lot of people here today are saying, "In the future, you'll be doing this, helping this, helping you explore and invent."

But if it's a new word, you can make it right now

English has no age limit

Start making words today Send them to me and I'll put them in the online dictionary Wordnik

Thank you very much

(applause)

I'm a visual artist trying to move history forward by creating revolutionary art.

I dare you to say that I do not accept America's economic base, its social relations, its dominant ideas.

Through my work, I create transformational change, inviting the audience to look at the work and tackle the big issues.

Changing society is hard, but ideas are extremely important.

When you introduce yourself as an "artist," most people think you're a painter.

I'm making a piece like the one in the back

"Imagine a World Without America" ​​is a painting, but it uses a variety of media, including photography, video, and performance art.

In my current project, "Slave Rebellion Reenactment," we're going to recreate a slave rebellion outside New Orleans in November 2018.

In 1989, a piece I made was controversial because it treated the Stars and Stripes in a non-canonical way.

『What is the Proper Way to Display a US Flag?

(What is the correct way to raise the Stars and Stripes?) is a work of conceptual art that invites audience participation.

The photomontage says, "What is the correct way to raise the American flag?"

Underneath that, I put a notebook where I could write down my answers, and put a national flag at my feet so I could stand there.

For the photomontage, I used a picture of a South Korean student burning the American flag and holding a placard that said, "Go back to America, you bastard!"

Some answers were long, some were short.

Thousands of people in many different languages ​​were involved in this work.

Let me introduce you to a few: "I'm German.

If Germans admired the flag like Americans did, they would be called Nazis.

I think this flag is fraught with serious problems."

"This writer should be sent back to where his ancestors were - to the jungles of Africa, and then artistically scoop up manure."

"The flag at my feet symbolizes the oppression of this country, killing Indians and oppressed people all over the world My brother was also shot by Satsu Satsu kicked and rolled the body to see if he was dead He was wearing the Stars and Stripes.

Thank you, Dred Scott."

"As a retired soldier who has protected the Stars and Stripes, I will never protect you.

Get shot! — U.S. Navy SEAL"

Back then, people reacted violently to the Stars and Stripes, just as they do now.

Veterans demonstration in front of the Art Institute of Chicago.

Everyone was shouting, "Raise the flag, hang him up," and it reminded me of a lynching scene.

I got a ton of death threats, and the school I went to got a phone call about a bomb threat.

the situation was tense

President Bush later called it "a disgraceful piece of work," but I thought it was a great honor, and Congress outlawed it.

(Laughter) My friends and I flouted this law, burned the Stars and Stripes on the steps of the Capitol, and fought it out in the Supreme Court.

This act, and the legal and political struggles that followed, resulted in a landmark ruling that prohibited government from enforcing patriotism under the First Amendment to the U.S. Constitution.

let me explain a little more

this crowd wanted me dead

This time, what I tried to do was the catalyst for change.

This is me at the time, on the eighth floor above the crowd.

This photo was originally supposed to be taken at the stairway where the veterans are.

It must have been pretty dangerous to go there.

But this shot was so important, because while there are people trying to kill me, it was a moment when people who thought the Stars and Stripes represented all that was oppressive in this system had a voice, and it needed to be heard loud and clear.

In short, it takes a lot to change something — whether it's conventional thinking about American symbols, or conventional thinking that's been shaken by scientific breakthroughs, or the downfall of an autocratic president.

We need courage, luck, thought and boldness for action.

But as far as luck -- it certainly didn't work out that shoot.

After leaving the place, everyone laughed

But it was a big gamble and it was worth the risk.

This time, luck was on our side, and it created a wonderful, profound, powerful situation, and it was hilarious.

thank you

(applause)

Over the past few centuries, microscopes have changed the world.

Microscopes reveal a world of things, organisms and structures too small to see with the naked eye.

made great contributions to science and technology

Today, I want to introduce you to a new type of microscope: the microscope that sees change.

Instead of optically making small things look bigger like a normal microscope, we use video and image processing to make us see subtle movements and color changes in people and objects that are invisible to the naked eye.

It gives you a whole other way of looking at the world.

what is the color change

Human skin, for example, changes color slightly depending on the flow of blood.

This is a very subtle change, so if you look at the person sitting next to you, you won't see any change in their skin or face color.

When you look at this footage of Steve, it looks like a still image, but when you look at it through our new microscope, it reveals an entirely different image.

It makes small changes in skin color visible by amplifying them by a factor of 100.

You can also see your pulse

Not only can you tell how fast your heart is beating, but you can also see how the blood is running down your face.

Not only can you visualize your pulse, but you can also accurately measure your heart rate.

It's just a regular camera, and you don't even have to touch the patient.

Here, we're extracting the pulse and heart rate from a newborn video taken with a regular DSLR camera, and the heart rate measured by this is as accurate as the standard hospital instruments.

The video doesn't have to be something you took yourself.

You can also use an existing video

This is a scene from "Batman Begins" where you can see Christian Bale's heartbeat. (Laughter)

(Laughter) It's a movie, so I'm sure he's wearing make-up, and the lighting conditions can be tricky, but we're still able to extract his heartbeat from the footage very well.

how are you doing

It analyzes the temporal changes in light recorded in each pixel of the video and magnifies those changes.

Make it big enough to see the change.

The difficulty is that the changes you want to capture are very small, so you have to be careful to separate them from the noise inherent in the recording.

We do some clever image processing to get the exact color of each pixel, and then we capture how the color changes over time, and we zoom in on that.

Create an image that emphasizes changes so that changes can be seen visually.

What can be made visible in this way is not only subtle color variations, but also subtle movements, because the light captured by the camera changes not only with color variations, but also with the movement of objects.

This is my daughter when she was two months old.

Recorded about 3 years ago

New parents are always concerned about whether their babies are healthy, breathing, alive.

I also bought a baby monitor so that I can see my daughter as she sleeps.

This is what you see on a normal baby monitor.

I can see him sleeping, but I don't get much information.

there is little to see

If it looks like this, wouldn't it be more informative and useful?

By magnifying the movement by a factor of 30, I was able to clearly see her movements, and now I can see that she is indeed alive and breathing.

(Laughter) Here's a side-by-side comparison.

In the original video, you can't see the movement, but in the zoomed-in video, you can see the breathing very well.

There are many phenomena around us that can be revealed by this "microscope for change."

You can see how your veins and arteries are pulsing in your body.

You can also see that the eyes are constantly swaying and moving.

This was taken with my own eyes when my daughter was born, so you can see that I didn't sleep much (Laughter).

Movements like this may tell you what a person is thinking and how they're feeling.

Even small mechanical motions, such as engine vibrations, can be magnified and viewed, which may help engineers detect and diagnose mechanical problems. You can also see how buildings and structures sway and bounce in the wind.

There have been ways to measure this kind of movement for some time, but actually making it visible to the eye is another story.

Since we invented this technology, we've put the program online so that anyone can experiment with it.

very easy to use

you can try it on your own video

Our collaborators, Quanta Research, even have a site like the one you see here, where you can upload a video and see the results, so you can easily experiment with this microscope without any knowledge of computer science or programming.

Let's take a look at some of the things people are doing with this.

This video was made by a YouTube user named Tomez85

I don't know who you are, but you're using our program to magnify pregnant women's belly movements.

It's a little creepy

(Laughter) And here we're zooming in on the pulsation of the veins in the hand.

But it doesn't sound like science without a guinea pig, right? This guinea pig is named Tiffany, and the author claims it's the first rodent to have magnified microscopic movements.

You can also make a work of art

It was sent to me by a Yale design student.

He wanted to know if there was a difference in the way his friend moved.

I asked them to stay still, and then they expanded the movement.

It feels like the photos are starting to move.

The good thing about these examples is that we didn't have to do anything ourselves.

Just by providing new tools and new ways of looking at the world, people will find new and interesting creative ways to use it.

but that's not the end

This tool not only allows you to see the world in new ways, but it also redefines what you can do with your camera and pushes the boundaries of what is possible.

As scientists, we started to think, what other physical phenomena could produce subtle motion that could be measured by a camera?

One such phenomenon that we've been working on recently is sound.

Sound is basically a change in air pressure traveling through the air.

When a wave of pressure hits an object, it creates tiny vibrations that we use to hear and record sounds.

But sound also creates visual movement.

Even if it's invisible to the naked eye, it can become visible with the right processing using a camera.

I'll show you two examples.

This is me showing off my amazing singing skills

(Laughter) I took a high-speed camera of my throat while I was speaking.

If you look at the original footage, you can barely see any movement, but if you zoom in on the movement by a factor of 100, you can see that there's a wave-like movement spreading across the neck, which is involved in vocalization.

So the trace of the sound is left in the image.

It's a well-known story that singers break glasses by making certain pitches.

Here, the sound of the resonance frequency of the glass is emitted from the side speaker.

If you zoom in on that movement by a factor of 250, you can clearly see the glass vibrating in resonance with the sound.

It's not something you see very often

But this is where I came up with a crazy idea.

Is it possible to reverse this process and restore sound from video? It analyzes the minute vibrations that sound waves create on the surface of an object to generate the original sound.

That way, you can turn anything around you into a microphone.

we tried to do just that

There's an empty bag of potato chips on the table, and we're going to take a video of this, and by analyzing the microscopic movements caused by the sound, we're going to turn the bag of potato chips into a microphone.

In this room, this kind of music is played

(Song "Mary Had a Little Lamb") And I took a picture of a bag of potato chips with a high-speed camera.

even if i see this

It doesn't look like anything is happening, but by analyzing the subtle movements in the video, we were able to reproduce sounds like this.

(Song "Mary Had a Little Lamb") I made this—

(Applause) I call it a "visual microphone."

We're extracting the audio signal from the video signal.

As for the magnitude of the movement, even a fairly loud sound can move a potato chip bag less than a micron.

1/1000th of a millimeter

Even small movements like that can be detected by observing the light bouncing off objects in the image.

You can also use other things, like plants.

(Song "Mary's Sheep") You can also restore your voice

Here in the room, people are talking

Mary had a little lamb whose fleece was white as snow, and everywhere that Mary went, that lamb was sure to go.

(He followed Mary wherever she went.) It's the voice reconstructed from the same potato chip bag video as before.

Mary had a little lamb whose fleece was white as snow, and everywhere that Mary went, that lamb was sure to go.

I used "Mary Had a Lamb" because it was the first song Edison recorded on his gramophone in 1877.

It was one of the first devices to record sound.

The sound was received by the diaphragm, and the vibration was transmitted to the stylus and recorded on the aluminum foil wrapped around the cylinder.

Here's a demo of recording and playback on an Edison gramophone.

(Recording) Testing, testing, one two three.

Mary had a little lamb whose fleece was white as snow, and everywhere that Mary went, the lamb was sure to go.

(Play) Testing, testing, one two three.

Mary had a little lamb whose fleece was white as snow, and everywhere that Mary went, the lamb was sure to go.

Today, 137 years later, we can now reproduce the same quality of sound from just a video of an object vibrating with sound, and we can do it with an object five meters away behind the soundproof glass.

This is the restored sound

Mary had a little lamb whose fleece was white as snow, and everywhere that Mary went, the lamb was sure to go.

The application that immediately comes to mind would be espionage.

(Laughter) But it can also be used for other things.

Maybe in the future we'll be able to reproduce sound from beyond the universe, because sound doesn't travel through space, but light does.

We are just beginning to explore the possibilities of this new technology.

It allows us to see physical phenomena that we knew existed but could not see with our own eyes.

this is my friend

Everything I've shown you today is the result of the collaboration of all of you here, and I invite you to visit our website and try it for yourself and join us in exploring the world of subtle motion.

thank you

(applause)

I'm here to ask for your help in reimagining the story of how humans and other animals carry things.

It's a familiar story, one that you already know a little bit about: biology is a war in which the strongest survive. Corporations and nations succeed only by beating, destroying and conquering their competitors. Politics is all about winning at any cost.

But I think we're starting to see signs of a new story.

It spreads across several different areas, where cooperation, collective action and complex interdependencies play a more important role.

And the dominant but less important role of competition and survival of the fittest shrinks a bit to make room.

When I wrote "Smart Mobs," I started thinking about the relationship between communication, media, and collective action, and I continued to think about it long after I finished writing the book.

In fact, if you look back, the human medium of communication and the way we form our societies have evolved together for a very long time.

Humans have existed long before they settled in an agricultural civilization about 10,000 years ago.In small family groups, nomadic hunters hunted rabbits and foraged for food.

The form of wealth in those days was enough food to live on.

But at some point they banded together to hunt bigger game.

In fact, I don't know how they did it, but they must have solved some of the problems with collective action, because you can't hunt mastodons while competing with other groups.

I don't know how, but it's clear that new forms of wealth have emerged.

Get more protein than your family can eat before it spoils

This caused social problems that became the driving force for creating a new society.

Did the man who ate the mastodon meat owe the hunter and his family something?

So how did they do the deal?

We have no way of knowing, but there must have been some kind of symbolic communication.

Of course, with agriculture came the first great civilizations, the first cities built out of mud and brick, the first empires.

And the administrators of these empires hired men to keep records of the taxes owed on the borrowed wheat, sheep and wine, and the taxes levied were stamped on the clay.

Then some time later the alphabet was invented

And this powerful tool was used for thousands of years only among elite administrators who recorded the accounts of empires.

Then other communication technologies contributed to the invention of new media, the introduction of the printing press, and within a few decades, millions of people were able to read and write.

And from the literate population, new forms of collective action emerged in the fields of knowledge, religion and politics.

Scientific revolutions, religious reforms, constitutional democracies, previously unthinkable, became possible.

It wasn't created by the printing press, it was made possible by collective action that began with literacy.

And then a new form of wealth appeared.

Commerce is ancient, and markets are as old as the crossroads.

Capitalism as we know it is only a few hundred years old and made possible by cooperative measures and techniques like joint stock companies, shared property insurance and double-entry bookkeeping.

Now, of course, the technology that facilitates problem solving is based on the Internet, and in the age of many-to-many, every desktop is now a printing press, a broadcaster, a community or a marketplace.

Evolution is getting faster

These days, that power is running amok away from the desktop, and in the near future we're going to see a significant percentage, if not a majority, of people roaming around with supercomputers connected at much faster speeds than we have today's broadband.

When looking into collective behavior, there's a lot of literature based on what sociologists call "social dilemmas."

There are a few mythological stories about social dilemmas

I'd like to introduce two of them: the prisoner's dilemma and the tragedy of the commons.

When Kevin Kelly and I talked about this, he assured me that everyone here knew the details of the prisoner's dilemma, so I'll keep it short.

If you have any questions, you can ask Kevin Kelley later. (Laughter) The Prisoner's Dilemma is a story that was built long ago on the mathematical matrix of game theory, assuming nuclear war, and two players who couldn't trust each other.

Let's just say that every unsecured transaction is a good example of the prisoner's dilemma.

The rich and the rich will not trade unless they trust each other.

Either they don't start trading with either, or they get what they don't get, and they both lose.

If they agree to turn the prisoner's dilemma into another reward matrix, called a guarantee game, then the game can proceed.

Twenty years ago Robert Axelrod used the prisoner's dilemma to investigate a biological question: If we're here because our ancestors were brave competitors, how does cooperation exist?

He started a computer competition where he had people post prisoner's dilemma strategies, and to his surprise, he discovered that a fairly simple strategy won. It won the first competition, and it won the second even after everyone knew that strategy would win.

Another economic game, less well-known than the prisoner's dilemma, is the ultimatum game, which is a very interesting experiment in imagining how people conduct their economic transactions.

This is how the game works.There are two players who have never played this game before and never will again.They don't know each other and they are in separate rooms.

The first player is offered $100 and told to propose a share: 50/50 90/10 If the second player agrees to a share, both players receive their share and the game ends.

Now, the basics of neoclassical economics say it's irrational to refuse a dollar here because someone you don't know across the room gets $99.

But after thousands of experiments with Western and Japanese students, there's a pretty good chance that any proposal that isn't close to 50/50 will be rejected.

They didn't know the game in the prescreening, they hadn't even played the game, but the average proposal was a shockingly close to 50/50, so it was as if the proposers knew this.

What's interesting about this experiment is that anthropologists have recently played the game in other cultures and found with surprise that the slash-and-burn farmers of the Amazon River, the nomadic herders of Central Asia, and many other cultures -- they each had very different ideas about what was fair.

This shows that the basis of our economic transactions is influenced not by our innate sense of fairness, but by social institutions, whether we know it or not.

Another major story of social dilemmas is the tragedy of the commons.

Garrett Hardin used it in the late 1960s to talk about overpopulation

He gave the example of communal grazing land, where individuals overgrazed to maximize their herds, leading to resource depletion.

He came to the depressing conclusion that it would inevitably usurp a shared resource that humans are not restricted from using.

Now, in the 1990s, political scientist Eleanor Ostrom asked the question that every good scientist raises: Is it true that humans will always usurp the commons?

she verified every data

We've examined river basins, forest resources, fisheries that people share, and thousands of cases, and found that in every case, humans destroyed the commons on which they depend.

But she also found many examples of escapes from the prisoner's dilemma, and in fact the tragedy of the commons is a multi-player prisoner's dilemma.

And she said, "Only those who think themselves prisoners are prisoners."

they escape by creating organizations for collective action.

And most interestingly, she found that these successful organizations had some common design principles, and these principles were not present in the failing organizations.

Let me give you a short introduction to these disciplines.In biology, the concepts of symbiotic relationships, group selection, and evolutionary psychology are disputed.

But the fact that cooperative action has moved from a supporting role to a central role, from the cellular level of biology to the ecosystem level, is now rarely the subject of great debate.

And also, the notion that individuals pursue their own interests has been turned upside down.

Rational self-interest is not necessarily the dominant factor.

In fact, people act to punish charlatans, even at their own cost.

And most recently, neurophysiological experiments have shown that reward centers in the brain of people who punish charlatans in economic games are activated.

It led one scientist to assert that altruistic punishment serves as the glue that keeps society together.

Now, I talked about how new forms of communication and mediums have helped shape new economies in the past.

Commerce has been around since ancient times, the history of markets is old, capitalism is new, and socialism has emerged as the axis of opposition.

But not much is said about what exactly will come next.

James Slowicky touched on Jochai Benkler's open source document and pointed to a new mode of production: peer-to-peer production.

I want you all to keep in mind that in the past, new technologies have enabled new forms of cooperation and created new forms of wealth, and we may be moving into other forms of economics that are very different from what we were used to.

In short, let's take a look at some companies, IBM, you know, HP Sun -- some of the most competitive companies in the IT world have open sourced their software and put their patent portfolios into the common arena.

Eli Lilly -- pretty competitive in the pharma world -- created a market to solve the pharma problem.

Instead of treating their suppliers as markets, Toyota treats them as networks and trains them to be more productive, even if it means training them for their competitors.

Now, none of the companies do it out of altruism, they do it because they know that some kind of sharing fits their self-interest.

Open source production has shown that world-class software such as Linux and Mozilla can be built without the bureaucratic corporate structures and market incentives we thought.

Google enriches itself by enriching thousands of bloggers through AdSense

Amazon has opened up its API to 60,000 developers and countless Amazon stores.

They're not altruists, they're enriching others as a way of enriching themselves.

eBay created a market by solving the prisoner's dilemma, creating a feedback mechanism out of nothing that turns the prisoner's dilemma into a guaranteed game.

"Prove you're trustworthy and I'll work with you" instead of "We can't trust each other so act suboptimally"

In just two years, Wikipedia used thousands of volunteers to create a free encyclopedia of 1.5 million articles in 200 languages.

We've seen ThinkCycle post problems that NGOs in developing countries have and design students from all over the world solve them, including tsunami relief out-of-the-box hydration mechanisms for cholera victims.

BitTorrent turns any downloader into an uploader, making the system more efficient and increasing the number of users.

When millions of people aren't on their desktops, they've linked their PCs together through the Internet to help medical researchers solve their protein-folding problems as supercomputers -- Stanford's Folding@home -- cracking the code and searching for life in the universe.

I don't think I know enough yet

I don't think we've even figured out what the basic principles are, but I think we can start thinking about them.

I don't have time to tell you everything, but think about your self-interest.

Ultimately it's all about self-interest

In El Salvador, both sides withdrawing from civil war have made moves that prove their prisoner's dilemma strategy.

United States Philippines Kenya Around the world, citizens used mobiles and SMS to organize political protests and voter campaigns.

Is a cooperative Apollo program possible?

What about interdisciplinary joint research?

I think the results are great.

I think we need to start developing a map of this area so that we can tell this story across disciplines.

I'm not saying that understanding the value of cooperating makes us better people. Sometimes we co-operate to do bad things.

Descartes said we need a whole new way of thinking.

Suffering was alleviated when scientific methods offered new ways of thinking and biology proved that microbes cause disease.

What forms of suffering would be alleviated and what forms of wealth would be created if we knew a little more about cooperation?

I don't think this interdisciplinary discourse happens automatically, it takes effort.

Therefore, I am asking for your cooperation to help us start a cooperative project.

thank you

(applause)

In the 1600s, Cape Cod Bay, off the east coast of the United States, had

There were so many North Atlantic Right Whales that I could walk across on their backs.

Today, they're down to a few hundred and are in danger of extinction.

Like the North Atlantic right whale, 200 years of whaling have depleted many species of whales, hunted for their meat, oil and bones.

There are still whales in the ocean today because of Save the Whales in the '70s.

Stopping commercial whaling was beneficial, and it created the concept, "If we can't save whales, what can we save?"

Our political skills were put to the test to stop environmental destruction.

In the early '80s, the anti-whaling movement banned commercial whaling.

But whale numbers in the ocean remain low because they also face other human-made threats.

Unfortunately, many people think that whale conservationists like myself work for the charismatic beauty of whales.

This is a terrible misconception, because whales are ecosystem engineers.

Whales keep the oceans stable and healthy, and they benefit human society.

So let me talk about why protecting whales is so important to the resilience of our oceans.

It can be boiled down to two things: warehouse dung and rotting carcasses.

Whales dive deep into the ocean in search of food, and when they come up to the surface to breathe, they actually give off huge belts of droppings.

This so-called whale pump actually creates the base of the marine food chain by bringing essential, finite nutrients from the depths of the ocean to the surface where plankton grows.

So when more whales in the ocean poop, the whole ecosystem benefits.

Whales are also known to migrate the longest distances of all mammals.

Gray whales off the coast of the United States migrate 16,000 kilometers between rich feeding grounds and scarce calving and nursing grounds.

Every time a whale migrates, it transports a fertilizer called faeces from an ocean of abundance to one that needs it.

So clearly, whales are very important in horizontal and depth nutrient cycling in the ocean.

But what's so cool is that it matters even after you die.

Whale carcasses form one of the largest organic deposits that, when submerged above sea level, are called whalebone communities.

Carcasses that sink to the seafloor become a feast for 400 species of bizarre creatures, including hagfish, which have slimy, eel-like bodies.

So 200 years of whaling would have killed whales, taken carcasses from the sea, and disrupted the frequency and geographic distribution of whalebone communities that should have sunk into the deep sea, resulting in the extinction of many species that specialized and depended on whale carcasses for food.

Whale carcasses are known to carry about 190,000 tons of carbon dioxide from the atmosphere to the deep ocean, the same amount that 80,000 cars emit in a year, so the deep ocean is a "carbon sink," absorbing excess carbon dioxide from the atmosphere and slowing global warming.

Occasionally, dead whales wash up on shore and become food for terrestrial carnivores.

The ill effects of 200 years of whaling are clear, leading to a 60% to 90% decline in whale populations.

Save the Whales' work has clearly been useful in banning commercial whaling, but it's time to rethink this.

We need to address the pressing modern problems that whales face at sea today.

We also need to keep whales from colliding with container ships passing through feeding grounds and keeping fishing nets from entangling them as they move through the ocean.

We need to think about how to contextualize our conservation message so that people understand the true ecological value of whales.

Let's save whales again, but this time it's not just for whales.

it's for us too

thank you

(applause)

I work in tourism and peacebuilding, but it didn't start out that way.

When I was seven years old, I saw people throwing rocks on TV, and I thought, "This is going to be fun."

So I stepped out and threw a stone, and I should have threw a stone at the Israeli car.

I hit my neighbor's car with a rock. (Laughter) My patriotism was not appreciated.

this is a picture of my brother and me

I'm the little one I'm sure you're thinking, "You used to be cute, what happened?"

This brother of mine was arrested when he was 18 and put in jail for stoning.

Because he refused to admit to throwing stones, he was beaten and suffered internal injuries that caused him to die soon after his release.

I was angry, I was outraged, I swore revenge.

But when I turned 18, the turning point came.

I went to a Hebrew school to learn Hebrew for a job, and it was there that I met my first Jew who wasn't a soldier.

It's a very small thing, but it's rare for Palestinians to like country music, and we became good friends.

Only then did I realize there was a wall between us, a wall of anger and hatred and ignorance that separates us.

But I thought it didn't matter what happened to me.

What really matters is how I deal with it

So I decided to spend my life breaking down this wall that separates people.

I've been working on it in various ways since then.

Tourism is one of them. Media and education.

Can the walls come down? - the answer is yes

Tourism is the most sustainable way to break down these barriers and create a sustainable way to connect with each other and build friendships.

In 2009, I co-founded Mejdi Tours, a social enterprise that aims to bring people together, and I made it with two Jewish friends. What we're trying to do is, let's say for example, two tour guides, one Israeli and one Palestinian, and we're going to tour Jerusalem together.

I once toured with a friend named Coby, and I took a group of Jews from Chicago through Jerusalem, and I took them to a refugee camp in Palestine, where they had this feast.

By the way, this is my mother.

This is a Palestinian dish called maqluba.

in the sense of "upside down"

You cook the rice and the chicken and then flip it over at the end.

with the best food

we all eat together

And then a joint Israeli-Palestinian band played and belly danced.

If you don't know, I'll let you know later.

And the day we left, we were both crying because we didn't want to leave.

Three years later, this relationship is still going on.

Imagine, one billion people who travel abroad every year, and this is how they do it. Instead of just taking a bus, visiting places of interest, going from hotel to hotel, and taking pictures of people and culture from the train window, they actually connect with people.

formerly a group of Muslims from England

I took them to an Orthodox Jewish home and shared Shabbat dinner with a family there, and we ate together a Jewish stew called hamin. After a while, they realized that their ancestors had also come from the same region of North Africa 100 years ago, and they bonded.

I'm going to use this as my profile picture on Facebook.

It's not just a trip to the disaster area

This is the "future" of travel Please join me in changing travel

We're doing this all over the world, from Ireland to Iran to Turkey, let's all go out there and change the world.

thank you

(applause)

I have to confess

As a scientist and an engineer, I've spent many years pursuing efficiency.

Efficiency can also be a cult, and today I want to talk to you about my journey to leave this cult and return to a richer reality.

A few years ago, I finished my PhD in London and moved to Boston.

And I was commuting from Boston to work in Cambridge.

I bought a road race bike that summer and rode to work every day.

Looking up the route on your smartphone

He told me to go down Massachusetts Street, which was the shortest route from Boston to Cambridge.

For about a month, I took that road with heavy traffic, but one day I chose a different route.

I don't remember why I decided to take a detour only on that day.

But I still remember my surprise at the time. There were no cars on that street, which was very different from the Massachusetts Avenue that was right next to me, which was full of cars.

But when the feeling of amazement passed, I felt embarrassed.

I wonder why I was so blind

For a whole month, I was obsessed with mobile apps and all I could think about was taking the shortest route to work.

In the process, I never thought about enjoying running down the road, feeling nature firsthand, or making eye contact with people I met.

It's also just —

This is to reduce the commute time by one minute.

Let me ask you, am I the only one like this?

Who hasn't used a map app to get directions?

most people will have

Maps apps are certainly very useful and encourage people to explore more of the city.

Just look at your smartphone and you'll instantly know which way to go

But map apps offer limited directions on how to get to your destination.

It convinces you that it's the only right way to get to your destination.

this experience changed me

My research has shifted from data mining to understanding how people experience cities.

Experiments that were previously done in the social sciences are now being done on a large scale with the tools of computer science.

I was fascinated by the beauty and ingenuity of traditional social science experiments, like Jane Jacobs, Stanley Milgram, Kevin Lynch.

The result of that research is a new map that not only tells you the shortest route, shown in blue, but also the most enjoyable route, shown in red.

How did it come true?

Einstein once said, "Logic can only get you from point A to point B.

Imagination can take you anywhere

So I let my imagination run wild, and I realized that I first needed to know what people thought was beautiful in the city.

Together with my colleagues at Cambridge University, I devised a simple experiment.

What would you say if you were shown these two cityscapes and asked which one you thought was more beautiful?

Do not be shy

Who do you think is A? Who do you think is B?

I guess so

Based on this idea, I created a crowdsourced web game.

Participants look at a set of cityscapes and answer which one is more beautiful, quieter or more fun.

By aggregating answers from thousands of users

I know which places everyone likes better

After that research, I joined Yahoo Labs and teamed up with Luca and Rossano to collect data about favorite places in London and create a new map, weighted by human emotions.

On this map, not only can you find the shortest route from point A to point B, but you can also find fun routes, beautiful routes, quiet routes.

Experiment participants said that the fun route, the scenic route, the quiet route were much more comfortable than the shortest route, and only added a few minutes to the travel time.

Participants also think it's nice to associate places with memories.

Shared memories like where the old BBC used to be, and personal memories like where you had your first kiss.

People also remember specific smells and sounds of a place.

So what if there was a map that could find the most favorable route not just for its visual beauty, but also for its association with smells, sounds and memories?

that's what we're researching now

In a broader sense, my research is about avoiding single-path hazards, not depriving people of their holistic experience of the city.

If you decide to go through the park instead of the parking lot, the route becomes completely different.

By choosing a road where you can meet a lot of people you like instead of a road full of cars, your journey will be completely different.

it's simple

Last but not least, do you remember The Truman Show?

It's a movie that satirizes the media, and the protagonist doesn't know that he lives in a fictional world for the show.

Maybe we too live in an artificial world called efficiency.

Let's take a look at our habits and try to escape from the artificial world like the hero in that movie.

because -

"You may think adventure is dangerous, but routine is deadly."

thank you

(applause)

They say you have to go through hell to be a poet.

When I first visited that prison, I was not surprised by the sound of the padlocks, or the doors slamming, or the bars in the cell, or anything else I could have imagined.

Maybe it's because the prison had a very open environment.

I can see the sky

When seagulls fly overhead, it feels like you're near the beach, like you're by the sea.

But the truth is, the gulls are looking for food in a nearby dumpster.

As I went further inside, I suddenly saw an inmate walking across the hallway.

When I took a step back from reality to see that scene, what if I had a different life, a different upbringing, or a different chance

I thought it was very possible that I might have been one of the inmates.

Because no one, no one can choose where they are born.

In 2009, I was invited to a project where I was tasked with a literary workshop run by the National University of San Martin at Prison No. 48.

A corner on the edge of the prison was provided, and a university center was built there.

When I first spoke with the inmates, I asked them why they wanted to take a literary workshop, and they replied that they wanted to write down on paper all the things they wanted to say but couldn't, or the things they wanted to do but couldn't.

I immediately decided to introduce the world of poetry to this prison.

And I suggested, "If you know what poetry is, let's write it together."

But no one knew what poetry really was.

Inmates also suggested, "We should make this workshop available to all inmates, not just inmates taking college courses."

So I said, "To start this workshop, we've got to find a common tool for everyone."

That tool was "words"

I had the language, I had the workshop, and I thought I could write poetry.

But what didn't count was that inequalities in the world exist inside prisons as well.

Many inmates never graduated from high school

Many can't use cursive, barely print

I can't even write fluently

So we started with a short poem

very short and very powerful poem

We read one poet, then the next, and as we read short poems, we all began to realize that poetic expression is about breaking logic and creating new systems.

Breaking logic also means breaking the system that we have been imprinted on until then.

And so new systems emerged, new grammars, and comprehension became much, much faster, really fast, and with poetic language, you can be sure that you can say whatever you want to say.

They say you have to go through hell to be a poet.

prisoners have experienced a lot of hell

As one inmate announced, "You don't sleep in prison.

I can never sleep in a prison, I can never close my eyelids."

So I paused like this in front of the prisoners for a moment, and then I said, "Ladies and gentlemen, that's what poetry is all about.

This is the prison world that surrounds you.

Fear oozes out of the very words you say, "I never sleep."

Anything that is not written is poetry.”

And so we started by tapping into that hell, diving into Dante's poem "The Hell of the Violent."

In the Valley of Hell that they knew so well, prisoners learned that in a world of poetry, walls could disappear, windows could talk, and they could hide in the shadows.

At the end of the first year of the workshop, we had a little graduation ceremony, kind of like throwing a celebratory blast at the end of a job you love.

Invite family, friends and university officials

The inmates read the poem and only received a certificate and applause.

It was a very simple formula.

Before I leave today, I just want to tell you about that time, and the inmates that stood next to me, some big guys, some very young, but very self-conscious, all had papers in their hands, shivered like little children, sweated, and read their poems in a very hoarse voice.

At the time, I had a strong thought that for most of them, this should be the first time they've done something and received applause.

There are things you can't do in prison

You can't dream in prison You can't cry in prison

Words like "time," "future," and "wish" are virtually forbidden words.

But we dared to dream and it's a big dream too

I decided to get the inmates to write a book.

It's not just about writing books, it's about binding them ourselves.

It was the end of 2010

After that, we took a gamble to publish another book.

We made this book ourselves.

That was very recently, late last year.

Visibly with each passing week, the inmates become a different person, a different person.

Words empower prisoners with a dignity they've never tasted or even imagined.

Until then, we never thought we had dignity.

During the workshop, everyone has something to offer in the familiar hell.

Open our hands and hearts and give what we have and what we can do

everyone is equal

By doing this, everyone can feel at least a little bit of mending the "huge rift in society" that's the reason so many of us end up in prison.

I remember a poem written in a workshop at Prison No. 48 by a very good poet, an inmate named Nicolas Dorado, who said, "I'm going to need endless threads to stitch this huge wound."

Poetry heals the "wounds" of being alienated from society.

The world of poetry opens doors and acts like a mirror.

create a mirror called poetry

See who you are in it, observe yourself in poetry, write who you are, and what you write shapes who you are.

In order to write, you have to make the most of the time you are able to write, because the freedom you experience when you write is an order of magnitude.

You have to look inside your own head. When you're creating, you look for that little bit of freedom that can never be taken away. It's meaningful to realize that even in prison you can be free. There is meaning in realizing that the iron bars in this wonderful space you live in are just the word "barred," and that when you light the core of those words, all of us in this hell will burn with happiness.

(Applause) So far, I've talked a lot about prison and what I'm going through each week, how I'm having fun and how I'm changing with the inmates.

But the truth is, I really hope that you can feel, for a little while, a real experience of what I enjoy every week and what has made me who I am today.

(Applause) (Martin Buchtamante) The heart chews through the tears that time sheds Blinds the light and hides the speed of existence There's a scene that moves slowly

My heart struggles, but I endure

Staring at me with sad eyes Cracking my heart Riding the storm that spreads the flames Puffing out my withered chest in shame I know that just reading aloud isn't the way And I want endless blue

The mind settles down and thinks about this and that Struggling to avoid being mediocrity Trying to love without getting hurt Breathing in the sun Breathing out courage Surrendering and traveling in search of reason

The mind fights in the marshes and bridges hell Even when exhausted, it resists the temptation of ease Walks the rickety steps of drunkenness Wakes up wakes up still

I'm Martín Buftamante, Prison 48, San Martín, and today is my parole day.

Poetry and literature changed my life

thanks so much!

(Christina Domenech) Thank you!

(applause)

Guatemala is recovering from 36 years of armed conflict.

This conflict took place during the Cold War

It was originally just a small leftist rebellion, but the government's counterattack was devastating.

As a result, there were 200,000 civilian victims, 160,000 of whom were killed in the neighborhoods where they lived, ranging from small children to men, women and the elderly.

In addition, 40,000 people are still missing and have not been found.

“Desaparecidos” is called “The Disappeared People”

Now, 83 percent of the victims were Mayan, which means the victims were descendants of native peoples of Central America.

And about 17 percent of people of European descent.

But the most important thing here is that most of the perpetrators of this crime were the police and the military who were supposed to protect us.

family asked for information

i want to know what happened

I want to retrieve the bodies of my beloved family members.

But most of all, the family wants you to know that nothing was wrong with the victim.

Now, in my case, my father received death threats in 1980.

So the family fled

I left Guatemala and came here.

I grew up in Brooklyn, New York, attended New Utrecht High School, and graduated from Brooklyn College.

I didn't really know what was going on in Guatemala.

I tried not to think about it, it was too painful

But in 1995, I decided to act.

I came back

By going back to Guatemala and looking for the bodies, I wanted to understand what happened there and find a part of myself.

we first provided information to people

Then I talked to my relatives and let them choose for themselves.

It was up to them to tell us their stories, tell us what they saw, or tell them about their families.

And even more importantly, were they willing to give a piece of themselves?

A piece of who you are

And then you compare the DNA you get with the DNA of the remains.

In parallel, I continued to search for bodies.

This crime happened about 32 years ago, and the body is already in bones.

When we find a graveyard, we remove the soil, clean the bodies, record them, and dig them up.

Literally dig the skeleton out of the ground.

And then we take it to a lab in the city, and we analyze it for two main things: first, what caused the person to die.

For example, there are gunshot wounds to the back of the head and machete wounds like this.

the other is what kind of person he was

is it a baby or an adult

Check if you are female or male

Once that analysis is done, they use a piece of the bone to extract the DNA.

And that DNA is then used to compare it to the DNA of the bereaved family.

I would like to illustrate with two examples.

First, here's an example of a military record.

This is a record that was smuggled out in 1999.

What these records tell us is that governments were tracking ordinary people like you who wanted change in their country, and documenting every single action they took.

One of the records was when he was executed.

Inside this yellow box, there's a code. It's a secret cipher called 300.

and dated

300 stands for "execution" and the date stands for the date of execution.

It's important later, so keep that in mind.

In 2003, when we excavated a military base, we found 220 bodies in 53 graves.

The DNA of the bones in grave number 9 matched the family of Sergio Saul Linares.

Sergio was a university professor

After graduating from Iowa State University, he had returned to Guatemala to change the country.

He was captured on February 23, 1984.

And the records say he was executed on March 29, 1984.

We've found a body, we've got family information and DNA, and we've got a record of what happened.

More importantly, two weeks later, another person from the same grave had the same DNA, this time Amancio Viatro.

His DNA also matched that of his family.

And it turns out that his name is also in military records.

He was actually executed on March 29th, 1984.

So we thought, how many people were in that grave?

6 people

So how many people were executed on March 29, 1984?

That's right, there were six of us.

Juan de Dios and Hugo Moises and Soiro

All of them were executed on the same day, all of them were caught in different places and different dates.

everyone was buried there

The next thing we needed was the DNA of four survivors, and we were able to search and find them.

Now, six people have been identified and returned to their families.

Another thing I would like to introduce to you is a military base called CREOMPAZ.

It's Spanish for "believe in peace," and it stands for Peacekeeping Regional Training Headquarters.

Here the Guatemalan army trains peacekeepers from other countries, which belong to the United Nations.

Head to countries like Haiti and Congo

According to testimony, this military base contained multiple bodies and cemeteries.

So we went with a search warrant, and about two hours later, we found one of 84 graveyards, and we ended up with 533 bodies.

Think about it, the peacekeepers were training on piles of bodies.

what an irony

Most of the bodies were lying face down, with their hands tied behind their backs, blindfolded, and with various traumas, people who were helplessly executed.

533 families are looking for these people.

I would like to draw your attention to the 15th tomb among them.

Tomb number 15 contained women and children, 63 in all.

The first thing we thought was, where did something like this happen?

In 1995, when I returned to Guatemala, I heard about the May 14, 1982 massacre, when the military came and killed the men, and then took the women and children away by helicopter.

Understood

The clothing of the people in this tomb matched the clothing of the area from which the women and children had been abducted.

So I did a DNA test.

Turns out it's Martina Rojas and Manuel Chen.

Both men were missing in the incident, but now we have the evidence.

I was able to get physical evidence that this incident actually happened and that they were brought to this military base.

Manuel Chen was only three years old

The child's mother had left her son with a neighbor and went to the river to wash.

That's when the military came and took him away by helicopter, so he was missing until he found him in grave number 15.

Using science and archeology, anthropology and genetics, the voiceless can speak.

but not only

We also provide evidence that can be used in court, for example, last year in a genocide trial in Guatemala, General Rios Montt was sentenced to 80 years in prison for genocide.

I want to tell you today that the same thing is happening everywhere, and it's happening right before your eyes in Mexico, and you can't turn a blind eye.

We must all resolve that there will be no more missing people.

missing person

never let it out

thank you

(applause)

Imagine you're a child protective services employee.

I'm about to visit the house after receiving a report of abuse.

Unpredictable, unpredictable, and clearly unwelcome,

The first thing you see is a mattress on the floor in the middle of the room.

three children are sleeping there

Nearby is a small desk with some ashtrays and empty beer cans.

There's a big mousetrap in the corner of the room, not far from the sleeping children.

look at it and take notes

Walking around the house is part of the job.

I'll go into the kitchen first, there's very little food.

You notice another mattress on the bedroom floor, used by mom and baby.

Now, generally at this point, you have two options.

Do you decide that the children are dangerous and remove them from your home and place them in a state facility for a period of time under custody?

Either the children live with their parents and receive support and assistance from the child welfare system.

When I was a Child Protective Services employee, I saw cases like this all the time.

Some houses were better, some were worse.

Imagine yourself visiting one of those houses, and I'm curious what you think.

What is your choice based on?

What influences the way you see that family?

What do you think was the family's racial and cultural background?

What I want you to realize is that if it's a white family, the children are more likely to stay with their parents after the visit.

A study conducted at the University of Pennsylvania found that, on average, white families were more likely to receive help and assistance from the child welfare system.

Tend to escape thorough scrutiny

But black children are four times more likely to be separated from their families than white children, and they spend more time in foster care, making it more difficult to find stable foster parents.

Foster parents are meant to provide temporary protection for children who are at high risk.

It's confusing and scarring for families.

A study done at the University of Minnesota found that children placed in foster care are more likely to have behavioral and emotional problems than children who stay with their families and live with support and assistance.

There are tons of scenarios like the one I just told you about.

A low-income single mother and her four children

You can't keep food in the house because of rats, let alone fresh food.

Should the child be taken away from the mother?

Family court attorney Emma Ketteringham says if you live in a poor neighborhood, you have no choice but to be the perfect parent.

They say that parents who raise their children in poverty tend to be subject to unfair and unattainable standards.

Neighborhoods and cultural backgrounds influence whether children are separated from their parents.

During my two years in the front line as a child welfare worker, I took a big gamble.

And I got a first-hand understanding of how my values ​​impact my work.

Now, I'm in charge of social services at Florida State University, and I'm leading the Institute to bring together the most innovative and effective child welfare research.

Studies show that 28 percent of foster children are black, double the 14 percent average for all races.

There are several factors that contribute to this, but I'm going to talk about just one today, and it's unspoken bias.

Let's start with the "implicit"

It means unconsciously or unknowingly

A "prejudice" is a stereotype or attitude that everyone has about a group.

So implicit bias creeps into every decision we make.

How can I resolve it?

Let me introduce you to one promising solution.

Now, in almost every state in America, many black children live with foster parents.

But data show that Nassau County, a New York county, has been able to reduce the number of black children who are separated from their parents.

In 2016, when my team and I visited this community and conducted a survey, we saw a "blind protection" conference taking place.

it is like this

When a caseworker receives a child abuse report,

We do home visits, but before the child is taken away from the parent, the caseworker is obligated to come back to the office and report what they have seen.

It's just that the way they do it is great. When they report to the committee, their names, their cultural backgrounds, their neighborhoods, their races, and other personally identifiable information is erased.

The commissioners look only at what happened, the strengths of the family, the past events involved, and the parent's ability to protect the child.

Based on this information, the commission makes recommendations, but without knowing the race of the family.

Blind protection has had a tremendous impact on the community.

In 2011, 57 percent of children placed in foster care were black.

After five years of blind protection, it dropped to 21 percent.

(Applause) I've learned from talking to some of the caseworkers.

"When a family's past history is left behind by the welfare service, even if the family tries to change its ways, many people are stuck in the past and see it negatively."

“When I look at a case, I automatically think of the worst just by looking at the name of the apartment, the area, the zip code.”

"Child welfare is very emotional and very subjective.

No one does this work without emotion.

It's very difficult to do this job with all your emotions in check.

So avoid subjective views about race and geography, and the results may change."

Blind protection seems to eliminate the implicit biases that accompany the adoption decision.

For me, the next step is to use artificial intelligence and machine learning to figure out how to scale this project to other states.

Child welfare reform is possible

We hold organizations accountable for educating staff on social awareness.

Take responsibility for ensuring ethical and safety-based decisions

Imagine a child welfare system that works with parents to strengthen family ties and doesn't see poverty as a failure.

Let's work together to create institutions that strengthen families, not tear them apart.

thank you

(applause) (cheers)

Have you ever had a moment when you couldn't believe your eyes?

About two years ago, a friend sent me this photo from Urumqi, the capital of the Xinjiang Uighur Autonomous Region in northwestern China.

On this very day, my friend couldn't believe his eyes.

When I checked the air quality in the iPad app, the numbers were good, the pollution level was 1 out of 500.

But when I looked outside, the situation I saw was completely different.

Buildings are visible in the background

(Laughter) Those numbers weren't really a reflection of what the air we saw and what we were breathing was, because we weren't measuring PM2.5, fine particulate matter.

In 2012, when PM2.5 levels soared, the U.S. Embassy tweeted "insane pollution," and Chinese citizens took to social media to question why official air pollution statistics were so far from their own perceptions.

Now, with these questions as the starting point, there's a sort of environmental awareness within China that has forced the Chinese government to address the problem of pollution.

China now has an opportunity to lead the world in environmental issues.

But the image of China that I paint today is multifaceted.

There are promising signs, and there are also worrying trends that need to be watched closely.

Let's go back to familiar matters

It wasn't until about 2011, when I was doing fieldwork in China during my PhD, that I began to see progress in China's environmental policy.

I was traveling all over China in search of an answer to a question. As an outsider, I had a skeptical question: Huh, is China addressing environmental issues?

What is your environmental policy?

what kind of policy?

At the time, PM2.5 data was a politically sensitive issue and classified by governments, but as public health concerns grew, they demanded greater transparency from government agencies.

I myself began to feel the social progress and increased awareness spreading throughout China.

For example, department stores have started selling air purifiers that remove harmful PM2.5.

Citizens have even added PM2.5 to the title of a music festival.

(Laughter) I went to a golf course in the city of Shenzhen in southern China, and there was a banner advertising it as a PM2.5 shelter.

Even if golf is below par, below average air is prohibited

Shanghai's Environmental Protection Bureau has decided to create a mascot named after the Air Quality Index (AQI) to better inform citizens about air quality.

I call them AQI girls, and the mascot's expression and hair color change depending on the atmospheric conditions.

Five years later, she still has the biggest smile on the air quality in Shanghai.

Then in 2015, CCTV reporter Chai Jin made a documentary called "Under the Dome."

It's likened to Rachel Carson's Silent Spring.

Just as Rachel Carlson brought attention to the health hazards of pesticides, "Under the Dome" also reminded the public that air pollution kills one million people prematurely each year in China alone.

The video was viewed more than 100 million times in one weekend, before the Chinese government removed it from the internet for fear of causing some sort of social unrest.

but it was too late

Spurred by public outcry about air pollution, the Chinese government, perhaps in self-preservation, began to think big and decisively about how to address the problem of the energy system, which is the root cause of air pollution and many other environmental problems.

After all, two-thirds of China's electricity comes from coal.

China has the largest number of coal-fired power plants in the world, accounting for 40 percent of the world's total. This is why in 2014, the Chinese government launched a radical crackdown on coal, shutting down small coal mines, imposing restrictions on coal consumption, and halting construction of coal-fired power plants equivalent to an entire country in Australia.

The Chinese government has also invested heavily in clean, renewable energy -- hydropower, wind power, solar power -- and the speed and scale of that energy transition has been absolutely staggering.

Let me explain this with some statistics.

In terms of hydropower generation, China is the world's largest, accounting for one-third of the world's total.

Hydropower alone can provide enough electricity for every Chinese citizen to run two houses each.

You may have heard the name of the Three Gorges Dam. This is a picture of it.

Regarding wind power generation, China accounts for one-third of the world's power generation

It is by far the largest in the world

When we look at solar power, China is again the leader here.

In fact, we've just surpassed our 2020 goal of installing 105 gigawatts worth of solar power.

And this was the target after the government raised it several times between 2009 and 2015.

Last year, in just seven months, China was able to install a whopping 35 gigawatts of solar power.

That's more than half of all solar power in the United States, and China did it in just seven months.

The phenomenal expansion of solar power can be seen from space, and the slides are visualized by startup SpaceKnow.

By 2020, China's wind and solar power generation alone will match the electricity consumption of Germany as a whole.

Totally amazing

There's now evidence that China's clean energy efforts are making a real difference, not just in reducing air pollution, but also in terms of global climate change. China has the largest carbon footprint in the world.

Looking at the data, China's coal consumption may have already peaked in 2013.

Based on this, the Chinese government is claiming that it has already achieved its CO2 reduction target by 2020 ahead of schedule.

These reductions in coal consumption are also directly linked to improvements in air pollution across China, which is shown in blue.

Air pollution has improved by 30% in most of China's major cities.

Declining air pollution is extending the lifespans of people living in China, an increase of two and a half years since 2013.

The yellow dots show the cities that have improved the most in air pollution.

Of course, as I said at the beginning, we should not be overly optimistic and be very cautious, because the data are not yet solid.

At the end of last year, after about three years of stable global CO2 emissions, scientific predictions were made that CO2 emissions were rising again. It was attributed to China's increased consumption of fossil fuels.

But statistics and data are still uncertain, because China often updates its coal statistics later.

It's funny, isn't it, because ever since I started working in this field, I've been arguing with other climate modelers on Twitter, trying to figure out whether China's carbon emissions are rising, falling, or staying the same.

Needless to say, China is still a rapidly developing country.

We're experimenting with different policies, like dockless bike-sharing, which was touted as an environmentally friendly form of transportation.

On the other hand, pictures of bicycle dumps like this show a darker side.

Sometimes we move too fast to solve a problem and outstrip demand.

And China is still dominated by coal, at least for now.

So why should we care about China's environmental policy?

Because China's domestic environmental policies affect other countries as well.

In the words of Chai Jin, we are all "under the same dome." Air pollution from China spreads across borders, affecting people as far away as North America.

China isn't just "exporting" air pollution, it's also aid, infrastructure and technology.

In 2013, President Xi Jinping put forward the "One Belt, One Road" initiative, a massive $1 trillion infrastructure investment project that spans more than 60 countries.

If you look back in the past, China's outbound infrastructure investments weren't always "clean."

Over the past 15 years, China has invested in more than 240 coal-fired power plants in more than 68 countries, according to the Global Environment Institute (GEI), a Chinese civil society group, as part of the Belt and Road Initiative.

This means that more than a quarter of domestic coal-fired power generation has been exported overseas.

What this tells us is that while China cleans up its interior, it's exporting pollution to other countries. It's exporting pollution to other countries. Greenhouse gases don't have passports.

To answer the question, is China really leading the world?

but time is running out

I've been working on climate models, but the future doesn't look bright.

Current policies are not enough if we want to avoid dangerous climate change.

We desperately need leadership, but we can't expect it from, say, the United States.

Last June, the U.S. government announced its intention to withdraw from the Paris Agreement on climate change, and as a result, people are looking to China to fill the leadership void.

It can be said that China is in a steering position that holds the fate of the global environment.

There are many lessons to be learned from their policies on emissions trading, clean energy and air pollution.

For example, clean energy isn't just good for the environment, it can reduce air pollution and save lives.

It's also good for the economy

Last year, China contributed 30 percent of the world's green job growth. What about the United States?

only 6%

So I hope that the image of China that I paint today will not be as hazy and bleak as the air pollution data, but as bright and clear as the clean energy that China is promoting.

We all know that even if China is on the right track, it still has a long way to go.

let me ask you again can you believe your eyes

Can you trust the data and statistics? The data that China's air pollution is improving and that drastic measures against coal are paying off.

So let's take a look at the latest satellite imagery of China's solar installations.

take a good look at the photo

can you see

It looks like we'll have to ask the panda for the truth

thank you

(applause)

let's go south

we're all going south

This direction is south, and if you go 8,000 kilometers toward the back of this hall, you'll reach the South Pole, the most southerly point on earth.

i'm not an explorer

I am not an environmental expert

I'm just a survivor. The pictures you see are dangerous.

It's the ice that's melting in the Antarctic and the Arctic.

Guys, we need to listen to the screams these places are making, and if we don't, it will soon be a life or death situation for everyone on the planet.

I've been to these places, and walking on a melting sea of ​​ice is without a doubt the scariest thing I've ever experienced.

Antarctica is a place of hope

protected by the Antarctic Treaty signed in 1959

In 1991, they added a 50-year no-development clause in Antarctica, so that clause could be changed -- it could be amended, it could be altered, it could be scrapped, with a deadline of 2041.

People are already using melting ice around the Arctic to extract resources from places that have been ice-covered for 10,000, 20,000, 30,000, 100,000 years.

Will they be able to piece together clues and not ask, "Why is the ice melting?"

Antarctica is such an amazing place, and for the last 23 years, my mission is to make sure that what happens in the North never happens in the South.

When is the beginning

when i was 11

(Laughter) When I was 11, explorers inspired me to want to be the first person to cross the extremes.

When I was in college, the idea of ​​becoming a polar explorer was a hit with the girls at parties.

seemed more attractive

After seven years of fundraising, seven years of being told no, seven years of family trying to get us to seek psychiatric counseling, the three of us were on the longest unaided march in history to the South Pole.

In this picture, we're standing on a piece of land the size of the United States, and we're all alone.

No radio communication, no support

We had 90% of the world's ice under our feet, and 70% of the world's freshwater.

I was standing on it

That's the power of Antarctica

On this trip, we faced the dangers of crevasses and extreme cold, so cold that sweat froze under our clothes, our teeth cracked, and the surfaces of our eyes froze.

(Laughter) After 70 frantic days, we made it to the South Pole.

I made it

But on this 70-day trip to the South Pole in 1986, something happened to me that made me stand here.

My eyes have changed color because of 70 days of damage.

I get blisters on my face

The skin on my face was peeling off and I was wondering

When we got home, NASA told us that they had discovered an ozone hole over Antarctica -- the same year we walked under it.

The falling UV rays reflected off the ice, burning my eyes and peeling off the skin on my face.

It was a bit of a shock. (Laughter) And then I started thinking.

In 1989, we headed to the North Pole.

For 60 days, step by step, over the frozen sea, away from safe land.

It was also very cold here.

I just came back after washing my body naked in minus 60 degrees.

If someone says, "I'm cold." (Laughter) That's what I mean by cold.

(Applause) A thousand kilometers away from safe land, disaster struck.

Beneath our feet, the Arctic Ocean began to melt four months earlier than usual, and we're a thousand miles away from safe ground.

The ice was crashing and rubbing around me, and I thought, "I'm going to die here."

But what struck me that day was that the world was in a life-and-death situation, and for 25 years, that thought never left my mind.

At that time we were either going or dying

It's not a survivor show on TV.

When something goes wrong, it's a matter of life and death. Daryl, the brave African-American who became the first American to walk to the North Pole, was only 200 kilometers away when his heel fell off due to frostbite.

But he kept going, and after 60 days of marching on the ice, we're at the North Pole.

I made it

No one before me was so stupid as to go to both poles on foot, and this was a success for us.

Unfortunately, the trip home wasn't a pleasant one.

I feel depressed

Being successful is sometimes harder than the process of making it happen.

I'm empty, lonely, financially ruined

I was hopeless, but hope was brought to me by the great Jacques Cousteau, who pushed me to tackle the 2041 problem.

Jack gave me very clear instructions: "Involve world leaders, talk to industry people, and most of all, inspire young people, because the future of Antarctic conservation depends on them."

To engage world leaders, our yacht, the 2041 Maru, has participated in all three Earth Summits. We have been to Rio twice, in 1992 and 2012. At the Earth Summit in Johannesburg, we made the longest voyage on land by a yacht, covering 13,000 kilometers across South Africa, speaking directly to over a million young people about 2041 and their environmental challenges.

Over the last 11 years, we've taken more than 1,000 people to Antarctica, people in industry, men and women in business, students from all over the world.

This took eight years, and I'm especially proud to have recycled it all here in South America.

Ever since I could walk, my mother taught me to recycle.

This is my mother. (Applause) At 100 years old, I still recycle. Isn't that amazing?

(Applause) I love you mom

(Laughter) When my mother was born, there were only 1.8 billion people in the world, and in terms of billions of people, we brought the young people of industry from India and China to Antarctica.

These two countries should play a very important role in decisions to protect Antarctica.

Incredibly, I've also been able to encourage women from the Middle East to come to Antarctica, often being the first delegates from their countries to come to Antarctica.

great people very inspiring

To take care of Antarctica, you first have to involve people in this wonderful place, build relationships, build bonds, nurture love.

It's a great privilege to go to Antarctica.

I consider myself very lucky. I've been to Antarctica 35 times so far, and the people who have been with us to Antarctica have been a huge force in solving not only Antarctic problems, but their own problems, since they've returned home.

Let's go back to the topic at the beginning, the melting of the ice at the poles.

not good news

Six months ago, NASA announced that the West Antarctic Ice Sheet was crumbling.

Antarctica is as big as South America. A gigantic piece of ice the size of a small country is falling off Antarctica.

NASA has calculated that in the next 100 years, sea levels will definitely rise by one meter, the same length of time that my mother has lived on Earth.

That's what happens, and I've come to realize that there's a link between protecting Antarctica and our survival on Earth.

the solution is simple

If the world is going to use more renewable energy, use energy more efficiently, use cleaner energy, what are the economic reasons why we should develop Antarctica?

No. If we could manage our energy better, we might be able to slow down or even stop the massive ice melt that threatens us.

Although a difficult question

Our approach to that is that at the end of next year, we'll be going to the South Pole again, to the same places we walked 30 years ago, following the same 1,600-kilometer route, but this time using only renewable energy.

Far below, beyond the melting ice caps, I hope to speak to people's hearts about this issue.

this is my son barney

to walk side by side with my father

He promised me that his role is to translate this message into the hearts of the young leaders of tomorrow.

i am very proud of my son

good job barney

Ladies and gentlemen, the survivors -- and that's what I'm good at -- don't look at a problem and say, "It doesn't matter."

Survivors look at problems and deal with them before they become a threat.

We have 27 more years to save Antarctica.

it depends on everyone

everyone's responsibility

You may succeed by not belonging to anyone.

Antarctica is a moral line drawn in the snow, and we must defend the only unspoiled wonderland left on this planet.

i believe it is possible

we can get it done

I would like to preserve the words of Goethe

I try to live like that

"Anything you can do If you've ever dreamed of it, start now, for in boldness lies genius and power and magic."

I pray the good fight

thank you

(applause)

The hero Hercules, son of Zeus, just stared in horror at his unspeakable sin.

The goddess Hera plunged Hercules, who she hated as her husband's illegitimate son, into madness.

Hercules' family fell victim to it.

Grieved, Hercules turned to the oracle of Delphi for help, and was told that the way of redemption was through Eurystheus, his cousin and favorite of Hera, king of Tiryns.

Eurystheus, in an attempt to put Hercules to shame, gave him ten unreasonable challenges to face off against monsters of invincible strength and unfathomable power.

That set the stage for the epic adventure that would become known as the Deed of Hercules.

The first challenge was to get rid of the Nemean lions that kidnapped women and devoured warriors.

Its golden fur was impervious to arrows, but Hercules drove the lion into a dark cave, stunned it with a club, and strangled it with his bare hands.

There was nothing sharp enough to peel the lion's skin, but the goddess Athena taught us to use the lion's own claws.

When Hercules returned to Tiryns in a lion's skin, King Eurystheus was so frightened that he hid in a wine jar.

After that, Hercules was ordered to show the booty from afar.

The second opponent is the Lernaean Hydra, a giant water serpent with many heads.

Hercules fought valiantly, but every time he cut off one head, two more sprouted.

It seemed hopeless, but I had the idea that if my nephew Iolaus burned the cut with fire, the head wouldn't grow back.

The dead snake's remains became the constellation Sea Serpent.

The next beast had to be caught alive instead of being killed.

The Ceryneian doe could run faster than an arrow.

After chasing him for a year, Hercules trapped him in the northern land of Hyperborea.

After discovering that the deer was the sacred beast of Artemis, the goddess of the hunt, Hercules vowed to return it.

When Eurystheus saw a doe, he tried to keep it for himself, but as soon as Hercules let go, the deer ran away to its master.

Hercules accomplished his task without breaking his promise.

The fourth challenge was to catch the Erymanthus boar that ravages the fields.

With the wisdom of Chiron, the centaur sage, Hercules chased the boar into the deep snow and captured it.

The fifth challenge wasn't the animal, it was the animal's legacy.

The stables of King Augeas housed hundreds of sacred cows and had not been cleaned for many years.

Hercules promised that if he would give me a cow, he would clean it in a day.

I thought the king couldn't do it

Hercules dug a large ditch and brought in two nearby rivers to fill the stables until they were clean.

The next three were beast exterminations, but each required a clever tactic.

Stymphalos' raptors nested in impassable swamps, and Hercules used Athena's special rattle to frighten the birds and shoot them down as they took off.

No one stood before the raging Cretan bull, but the strangling from behind worked.

The mad king Diomedes trained horses to eat his guests, but when Hercules took him to his stables, the king was eaten by his own horse.

Hercules tied the mouth of the horse, which had become docile with its stomach

The ninth challenge was against humans, but more dangerous than any beast: Hippolyte, Queen of the Amazons.

I needed to get my hands on the belt that the queen inherited from her father, the god of war Ares.

Hercules crossed over to Themyscira, the land of the Amazons, intending to fight, but the queen was impressed with Hercules and his deeds, and offered the belt herself.

In the tenth challenge, Hercules had to steal a herd of magical red cows from the three-headed, three-body giant Geryon.

On the way, Hercules, tired of the heat of the Libyan desert, shot an arrow at the sun.

Helios, god of the sun, was so impressed with Hercules' power that he lent his chariot to travel to Erythia.

Arriving on the island, Hercules defeated Geryon's cowherd and two-headed dog, and then killed the giant himself.

this was supposed to be the end

But Eurystheus said the two tasks were invalid because the Hydra had the help of Iolaus and was paid to clean the stables.

Hercules' eleventh challenge was to obtain the golden apple from the garden of the Hesperides.

Hercules first went to the old man of the sea, seized this shape-shifting water god, and asked him for the location of the garden.

When I went to that place, I found Atlas holding up the heavens.

Hercules offered to do the work for him if he would bring him apples.

Atlas was happy to do so, but Hercules successfully hooked them up and, after another switch, fled away with the apple.

The twelfth and final challenge was to bring home Cerberus, the three-headed watchdog of the underworld.

With the help of Hermes and Athena, Hercules descended into the underworld and met Hades.

The King of the Dead agreed to take him if he could do it without the use of weapons, and Hercules achieved this by catching the three heads together.

After showing Cerberus to a frightened Eurystheus, the king finally acknowledged that Hercules' task was complete.

After 12 years of ordeal, Hercules made amends for his family's tragic death and ascended to the throne of God in the Pantheon.

But Hercules' victory had deeper implications.

By overcoming the world's fearsome and chaotic powers, the heroes wiped out the relics of the Titanic Age and created a world where humans could thrive.

Through his deeds, Hercules ended the madness of the world with his own redemption.

When the Portuguese landed in Latin America 500 years ago, they must have seen this magnificent rainforest.

Amongst the diversity of life they had never seen before, there was one species that immediately caught their attention.

If you cut the bark of this tree, you'll find a very dark red resin, which was perfect for dyeing paints and clothing.

The local people used to call this tree "pau brazil", "the land of Brazil", hence the name "Brazil".

Brazil is the only country in the world that has the name of a country on a tree.

So I think you'll find that being a Brazilian forest dweller is especially wonderful.

Things made from forest resources are all around us.

Apart from such products, forests play an important role in regulating the climate.

In Brazil, 70% of the water that causes rainfall actually evaporates from forests.

The Amazon alone pumps 20 billion tons of water into the atmosphere every day.

That's more than the world's longest river, the Amazon, which flows into the ocean every day, 17 billion tons.

If you wanted to boil water to evaporate the same amount, you'd have to keep power plants all over the world running for six months.

So forests are very useful.

There are about 4 billion hectares of forest in the world

That's about the size of China, the United States, Canada, and Brazil combined.

Three-quarters of that is in the temperate zone, and only one-quarter is in the tropics. But it's this quarter, one billion hectares, that contains most of the biodiversity, and very importantly, 50 percent of the living biomass, or carbon, that resides here.

2,000 years ago, there were about 6 billion hectares of forest, about 50 percent larger than today.

In the last 2,000 years, we've lost 2 billion hectares of forest.

The area lost in the last 100 years accounts for half of that.

This coincides with the transition from temperate deforestation to tropical deforestation.

Let's think about this: In the last 100 years, we've lost as much forest in the tropics as in the last 2,000 years in temperate zones.

This is the rate of deforestation we are facing.

Now, Brazil is an important clue to solving this mystery.

Brazil has the second largest forest area in the world after Russia.

So 12 percent of the world's forests are in Brazil, but most of them are in the Amazon.

This is the largest forest, it's enormous in size.

It's the size of many countries in Europe combined.

80% of forest remains

this is good news

But in just the last 30 years, we've lost 15%.

At this pace, the Amazon River's mighty water pump that regulates the climate will quickly disappear.

The rate of deforestation accelerated in the late 1990s and early 2000s.

(The sound of a chainsaw) (The sound of a tree falling) 27,000 square kilometers of forest disappears each year

2.7 million hectares

Almost half of Costa Rica's area is lost each year

At this time - in 2003, 2004, I happened to be working for the government.

Together with my colleagues from the Ministry of National Forests, I was appointed to a team to identify the causes of deforestation, and to tackle this issue at the national level.

And we made 144 plans in different regions.

I'd like to examine each of these, but let me give you a few examples of what I've done over the last few years.

The first thing we did was put the system in the National Space Agency to see where deforestation was happening in near real time.

Now in Brazil, the system gives us monthly or bi-monthly information on where deforestation is happening and we can take immediate action.

And all of this information is public, and anyone can put it into their system.

This allows, among other things, the confiscation of 1.4 million cubic meters of illegally harvested timber.

Every sale of the timber monitored and confiscated in this way goes to a donation fund for conservation projects in the local community.

It has also helped crack down on bribery and other illegal activities, leading to the imprisonment of 700 people, including many public officials.

And cut off the credit and financing channels associated with illegal logging.

This is how we cut ties with banks and then linked them to the end consumer.

Supermarkets and slaughterhouses that buy produce from illegally logged areas are also responsible for deforestation.

I tried to solve the problem by giving these relationships a makeover.

We also touched on the issue of land tenure.

very important for conflict resolution

50 million hectares of land, the size of Spain, have been protected.

Eight million hectares of that was native land.

Let's see the result

Deforestation in Brazil has decreased by 75% in the last decade

(Applause) Compared to the average rate of deforestation over the last decade, we've protected 8.7 million hectares of forest, the size of Austria.

But more importantly, it prevented three billion tons of CO2 from being released into the atmosphere.

As a result of all the positive actions we've taken so far, it's by far the most contributory action to reduce greenhouse gas emissions.

You might think that taking these actions to curb deforestation would have an economic impact, because the economy would not be able to do the same.

But interestingly, the result is just the opposite.

In fact, during periods of sharply reduced deforestation, the economy grew twice as much as it averaged over the previous decade of increased deforestation.

this is a good lesson

As I said, deforestation has been curbed, so forest conservation and the economy may even be irrelevant.

This is good news, it's a great achievement, and it's definitely something to be proud of.

but it's still not enough

In fact, more than 500,000 hectares of forest were destroyed in the Amazon in 2013. That's the equivalent of two football fields of forest being cut down in the Amazon every minute last year, just last year.

If you add up the deforestation in the rest of Brazil, it's still the largest deforestation in the world.

Our country may be the hero of forest cover, but we are still the champion of deforestation.

So we're not satisfied, we're far from satisfied

So the next step that I'm thinking of is trying to reduce the overall deforestation in Brazil to zero, and that's achieved by 2020.

this is our next step

I've always been interested in the relationship between climate change and forests.

First, 15 percent of greenhouse gas emissions come from deforestation, which is the main contributor to this problem.

But forests, as far as we know, are the best way to absorb and store carbon, and they represent an important solution.

There's another relationship between climate and forests, which struck me in 2008 and inspired me to switch careers from forest conservation to climate change.

I visited British Columbia, Canada, with other national forestry business leaders who have partnerships with countries like Canada, Russia, India, China and the United States.

That's where I learned about the pine beetle, a woodworm that literally eats up the forests of Canada.

The brown tree you are looking at is actually dead.

It's dead because of woodworm larvae.

The ecology of this woodworm is affected by the coldness of winter.

Over the years, temperatures haven't cooled enough, which has affected woodworm populations.

This caused disease and killed billions of trees.

This leads me to believe that forests are the first and biggest victims of climate change.

So I began to think that if, together with my colleagues, we could prevent deforestation, we might also fall prey to floods, heat waves, fires, and other disasters caused by climate change.

So I quit my forestry work and went directly to work on climate change, and started figuring out what the challenges were and what to do about them.

The challenges in climate change are very clear.

the goal is clear

limiting the increase in global average temperature to 2 degrees

There are several reasons for that

But now I won't explain

Anyway, if we keep it below 2 degrees Celsius, we'll survive. The IPCC has set a target of 1 trillion tons of CO2 emissions between now and the end of the century.

If you divide that by the number of years, you get an average of 11 billion tons per year.

How much is 1 ton of CO2?

That's roughly the amount a small car would emit in a year driving 20 kilometers a day.

Or the equivalent of a one-way flight from São Paulo to Johannesburg or London

If it is a round trip, it will be 2 tons

11 billion tons is double that

We're currently producing 50 billion tons [annually], and it's growing.

It will probably rise to 61 billion tonnes by 2020.

We have to reduce this to 10 billion tons by 2050.

In the meantime, the population will grow from seven billion to nine billion, and the economy will grow from $60 trillion in 2010 to $200 trillion.

So if we're going to reduce our carbon footprint from seven tonnes per person per year to about one tonne, we have to do it in an efficient way.

You have to decide, too. Should I take a plane? Should You Own a Car?

The question is can we make it

This is exactly the same question that came to my mind when I was trying to come up with a plan to combat deforestation.

This is a complex and difficult problem. Is it really possible?

I think we can. Let's put it this way: Over the last decade, deforestation accounted for 60 percent of Brazil's greenhouse gas emissions.

now a little below 30%

Globally, 60% is attributable to energy consumption

So if we tackle the energy problem directly and treat it in the same way that we deal with deforestation, we may be able to achieve our goals.

I think there are 5 things to do

First, we have to ensure that land development does not generate carbon emissions.

We don't have to clear forests entirely for jobs, agriculture, and the economy.

This is evidenced by our efforts to reduce deforestation, the economy continues to grow.

The same thing could happen in the energy sector.

Second, we have to shift incentives to the right areas.

Today, about 50 trillion yen is subsidized every year to develop fossil fuels.

What about taxing carbon and using it to convert to renewable energy?

Third, we need to research where, when, and who emits greenhouse gases, and publish the results, so that we can take action on an individual basis.

Fourth, we're going to leapfrog through the stages of development, which means we don't have to start with installing landline phones before we have mobile phones.

The same billion people without access to energy could start with clean energy instead of fossil fuels.

Fifth and last, government, business and civil society should share responsibility.

We all have work to do and we all have to act

Finally, our future is not one of business as usual and waiting for fate.

We must have the courage to change our course, and if we invest in something new, we will be able to change our course.

And that's what we're doing to stop deforestation in Brazil, and I hope we can do the same for climate change.

thank you very much

(applause)

When you grow up like I did in a developing country like India, you can quickly learn creative ways to get more value out of your limited resources and reuse what you already have.

Take Indian potter Mansouf Prajapati, for example.

He built a refrigerator out of just clay. This refrigerator doesn't use electricity at all.

Keeps fruits and vegetables fresh for days

It's literally a cool invention.

If your phone runs out of battery in Africa, don't panic.

Ingenious entrepreneurs use their bikes to charge their phones

Now let's turn our attention to Lima, the capital city of Peru, in South America, where we are now.

At the University of Technology in Lima, they've built a giant billboard that can absorb moisture from the air and convert it into clean water.It can produce more than 90 liters of water every day.

How good are the people of Peru

They created water out of really thin air.

Over the past seven years, I've met and learned from hundreds of entrepreneurs in India, China, Africa, South America, and they continue to amaze me.

most of them don't go to school

We're not doing research and development in big labs.

The place where they live is the laboratory.

why do they do that

It's because we don't have the basic resources that we take for granted, like money and energy, and basic public services like health care and education are lacking in this region.

When external resources are scarce, we have no choice but to harness the richest resource within ourselves, the human creativity, and come up with clever ways to solve problems with limited resources.

In India this is called "jugaad"

"Jugaad" is a Hindi word that means "quick fix" or "a clever solution out of adversity."

Jugaad's solution to the problem isn't sophisticated or perfect, but it's cheaper and more valuable to create.

To me, people who use jugaad to create solutions to problems are like alchemists.

They can magically turn adversity into opportunity, turning something of little value into something of greater value.

In other words, they're masters of the art of making big things out of small things, and that's the essence of frugal innovation.

Frugal innovation is about producing something of greater economic and social value out of fewer resources.

It's not about making ends meet, it's about trying to do something better.

Let's take a look at what's happening in emerging markets, where entrepreneurs and companies are engaging in large-scale frugal innovations to provide healthcare and energy in economically efficient ways to millions of people with very little income but very high aspirations.

Let's start with China. Neusoft, China's largest IT services company, has developed a telemedicine solution that allows the elderly and poor living in remote villages to see doctors in urban areas without leaving their villages.

This method was born out of the fact that there are very few medical devices in rural areas that can be easily used by medical professionals such as nurses.

In China, where the number of elderly people is expected to exceed 500 million by 2050, such a medical system is absolutely necessary.

Now let's turn to Kenya, where half the population uses the mobile payment service M-Pesa.

Eighty percent of Africans don't have a bank account, so it's probably the greatest invention on the continent, and the amazing thing is that M-Pesa is creating disruptive business models in areas like energy.

M-KOPA, for example, is a home solar power solution that literally comes in a box with a rooftop solar panel, three LED lights, a solar radio and a portable charger.

A set of equipment costs 200 dollars, which is very expensive for many Kenyans, and it's mobile payment services that make this solution affordable.

You can purchase this complete set of devices with a $35 deposit, and the rest will be settled by paying 45 cents on your phone each day.

By continuing to make these payments for 365 days, it's paid off, after which the device is yours and you get electricity completely free of charge.

In Kenya, where 70 percent of people are self-sufficient, this is nothing short of a frugal innovation.

The whole point of frugal innovation is to use what's most abundant to deal with what's scarce, in this case cellular communications, solving the problem of energy scarcity.

Through frugal innovation, the developing world of the South is catching up to, and in some cases leapfrogging, the Northern Hemisphere.

China is saving millions by implementing telemedicine instead of building expensive hospitals, and Africa is making the leap to mobile payments and clean energy instead of building banks and running wires.

Frugal innovation works in the opposite direction of the northern hemisphere.

I live in Silicon Valley, where I'm always on the lookout for new technologies.

Imagine an iPhone 5, then a 6, and eventually a 7 and an 8.

Companies in the West spend huge amounts of money on research and development, and they consume vast amounts of natural resources to create more complex products, to differentiate them from their competitors, and to charge higher prices for new features.

The typical business model in the West is thus to invest more resources and produce more.

But sadly, this model will eventually die for three reasons. First, most consumers in the West have declining purchasing power and can no longer afford these expensive products.

Second, eventually we will run out of water and fossil fuels.

In California, where I live, water shortages are becoming a serious problem.

Third and most importantly, the economic gap between the upper and middle classes in the West is widening.

Did you know that more than 70 million Americans today don't have bank accounts because their current banks aren't focused on the services they want?

After a long period of economic stagnation in the West, people are beginning to think that eventually they will lose their high standard of living and face poverty.

I think the only way to sustain economic growth and success in the West is to learn to do more with less.

Happily, this has already started

Today, some companies in the West are adopting frugal innovations to make products more affordable for Western consumers.

Let me give you two examples.

When I first saw this building, I thought it must be some kind of modern house.

It's actually a manufacturing plant, called Grameen Danone, created as a joint venture between Muhammad Yunus' Grameen Bank and Danone, a multinational food company, producing high-quality yogurt in Bangladesh.

This factory is about a tenth the size of Danone's existing factory, which means it costs less to build.

You could say it's a lean, low-fat factory.

This factory doesn't have automated manufacturing, unlike factories in the West, and it relies on a lot of manual labor to create more jobs for local people.

This combination of economics and social sustainability has been so much appreciated by Danone that it plans to do the same in other parts of the world.

Now, looking at this example, you might think that frugal innovation happens at a low technical level.

It is different

Frugal innovation is also about making high-tech things more affordable and easily available.

Let me give you an example

In China, engineers at Siemens Healthcare have developed CT scans that can be easily handled by non-medical professionals such as nurses and medical technicians.

We can see more patients per day, and we can use less power, which is great for hospitals, but also for patients.

Originally intended for China, it is now spreading rapidly in the United States and Europe, where there is a demand for high-quality health care at low cost.

The idea of ​​frugal innovation has been brought to the West by entrepreneurs who address basic needs around them and create great solutions.

I'm going to give you a quick rundown of three startups that really surprised me personally.

The first is a company in Silicon Valley, which is very close to me.

It's called G-Thrive

So we built a wireless sensor, designed like a plastic ruler, that you can stick in different places in your farmland to get detailed information about soil conditions.

This dynamic data will allow us to optimize water use while also improving quality and yields, which is huge for California, which is facing water shortages.

You can recover your money within a year

The second is Be-Bound, which also originated in Silicon Valley, and is a mechanism that allows you to go to places where wi-fi or 3G or 4G isn't available, and still have access to the Internet.

How can we do that?

It's simple. We use basic technology SMS. SMS is highly reliable and most widely available in the world.

Three billion people have mobile phones, but they don't have access to the internet.

With this mechanism, we can lead them to solve their problems.

In France, a company called Compte Nickel is revolutionizing the banking sector.

Thousands of people can walk in and out of a little shop, and in just five minutes they can activate the service and get two things: an IBAN code and an international debit card.

The service fee is a flat rate of €20 per year

This means that all banking transactions, including deposits and withdrawals and debit card payments, can be done at no extra charge.

This is exactly what we call bank-free low-cost banking.

Amazingly, 75 percent of the people who use this service are middle-class French citizens who can't afford high bank rates.

I said that frugal innovation was first developed in the South and now adopted in the North.

Ultimately, what we want is for developed and developing countries to come together to come up with frugal solutions that work for all of humanity.

Fortunately, that's about to happen right now.

A look at Nairobi reveals this fact.

Nairobi has a lot of very bad traffic jams.

The first time I saw traffic in Nairobi, I was quite surprised.

In Nairobi, cows are walking on the road, so when you drive, you have to avoid them.

To remedy this situation, IBM Research in Kenya launched a solution called "Megaffic," a technology originally developed by Japanese engineers.

This technology doesn't rely on roadside sensors like those used in the West, which are too expensive for Nairobi.

Instead, Megaffic collects imagery and traffic data from a small number of low-resolution cameras in Nairobi, uses analytics software to identify areas of heavy traffic, and uses SMS to direct drivers to the most efficient routes.

Sure, the Megaffic isn't the brightest invention of self-driving cars, but it can get you from point A to point B 20 percent or more faster.

The Global Lab for Innovation, held at UCLA Health earlier this year, explored frugal innovations in health care from around the world that were not only 20 percent cheaper than what currently exists in the United States.

I'm trying to find something that works well.

We will also bring together innovators from the north and south to co-create affordable medical solutions for people around the world.

I've given you many examples of frugal innovation, but I think the question is, "How can we use frugal innovation?"

I've learned three principles from thrifty innovators around the world, and I'd like to share them with you, so that as many of you as possible can use them in your own organization.

The first principle is to keep it simple.

Don't create products to impress customers

Let's aim for something as simple and widely available as a CT scan made in China.

The second principle is not to try to create something completely new.

Let's take advantage of what already exists, for example, using cellular communications to provide clean energy, or small shops to provide banking services.

The third principle is to think and act laterally

Companies tend to concentrate their operations in large factories and warehouses and expand vertically, but in order to respond flexibly to a diverse range of customers, they must expand horizontally using a supply chain with smaller manufacturing and distribution organizations scattered throughout. Grameen Bank is an example of this.

The countries of the South made frugal innovations out of necessity,

Countries in the North are also facing finite resources and learning to make more and better with less.

Born in India, French, living in the United States, my hope is that by tearing down this man-made wall that separates the North from the South, we can gather the collective wisdom of innovators around the world to co-create frugal solutions that protect our precious planet while improving the quality of life for people around the world.

thank you

(applause)

We humans have an extraordinary potential to do good, but we also have an immense power to do harm.

Any tool can be used constructively or destructively, depending on how you use it.

it all depends on our motives

So it's very important to cultivate altruistic rather than selfish motives.

we are facing many problems right now

you may have personal problems

Your mind can be your best friend or your worst enemy.

There are also social problems: poverty, inequality, conflict, injustice in the midst of abundance.

And then there's the new problem, one we didn't expect.

10,000 years ago, there were about 5 million humans on Earth.

No matter what humans did, Earth's resilience would quickly heal the wounds of human activity.

After the industrial and technological revolutions, things changed.

We are now a major factor influencing the planet.

We are in the Anthropocene, the age of humans.

So if we say that we need to continue this unbounded growth -- boundless consumption of material resources -- it's going to be like this guy.

We took a big step today."

This cliff edge is what scientists have defined as "the limit of the Earth."

A variety of factors can be considered for inclusion in this limit.

We can also continue to thrive. If we maintain the same level of climate stability that we have seen in the last 10,000 Holocene, humans can continue to thrive for another 150,000 years.

But it all depends on voluntarily choosing to live a simple life and on moving from quantitative growth to qualitative growth.

In 1900, as you can see, we were well inside the safe range.

Then in the 1950s there was a big acceleration.

Now imagine what happens after this, take a breath

Now we're well past some of the Earth's limits.

At the current rate of biodiversity alone, 30 percent of all species on Earth will be extinct by 2050.

No amount of DNA cryopreservation will bring those species back to life.

So I'm sitting in front of a glacier in Bhutan, 7,000 meters above sea level.

In this "third pole," 2,000 glaciers are melting faster than the North Pole.

So what can we do in this situation?

No matter how complicated the environmental problem is, politically, economically, and scientifically, it can be simply reduced to the problem of altruism versus selfishness.

I follow Marx — I prefer Groucho

(Laughter) As Groucho Marx said, "Why should we care about future generations?

What did they do for me? ”

(Laughter) Billionaire Steve Forbes said the same thing on Fox News, but he was more serious.

When I was asked about sea level rise, I said, "It would be silly to change what I am doing today to see what happens 100 years from now."

If you don't care about future generations, go ahead.

One of the main problems of our time is to bridge between three timescales: short-term economics, stock market volatility, year-end financial results, medium-term quality of life, and long-term environmental quality.

When an environmental activist talks to an economist, it turns into a schizophrenic conversation that makes no sense at all.

they speak different languages

In the last ten years, I've traveled around the world, meeting economists, scientists, neuroscientists, environmentalists, philosophers, Himalayan thinkers everywhere.

It seems to me that there is only one concept that can bridge between these three time scales.

It's just a matter of valuing others more.

If we care more about others, we will have an economy based on compassion, where finance serves society, not society serves finance.

You wouldn't bet at a casino with assets that people have trusted and entrusted to you.

If you care more about other people, you're more likely to try to reduce inequality or bring some kind of happiness to society, education, or the workplace.

Otherwise, even if the country itself has power and wealth, it will become a country where each person is unhappy. What does that mean?

And if we cared more about other people, we wouldn't be ravaging the planet at the rate we're at now.

The question that arises is this: if altruism is the answer, is it not just a novelty ideal, but a real, practical solution?

Does true altruism even exist? Are we really not selfish?

Some philosophers have believed that we are irredeemably selfish beings.

But are we all really just villains?

Thank you very much

Hobbes and many other philosophers once said that

But some people don't look like villains

Or are humans enemies of humans?

But this guy doesn't look so bad

he's one of my friends in tibet

he is very kind

and we love to work together

Nothing makes me happier than working together, right?

And this is not limited to humans

Of course, there are struggles in life: survival of the fittest, social Darwinism.

But in evolution, of course there is competition, but we also need to collaborate more creatively to survive in an increasingly complex world.

We are good at working together, but we need more progress.

That's where the quality of relationships comes into play above all else.

OECD surveyed 10 factors including income

The number one factor people cited as the most important factor in their happiness was the quality of their social relationships.

This is not limited to humans

And look at these lovely grannies

So at the end of the day, the idea that we're hopelessly selfish is just an idea on paper.

No sociological study, no psychological study, has ever shown such a result.

rather the opposite

My friend Daniel Batson has spent his entire life doing experiments that put people in very complicated situations.

Of course, sometimes we're selfish, and some people are more selfish than others.

But after systematic research, he found that there are quite a few people who behave altruistically no matter what.

If you see someone badly injured and in pain, they'll empathize with their suffering and try to help them anyway, because they can't bear to watch them, and it's easier to help them.

After examining it, he said that humans are clearly altruistic.

this is good news

Moreover, we should also look at how common good deeds are.

look at this place

When we leave here, we won't say

“It was great! We were thinking about altruism without hitting anyone!”

You take that for granted, don't you?

If there was a fistfight, it would be a story for months.

No one pays attention to common good deeds, but they exist.

please see this

Some psychologists said, "I run 140 humanitarian projects in the Himalayas, and when I told them that it brings me a lot of joy, they said, 'Well, it's a fulfilling activity.'

I'm not altruistic, I just want to feel good about myself."

So you think this person jumped in front of the train and thought, "Okay, this is going to make me feel good."

(Laughter) And that's not all.

He was interviewed later and said, "I had no choice but to jump in anyway."

If you have no choice, it's an automatic action, neither selfish nor altruistic.

But do we really have no choice?

Of course, this person won't spend half an hour thinking, "Should I help or not?"

He had a choice, but the answer was clear and quick.

So I'm making a choice here as well.

(Laughter) Here are some people who had a choice: the pastor André Trocmé and his wife, and the villagers of Le Chambon-sur-Lignon.

During World War II, they saved 3,500 Jews, hid them, and fled them to Switzerland, risking their lives and the lives of their families.

Yes, altruism does exist.

So what is altruism?

It's a wish - "I want other people to be happy and find a source of happiness."

Now, empathy is an emotional or cognitive resonance that tells us whether this person is happy or in pain.

But empathy is not enough

If you continue to face suffering, you may experience empathic pain and burnout, so what you need is a higher realm of compassion.

Tania Singer of the Max Planck Institute in Leipzig and we have shown that the brain networks are different for empathy and compassion.

We have something wonderful, thanks to the process of evolution and the care of mothers and the love of parents, but we have to extend this.

It can also be extended to other species of organisms.

Now, if we want a more altruistic society, we have to do two things: individual change and social change.

Is personal change possible?

According to 2,000 years of meditation research, the answer is yes.

After 15 years of collaborative research between neuroscience and epigenetics, the answer is yes: altruism training changes the brain.

So I spent 120 hours in the MRI machine.

This is the end of the first two and a half hours.

The results were then published in many academic journals.

Structural and functional changes in the brain are evident in those who are trained to embrace altruism.

Just for reference, on the left is the meditator's resting state and during loving-kindness meditation, so you can really see what's going on.

they are not trained

So do we really need 50,000 hours of meditation? -no

Just 20 minutes of compassion and mindfulness meditation a day for four weeks causes structural changes in the brain compared to controls.

20 minutes a day for 4 weeks, that's it. Even a preschooler can do it.

Richard Davidson in Madison

We did an eight-week program about gratitude, compassion, cooperation, and mindful breathing.

You'll say, "It's not possible for preschoolers yet."

In eight weeks, your prosocial behavior changes like a blue line.

And then we do a completely scientific "sticker test."

In advance, each child has a favorite child, a disliked child, a lesser-known child, a sick child, and the children have to distribute stickers.

Before training, I give most of the stickers to the girl I like.

I trained these four- and five-year-olds for 20 minutes three times a week.

I stopped discriminating. I gave the same number of stickers to the kids I got along with and the kids I didn't get along with.

I think schools all over the world should do this.

So what do we do from there?

(Applause) When the Dalai Lama heard this, he said to Davidson, "Ten schools, 100 schools, the United Nations, the whole world."

So what do we do from there?

Personal change is possible

Should we wait until humans acquire the gene for altruism?

That would take 50,000 years. The environment won't wait that long.

Fortunately, culture evolves as well.

As experts have shown, culture changes faster than genes.

this is good news

You see, attitudes toward war have changed dramatically over the years.

So individual change and cultural change shape each other, and we can create a more altruistic society.

So what do we do from here?

I'm going back east

Now our project treats 100,000 patients a year.

We have 25,000 students in our school, and we run a four percent administration fee.

There are people who say, "You guys are doing it, but are you doing the theory?"

A "good deviation" is always there.

So I'm going back to the monastery to find more inner resources that I can use to serve others.

But what should we do on a more global level?

you need three things

We need more collaboration, not competitive learning in schools, but collaborative learning in the workplace, and working together without asking for anything in return -- there can be competition between companies, but not within them.

And we also need "sustainable harmony." I really like that word.

No more sustainable growth

Sustainable harmony means reducing inequalities

In the future, we will be able to do more with less, and we will continue to grow qualitatively, not quantitatively.

We need a more caring economy

"Homo economics" can't deal with poverty in abundance, and it can't deal with shared resources like the atmosphere and the oceans.

We need an economy based on compassion.

If I said that the economy needs compassion, the answer would be, "That's not our job."

But if they don't care, it's bad.

We need to contribute locally and take responsibility for the world.

We must extend altruism to 1.6 million other living species.

Living things are companions who live together in the world

we must practice altruism

Well then, everyone, long live the altruistic revolution!

Long live the revolution of altruism.

(Long live the altruistic revolution) (Applause) Thank you.

(applause)

I'm a blogger, I'm a filmmaker, I'm a butcher. Let me tell you how these three positions came together.

It all started four years ago when a friend and I broke our fast on the first day of Ramadan in a bustling New York mosque.

The streets were full of men with beards and skullcaps.

If you're an FBI agent, it's exciting.

For a long time, I'd seen pictures of this place like a lifeless, cold stone monument, a very quintessential image of the American Muslim experience.

Fed up with such a shallow view, we came up with the crazy idea of ​​breaking the fast in different mosques in different states every night during Ramadan, and sharing the story on our blog.

We called it "30 Mosques in 30 Days," and we drove around all 50 states, and we published more than 100 stories about Muslim communities, from a Cambodian refugee living on a public estate in L.A. to a Black Sufi living in the woods of South Carolina.

What appeared there was a complicated and beautiful picture of America.

The media coverage brought local reporters back to the Muslim community, but what really touched me was the emergence of people around the world making their own 30-mosque journey.

There were even two NFL players who took long vacations to travel

At the time when the 30-mosque tour was spreading around the world, I was stuck in Pakistan making a film.

Omar, my co-director, and I were in a volatile situation with many of our friends because of our differing views on the film.

The movie's title is "These Birds Walk."

We focused on the complexities of youth and family strife, but our friends urged us to make the film more "relevant" by dealing with drones and targeted killings.

Of course, I ignored those opinions and pushed the richness of affection and the radiance of reckless youth to the fore.

Our challenge behind this film was empathy, an emotion sorely lacking in cinema in our country.

With "These Birds Walk" showing in film festivals and theaters around the world, I was finally able to settle down in New York City. I had plenty of time, but no money yet, so my wife told me to cook more.

Every time I went to the local butcher to buy halal meat, I felt something was wrong.

Halal is a term that refers to meat that has been humanely raised and processed according to strict Islamic laws.

Unfortunately, most halal meat in America does not meet the standards required by Islam.

Every time I learned about this unethical practice, I felt like I was being polluted, especially since local businesses were profiting from Islam.

So I took the plunge and, with zero experience, a friend and I opened a butcher shop in the middle of the East Village fashion district.

(Laughter) It's called Honest Chops, and we're trying to revive halal by sourcing organic, humanely raised animals and keeping prices affordable for working-class families.

There is no other store like this in America

It's kind of a lie, but 90% of our customers weren't Muslim.

For many of our guests, it was the first time they had come into contact with Islam so intimately.

Such a wide variety of projects -- (Laughter) -- is actually a product of anxiety.

They're all desperate to simplify my faith and community -- it's an instinctive response to corporations and curators -- the only way to beat their system is to follow your own rules.

We need to take an imaginative approach to the fight.

We need to openly restore our faith to all images and all flesh through trust, relationships and affection that only we can have, because if we pander to the masses and cover up the story, we will not only fail, but we will only be outmaneuvered by those who spend their money and assets to make up our story.

But creative courage isn't needed for novelty or contemporary relevance.

Because our community is so unique and so beautiful.

Our community wants total understanding and respect.

thank you

(applause)

I'm sure some of you will be relieved or disappointed, but I'm not going to talk about the vagina today.

I started Vagina Monologues because I was worried about my vagina.

This concept of today, this world, I'm very worried about this over-the-top security force.

Everywhere I see, hear and feel this word

real security security verification surveillance clearance

Why does this over-the-top security make me feel more insecure than before?

What does true security mean?

And why have we Americans, in particular, become a security-obsessed nation?

In fact, I think of security as something elusive and unattainable.

We all grow old, get sick, and die. Time doesn't stop.

People change all the time and there is no stability

and this is actually good news

Unless, of course, the goal of life is to be safe.

When this becomes the goal of life, the following things happen.

Avoid long trips and avoid overly risky investments

Don't allow too many competing ideas at once, as they can confuse and intimidate you.

Fear of losing yourself can lead you to withdraw from new experiences, new people, new ways of doing things.

You don't have your own self, you get stuck in observable categories.

believe in Christianity, Islam or Judaism

Are you from India or Egypt or Italy or America?

heterosexual or homosexual or no sex

At least something like this would be a distinguishing factor

you are part of 'us'

Seek stability and compete with "them"

Refusing to move from a safe place

We must fight against those who invade this

Forming "we" compartments in countries and religions

It shields itself from doubt and change, and becomes something that freezes and numbs.

But the reality is that this shuts down the mind.

your safety is not guaranteed

I was standing on a beach in Sri Lanka, for example, three days after the tsunami, and it was clear to me that in five minutes, a 9-meter tsunami could roll in and swallow people.

In fact, this security effort was fueling my anxiety because I had to be on my guard all the time.

Some people are different from you, call them enemies

Places you can't go, thoughts you don't even look at, a world you can't live in anymore

It's a day of fighting to wipe out these and protect your own territory.

The purpose of life has changed to protect oneself

This is your mission and what you should do

Ideas are getting shorter

villains and saints criminals and victims

There are "them" that are different from "us"

I don't understand them, and I don't mind attacking them.

They're easier to imprison, to strip, to humiliate, to enslave, to invade, to kill. They're an obstacle to our security.

For the last six years, I've been privileged to travel to about 60 countries on V-Day for the international movement to end violence against women, spending time in many different places.

I've met women and men from all over the world, all from different walks of life. They've experienced war, poverty, racism, violence.

I spent time with women in Afghanistan under the Taliban, and of course they were violently oppressed.

I also visited a refugee camp in Bosnia.

I once met a woman in Pakistan who had her face melted by acid.

In America, I know girls who were date rape victims and girls who were drugged and raped by their best friends.

One of the great things I've found on my journey is that there are new types of people.

I liked the story of another world next to reality

I met them on V-day and I call them "vagina warriors"

With the heart of a warrior they walk through the heart of pain and loss without machetes or assault rifles or weapons of mass destruction.

Suffering, I died once in this, but I turned these toxins into medicine

Fueled by pain, they began channeling their energies into other missions and directions.

The warriors are now working tirelessly to ensure their experiences are not repeated.

There are thousands if not millions of warriors

I believe there are many in this venue

They have the freedom and positivity that are the foundation of my new paradigm.

Breaking away from the existing framework of perpetrator vs victim

The goal is to transform suffering, not your own security, so you don't have to worry about it. I think they can envision true security and a new way of looking at security.

I will tell you a little about my acquaintance

I am very excited to meet some women in Cairo tomorrow who are V-day participants and are working on the first women's shelter in the Middle East.

It happened when women in Cairo took the risk to speak out about the issue of violence against women in Egypt.

The aggressive activism has paid off, not only has shelters opened, but they've also garnered a lot of support from those who were previously against it.

Women who performed vaginal monologues at V-Day in Uganda this year have met with the wrath of the government.

i love this story

Cabinet and president meet to discuss Vagina Monologues entry into Uganda

The rally was in the press for weeks and sparked two weeks of controversy.

The government finally banned the showing of Vagina Monologues in Uganda.

But what's surprising is that the government's move to suppress women and the women's security actions have sparked a huge controversy not only in Uganda, but all over Africa.

All tickets were sold out, but all but 10 of the 800 spectators refused refunds.

$10,000 was raised for a play that was never released to the public.

There is a young woman in Minnesota named Kelly Raffleson

she is in high school

When she saw the Vagina Monologues, she was so impressed that she wore the "I ♥ Vagina" badge to school.

(Laughter) But she was terrified of being expelled.

The school told her that it was illegal, immoral, and not good for her to like a vagina.

At this point, she was in her senior year and had excellent grades, so she was afraid she would be expelled and wondered what to do. Eventually, she gathered her friends, maybe 100 or 150, and sent them to school wearing "I ♥ Vagina" t-shirts for the girls and "I ♥ Her Vagina" for the boys.

(Laughter) This sounds kind of trivial, but as a result, we now have sex education classes in our school, and for the first time, we're starting to talk about sex itself, and we're starting to see opportunities for young schoolgirls to talk about vaginas in public and to re-examine why it's wrong to say they love their vaginas.

I've talked about Agnes before, but I'd like to give you an update.

I met Agnes three years ago in the Rift Valley.

As a child, she underwent an unwanted clitorisectomy.

This excision would later have a profound impact on her life and haunt her.

Instead of committing suicide or escaping, I decided not to let other women go through the same experience.

For eight years she worked hard in the Rift Valley.

She carried a wonderful box of models of the human torso, and wherever she went, she taught them the difference between a healthy one and a cut vagina.

During this time, she also gave sex education to her parents.

saved 1500 women from mutilation

I got to know her on V-day, and when I offered to help her, she said, "I could go faster with a Jeep," so we gave her a Jeep.

Since getting the jeep, she's saved 4,500 women.

When asked, "What else?"

He said, "If you raise money, maybe we can build a shelter."

Three years ago, Agnes opened a sanctuary to eradicate mutilation.

When she started her mission eight years ago, she was the target of disrespect, slander, and utter abuse on the ground.

I'm proud to tell you this, half a year ago she was elected deputy mayor of Narok.

(Applause) The message I want to share with you today is that if security is the end goal and you're only focused on the end result, you're not only making other people uneasy, but you're making yourself even more uneasy.

True security isn't about turning a blind eye to death.

Don't run away from your loss, embrace your grief and surrender.

True security isn't about knowing what you don't know

It's a greedy desire for relationships rather than power

You can't buy it, you can't plan it, you can't make it with bombs.

It's a process that's deeply ingrained in us, a keen sense of how every action in one small village affects everywhere.

True security is not the ability to withstand enigma, the complexity, the ambiguity, but the ability to believe in the status quo.

Eight years ago, when I started my V-Day journey, something happened: I got lost.

I was on a plane from Kenya to South Africa, and I didn't know where I was.

I didn't know where I was going or where I was coming from, and I was in deep anxiety and panic.

And suddenly it dawned on me that all humans are inevitably on the move, so it doesn't really matter where you go from where you're going.

we are all refugees

Coming from somewhere, always looking for a journey, moving to a new place.

Freedom is not tied to one group, but to be able to find oneself in other groups that come.

It's not that I don't have values ​​or beliefs, it's that I'm not bound by them.

these are not my weapons

In a shared future, it's just a matter of commonality.

The end goal is not to become vulnerable and shut down and secure, but to realize a position of relationship with other companies.

thank you

(Applause) Are you okay? Are you tired?

When you wake up in the morning, do you always feel hope or despair?

Carl Jung said that in order to survive in the 20th century, we need to have two different ideas at the same time.

One of the lessons I've learned from these activities is to acknowledge the emotion of grief.

And if I accept the sadness and the tears and still keep going, I'll be fine

When you start pretending not to be disturbed by what you see, pretending not to be moved, that's the problem.

As you move from country to country, city to city, for example, the level of violence against women, the prevalence of it, the banality of it, has such a powerful impact on your mind that it will take time to come to terms with it now or in the future.

There are many problems in the world, such as disease and poverty, but you have eight years to fight against violence against women.

have spent why?

I see women as our origins, our mothers, our origins of life, our mysterious future. When the United Nations says that one in three women on the planet will be raped or assaulted during their lifetime, they think that this is desecrating the origins of life on earth, our origins, childbirth itself.

Imagine Rape Victim Raising Children

The ability to work, the ability to see the future, how does that affect our ability to live life rather than just survive? I believe that if we can find a way to ensure the safety and dignity of women, it will lead to respect for life itself.

I'm working with my students on tiny robots.

Think of it as the robot version of a creature you know all too well: the ant.

As we all know, ants and other insects of this size have some pretty amazing abilities.

You've probably seen swarms of ants and other insects pulling potato chips at a picnic.

What's the real difficulty in making ants like this?

First of all, how do you put the power of ants into a robot of the same size?

First we have to figure out how to move something this small.

You have to support the movement with legs, efficient motors, etc., and you have to have sensors, power sources and controllers to make the semi-automatic ant robot move.

And finally, to make them functional, they have to come together and be able to do bigger things.

Let's start with mobility

Insects move around very well

This video is from the University of California

Cockroaches are able to walk on very uneven surfaces without falling over, because their legs are made of a combination of hard and soft materials, the kind traditionally used in robots.

Jumping is also an interesting way of moving small creatures.

By quickly releasing the energy stored in the spring, you get a great deal of force, like jumping out of water.

One of the great contributions that my lab has made is the mixing of hard and soft materials in very small mechanisms.

The jump mechanism is very small, about four millimeters wide.

The hard material is silicone and the soft material is silicone rubber.

The basic idea is to contract this, store energy in a spring, release it, and jump.

So it doesn't have a motor or a power source.

The methodology required to make this work is what I call "grad students and tweezers" in my lab.

This is Aaron, the graduate student, with the tweezers in question, and here you can see a four-millimeter-sized mechanism jumping 40 centimeters high.

This is 100 times taller than it is

It bounces on the table without breaking. It's very sturdy. Of course, it's very small, so you have to be careful not to lose it.

But eventually, we want to put motors in this one too, so the students in my lab are working on motors on the millimeter scale for tiny automated robots.

But for mobility considerations, we're a little cunningly using magnets to start things of this size.

This is going to be the leg of the microrobot, and you can see the embedded magnets with the silicone rubber joints that are driven by the external magnetic field.

This leads to the robot I showed you earlier.

The interesting thing that this robot reveals is how insects of this size move.

It's a very good model for how everything from cockroaches to elephants moves.

When they all run, they move a little like jumping,

At very small sizes, the force between the legs and the ground influences the motion more than the volume of the body, which is why it bounces.

It's still not working, but I made something a little bigger that you can run around.

It's one cubic centimeter in size, one centimeter wide, and it's very small.

It's pretty fast for it's size, but due to the limitations of the testing environment, this speed is the limit.

But I think I know how it works

There's even a 3D-printed one that can jump over obstacles, very similar to the cockroach I mentioned earlier.

I want to eventually have everything

We want to have sensors, power sources, controllers, actuators, all of them, but they don't have to all come from living creatures.

This robot is about the size of a candy tablet.

In this case, instead of magnets and muscles to move around, we use rockets.

It's a microengineered energetic material that you can make a few pixels out of and put on this robot's belly, and then it'll feel the light intensify and jump.

the following video is my favorite

You can see the 300 mg robot jumping about 8 cm.

Measures just 4mm x 4mm x 7mm

You can see that when the energy is first released, there is a big glow and the robot is floating in the air.

There's a big light, and the robot is jumping through the air.

This robot has no ropes or wires.

Everything was on board, and it jumped in response to the student turning on the nearby desk lamp.

So you can imagine the amazing things that a robot this size that can run and crawl and jump and roll can do.

Think of the debris left after a natural disaster like an earthquake.

What if these little robots could run around the rubble looking for survivors?

Or what if we had a bunch of little robots scurrying around the bridges to make sure they were safe, and it wouldn't happen like what happened near Minneapolis in 2007.

Imagine a robot that could swim through your veins.

It's like Isaac Asimov's "Micro Desperate Zone", right?

What if a robot could operate without opening the abdomen?

If we had a little robot that could move around like a termite, it could really change the way we build. Termites build very well-ventilated mountains as high as eight meters in Africa and Australia to live with other termites.

I've shown you some of the possibilities of what you can do with small robots.

Although some progress has been made, there is still a long way to go, and I hope that some of you can contribute to this journey.

thank you

(applause)

You've found Leonardo da Vinci's secret underground vault, secured with a series of matching locks.

Luckily, I have a treasure map with three codes: 1210, 3211000, and uhm.

The last one seems to be missing a number

It looks like you'll have to figure it out yourself

The first two numbers have something in common. They're called self-describing numbers.

It's a special type of number whose structure describes itself.

Each digit of a self-describing number indicates how many times the number corresponding to that position occurs throughout the number.

The first digit indicates the number of 0's, the second digit indicates the number of 1's, the third digit indicates the number of 2's, and so on until the last digit.

The last key is a 10-digit number, and there is exactly one 10-digit self-describing number that does.There is exactly one 10-digit self-describing number that does.

what is this number

Pause here if you want to think for yourself

3 seconds, 2 seconds, 1 second until you get the answer If you blindly try different combinations, it will take your whole life.

So let's analyze the self-described numbers we already have and look for patterns.

If you add the digits of 1210 together, you get 4, or the number of digits in the number.

This makes sense, because each digit tells us the total number of times a particular number appears.

So each digit of our 10-digit self-descriptive number must add up to 10.

This shows another important thing: you shouldn't have a lot of big numbers.

For example, if it contains one 6 and one 7, then one number must appear six times, and the other seven times, or more than 10 digits.

It can be concluded that no more than one number in the whole number is greater than five.

If one of the four numbers 6, 7, 8, 9 is used, it works well.

0's are placed in positions corresponding to unused digits

Yes, we know that it contains at least three zeros, which also means that the leading number must be three or more.

While this first digit represents the number of zeros, each subsequent digit represents how many times that particular non-zero digit appears.

Add the numbers in each digit, except for the first digit. At this time, adding 0's does not increase the total, so the total number will match the number of non-zero digits, including the first digit.

For example, if we apply this to the first code, two plus one is three digits.

Subtracting 1 from this gives us the number of non-zero digits, excluding the first digit - 2 in this example.

Let's take a closer look at everything

We now know the important thing: the number of non-zero digits that appear after the first digit is the same as the sum of these digits minus one.

So how do we arrange it so that the sum of the digits (excluding the first digit) is 1 greater than the number of non-zero positive integers (excluding the first digit)?

The only possibility is to add one 2 and the rest 1.

How many 1's are there?

It turns out that just two is correct. Any more 1's would require an extra digit to represent the number, like 3 or 4.

Now, in this problem, the leading digit is greater than or equal to 3, representing the number of 0s. 2 is the number of 1's, and there are two 1's, one of which is the number of 2's and the other corresponds to the leading number.

As for what it is... well, it's time to guess what the leading number is.

2 and 2 1's total 4 10 minus 6

All you have to do is put them all in the right place.

The vault door slides open and what you find inside is...

It was the long-lost autobiography of Da Vinci.

2,300 years ago, the rulers of Alexandria set out to do one of humanity's most daring goals: to gather all the world's knowledge in one building.

In its heyday, the Library of Alexandria held an unprecedented number of books and attracted some of the world's greatest Greek scholars.

But by the end of the fifth century, this great library had disappeared.

It was believed to have been caused by a large fire.

The truth about the rise and fall of this library is more complicated.

The idea to build it was Alexander the Great.

After making a name for himself as a conqueror, a student of Aristotle, he set his sights on turning the city that bears his name into a city of knowledge.

He died before construction began, but his successor, Ptolemy I, carried out Alexander the Great's plan to build a museum and library.

Whether the Library of Alexandria, located in the royal quarters of the city, had magnificent Hellenistic columns, was influenced by Egyptian culture, or was a mixture of both cultures, its exterior remains unknown today.

It's true that there were lecture halls and classrooms and, of course, bookshelves.

As soon as the building was completed, Ptolemy I began to supply scrolls, mainly Greek and Egyptian.

At his own expense, he brought scholars to Alexandria to study.

Although the library was expanded by scholars' own manuscripts, the rulers of Alexandria still sought copies of books from all over the world.

Alexandria was a hub port for ships navigating the Mediterranean.

Ptolemy III ordered every ship that anchored to hand over the book for copying.

The library clerk copied the book, put the original in, and returned the copy to the ship.

They also hired men to scour the Mediterranean region for new documents, and the rulers of Alexandria stopped the export of Egyptian papyrus for scrolls to prevent rivals from copying it.

After a great deal of effort, the library has amassed hundreds of thousands of books.

As libraries have grown, there's more information available than ever before, but it's getting harder and harder to find the information you want.

A scholar named Callimacus of Cyrene set out to come up with a solution: to create a 120-volume bibliographic catalog called Pinaces, which was the first of its kind.

Thanks to Pinakes, people are now able to keep track of their ever-growing collection of books.

and discovered something amazing

1,600 years before Columbus sailed, Eratosthenes not only realized that the earth was round, but also calculated its circumference and diameter within a few kilometers.

Heron of Alexandria built the world's first steam engine, more than a thousand years before it was finally reinvented by the industrial revolution.

Founded in 283 BC, the library thrived for nearly 300 years.

But in 48 BC, Caesar besieged Alexandria and set fire to the ships in the bay.

For a long time, scholars believed that the library had been destroyed in a fire.

Some of the expanding collection may have been destroyed, but ancient documents tell us that scholars continued to visit the library long after that.

That, too, faded away as the city changed, passing from Greece to Rome to Christians to Muslims.

Each time the rulers changed, they saw the library as a threat rather than a pride.

In 415, a Christian ruler murdered the mathematician Hypatia for studying ancient Greek manuscripts in a library because the manuscripts were deemed blasphemous.

The Library of Alexandria and its collections are long gone, but humanity is still trying to find the best ways to collect, use and preserve knowledge.

In our modern world, with so much more information and so much better ways to preserve it, will today's digital documents outlast the scrolls of ink and paper in Alexandria?

Even if our collective knowledge is physically safe, we must resist the insidious forces that seek to destroy our digital archives: fear of knowledge and arrogance of the past.

The difference from the past is that today we know how to deal with it.

When I was young, I lived in Kansas, one of America's most conservative states, and I lived proudly as a maverick.

without being overwhelmed

I also incorporated more and more quirky trendy clothes and hairstyles.

He was very outspoken and very sociable.

Even these photos and postcards from when I went to London for a short term 16 years ago clearly show that I don't care if people think I'm an eccentric.

(Laughter) But that was exactly that year, 16 years ago in London, when I realized that I was unique in myself, and everything changed.

I've become the complete opposite of who I used to be.

Lock yourself in your room and stop interacting with people

I stopped showing up in clubs and leadership activities.

I didn't want to stand out from the crowd anymore.

I told myself that this is the path everyone takes in becoming an adult, not because I want people to accept me.

Until then, I thought I'd be fine even if people didn't recognize me

anyway i was a little weird

But looking back, the very moment I saw that difference in myself, I began to blend in and try to hide.

Hiding is a progressive habit, and once you start hiding, it becomes harder and harder to come out and expose yourself.

In fact, even now, when people ask me what I'm talking about, I've even made up stories to hide the real intention of this TED Talk.

So, 16 years later, it's both fitting and scary that I decided to return to this city and stop hiding on this stage.

What have I been hiding for 16 years?

i'm a lesbian

(Applause) Thank you.

I've been struggling with not being able to say this word, and I didn't want to be stereotyped by saying it.

Every time I thought about coming out, I wanted to be just Morgana, not just Morgana, not my lesbian friend Morgana, not my gay colleague Morgana.

it's just morgana

It may not be a big deal for those of you who come from big cities.

In fact, it may seem strange that we've been suppressing and hiding this truth for so long.

But I was haunted by the fear of not being accepted.

Of course I'm not alone

A 2013 Deloitte study found that a surprising number of people hide their identity.

61% of employees surveyed reported making small changes in their behavior and appearance to fit in at work.

83% of all gay, lesbian and bisexual employees admit to changing their behavior in some way to avoid being "too gay" at work

The study found that even at companies that tout diversity and educate for inclusion, employees struggle to be themselves in the workplace because they believe they can't succeed long-term unless they're "in tune."

While I was amazed that so many people, just like me, were wasting so much energy and hiding themselves, I was terrified of the life-changing consequences and long-lasting social repercussions of breaking the silence.

12 years - life expectancy is said to be this short if gays, lesbians, bisexuals are not socially accepted and live in an anti-gay society.

12 years less life expectancy

After I found out about it in The Advocate magazine this year, I couldn't keep my mouth shut.

The effects of personal stress and social stigma are a deadly combination.

The study found that gays in anti-gay societies are more likely to suffer from heart disease, violence and suicide.

I've come to realize that what I once dismissed as just a personal thing actually has ripple effects that affect the workplace and society as a whole, affecting everyone like me.

By choosing to hide and not revealing my true identity, I may have unknowingly helped create this same environment and discriminatory atmosphere.

I've always thought I had no reason to come out publicly as gay, but this year I was reminded of the social repercussions of my silence when I missed an opportunity to change the racist climate in my home state of Kansas.

In February, the Kansas House of Representatives voted on a bill that would, in effect, allow companies to refuse to serve gays on the grounds of freedom of belief.

A former colleague and friend's father was a Kansas congressman.

He voted in favor of a bill that said, "You don't have to serve me."

How do my friends feel about people who are different from me: lesbian, gay, bisexual, transgender?

what about the father-

I don't know, I didn't tell the truth.

That shook me to the core

What if you had come out a few years ago?

Did my friend tell my dad about me?

Did he vote against it?

I don't know anymore, but this event made me realize that I didn't try to change anything.

Ironically, as an HR person, I'm in a position to connect employees, help them grow, advocate for diversity in our society, and reflect it in the workplace, but I haven't done anything for diversity.

When I came to this company a year ago, I thought, this company has an anti-discrimination policy, and it stands for gays, lesbians, bisexuals, and transgender people.

Respect for diversity is evident in inclusion education around the world.

When I walk through the doors of this company, I finally come out-

no i didn't

I didn't do anything without taking advantage of this opportunity.

(Applause) I was looking through my London diaries and scrapbooks from when I was studying in London 16 years ago, and I came across a passage from Toni Morrison's book "Paradise."

"There is more fear inside than outside"

There, I left a message addressed to myself, "Things to remember."

I was trying to pick myself up, break out of my shell and hit the streets of London, but what I didn't understand was the need to know and accept myself.

It wasn't until many years later that I finally realized that the biggest obstacle I had to overcome was my own fear and anxiety.

Only by facing our inner fears can we change our outer reality.

I've been hiding too long today - I chose to expose myself

Hopefully, I will never hide again, and by coming out today, I hope that I can help change the numbers in society, and help people who struggle with their own differences feel more fully themselves, both at work and in their personal lives.

thank you

(applause)

It's exactly 3:33 on June 12, 2014. On a mild winter afternoon in São Paulo, Brazil, on a typical South American winter afternoon, this young man rejoiced as if he had scored a soccer goal.

He's paraplegic (paralysis in both legs), and he has no feeling from his chest down to his toes. This was due to the car accident that killed his brother six years ago, and Giuliano had a complete spinal cord injury that left him in a wheelchair.

Giuliano Pinto took the opening kick at the 2014 Soccer World Cup here in Brazil with nothing but the power of thought.

He can't move his body, but he can envision the movements needed to kick the ball.

He was an athlete before his injury, and now he's a para-athlete.

He'll be competing in the Paralympics in a few years.

What Giuliano didn't lose from his spinal cord injury was his ability to dream.

And he had a dream that afternoon in a stadium with a crowd of 75,000 and billions watching on TV.

That kick was the moment when 30 years of basic research paid off: the study of this amazing universe working between our ears, the brain. The brain is compared to the universe that stretches above us, because it has 100 billion elements that communicate with each other through electrical signals.

When I, along with John Chapin, 15 years ago proposed in a paper called the Brain-Machine Interface, that we could connect the brain to a machine so that animals and humans could move the machine by simply imagining what they wanted to do, no matter how far they were from the machine.

Yet this Scotsman and this Brazilian continued to believe, because we were raised that way in our own countries, and we've been demonstrating for 12 to 15 years that this is possible.

Brain-Machine Interface is not rocket science, it's brain research.

We simply use sensors to read the electrical signals that the brain emits to give movement commands. These signals need to be downloaded to the spinal cord, so we installed sensors that can read hundreds, and now thousands, of brain cells simultaneously.

By doing so, we turn those signals into digitized commands that machines, electronic controllers, and virtual devices can also understand, so that the subject imagines movement and the device follows the commands of the brain.

By equipping these devices with different types of sensors, as you'll see, they send messages back to the brain to confirm that the voluntary movement was performed wherever it was, whether right next to the subject, right next door, or on the other side of the world.

When this message is fed back to the brain, the brain has achieved its goal.

Here's an experiment I published a few years ago where a monkey is learning how to move an avatar's arm without moving its body, a virtual arm that doesn't actually exist.

What you're hearing is the brain of a monkey probing three seemingly identical circles in virtual space.

In order to be rewarded with the monkey's favorite orange juice treat, the monkey must explore these objects by touch, not by sight, but by touch. Because each time this virtual hand touches one of the objects, an electrical signal is sent to the monkey's brain, conveying a tactile sensation on the surface of this object, so the monkey knows which one to grab.

It's the perfect Brazilian lunch, and you can get orange juice without moving a muscle.

Observing this, we're back to the idea we presented 15 years ago.

I revived my thesis

He pulled a paper out of a drawer and proposed that it might be possible to reactivate a paralyzed human with a brain-machine interface.

This comes from what if it happens to me, and it can happen to anyone.

Let me tell you, this is happening very quickly.

A single millisecond of collision in a car accident can completely change your life.

If you completely damage your spinal cord, you won't be able to move because electrical signals won't reach your muscles.

But electrical signals continue to be created in your head.

Paraplegics and quadriplegics dream every night that they are moving.

I can do it in my head

The question is, how do we get that signal out there and make it move?

And what we suggested was, "We should build a new body."

I thought I'd make a robot vest

And this allowed Giuliano to kick a ball just by thinking. He wore the first brain-controlled robotic vest, which allows paraplegic and quadriplegic patients to move and receive feedback.

This is the original idea from 15 years ago

What I'm going to show you is 156 people from 25 different countries, from all five continents of our beautiful planet, giving up their lives, their patents, their dogs, their wives, their kids, their schools, their jobs, coming to Brazil and doing this in 18 months.

Because a few years after Brazil was chosen to host the World Cup, I heard that the Brazilian government wanted to do something meaningful with the opening ceremony, in a country that had revolutionized and perfected football -- until I met the Germans, of course.

(Laughter) But that's another story, let's talk to another neuroscientist.

Brazil's goal was to show a completely different side, a country that values ​​science and technology, a country that can give gifts to the 25 million people around the world who are incapacitated by spinal cord injuries.

The Brazilian government went to FIFA and suggested, "Let's kick off the 2014 World Cup with a young Brazilian paraplegic who can kick the ball with a brain-controlled exoskeleton and feel what it feels like to kick the ball."

The people at FIFA must have looked at us and thought we were crazy, and they said, "Okay, let's do it."

We had to do everything from scratch in 18 months.

No exoskeletons, no patients, nothing was ready.

These people came together, and in 18 months, they had eight patients in training, and they built this from scratch, Brasil-Santos Dumont 1.

The first brain-controlled exoskeleton was named after Brazil's most famous scientist, Alberto Santos Dumont, who built the first controlled airship on October 19, 1901, and flew it in front of a million people in Paris.

Apologies to my American friends -- I live in North Carolina -- but this was two years before the Wright brothers flew over the North Carolina coast.

(Applause) Flight technology is Brazilian. (Laughter) We worked with them to build an exoskeleton, a hydraulic machine with a 15-degree range of motion, commanded by noninvasively recorded brain signals called electroencephalography.

This exoskeleton is covered with artificial skin, which was created by my good friend Gordon Cheng in Munich, so that the feeling of the joints in motion and the feet touching the ground can be conveyed to the patient through a vest or shirt.

A smart shirt that generates micro-vibrations delivers feedback that tricks the patient's brain into thinking that it's not the machine that's perceiving the sensation, but the patient who is walking again.

We're working on this development, and here's one of our patients, Bruno, walking for the first time.

This takes a few seconds, because when you're setting it up, you'll see a blue glow on the front of the helmet. Bruno imagines the movement he's going to do, and the computer analyzes it, and Bruno confirms it.

he's just checking and starting to walk

After being unable to move for nine years, he is walking on his own feet.

And even more -- (Applause) Not only is he walking, but he's also feeling the ground. As Exo (the skeleton) picks up speed, he tells me that he's walking on the sands of Santos, the beach resort he frequented before his accident.

So the brain is creating new perceptions in Bruno's head.

When he finished walking -- already past the time -- he said, "When I get married, I need you to lend me this, because I want to walk myself to the pastor and pick up the bride myself."

Of course you can use it whenever you need it.

This is something I wanted to show you at the World Cup, but for some reason, FIFA cut the broadcast in half.

What you're going to see is Giuliano Pinto putting on the Exo and just a few minutes before heading out onto the pitch, he's doing the kicking motion and actually doing it in front of the crowd.

A flashing blue light indicates that the exo is ready.

It receives thoughts, transmits feedback, and when Giuliano is about to kick the ball, two lights, one green and one yellow, flow from the helmet and down his legs, indicating that commands made in the head are passed on to the exos for execution.

In 13 seconds, Giuliano did it.

you can see the command

He gets ready, the ball is set and he kicks it.

What's even more amazing is, 10 seconds after kicking it, he looked up at us on the pitch and told us, "I can feel the ball."

this is irreplaceable

(Applause) So where does this research go from here?

In the remaining two minutes, I will tell you more than you can imagine.

Brain control technology already exists

This is the latest one, which we announced a year ago, and it's the first brain-to-brain interface. Two individuals of an animal can exchange messages with their thoughts. When one individual senses something from the environment, it sends a SMS, a neurophysiological signal, so to speak, to the other individual, and the other individual can perform the required movement without knowing the message from the environment, because the message is coming from the brain of the first individual.

this is the first demo

I'd like to show you the latest, so I'm in a bit of a hurry.

Here you can see the first mouse presses on the left side of the cage to receive information from the light on the left side of the cage and receive a reward.

you're moving to the left

At the same time, this mouse is sending a thought message to the other mouse, which is not seeing the light, so there is a 70 percent chance that the other mouse will also go to the left and be rewarded without the light stimulating its retina.

We're taking this a little bit further and having the monkeys collaborate on thoughts in a network of brains, sharing brain activity and moving together the virtual arms that I showed you earlier.

One monkey controls the x-axis, the other controls the y-axis.

But when you have three monkeys working together, one manipulating the x- and y-axes, another manipulating the y- and z-axes, and a third manipulating the x- and z-axes, something really interesting happens.

we can actually work together

The black dots represent the average of three brains working in parallel at the same time.

This is the definition of a biocomputer, how brain activity interacts to achieve a motor goal.

How do you plan to expand in the future?

i don't know that

'Cause I'm just a scientist

(Laughter) We're just getting paid to push the limits like kids and discover what's out there.

There's only one thing we know: someday, decades from now, our grandchildren will be surfing the internet just by thinking, or a mother with a blind, autistic child will be able to give her eyesight, or she'll be able to speak thanks to brain-to-brain transmission.

thank you

(Applause) Thank you.

Bruno Giussani: Miguel thank you for keeping it in time

I'm going to give you a few more minutes to talk to me, because there are a few things I'd like to know more about, and we need brain-to-brain communication to understand what's going on.

Let's clean things up a bit

If I understand correctly, one monkey receives the signal and the other monkey responds to that signal, so the first monkey receives it and emits a neurological signal?

Miguel: It's a little different

The monkeys don't know there are two other monkeys.

The visual feedback they receive is two-dimensional, but the tasks they perform are in three dimensions.

You have to move your arm in three dimensions.

Each monkey sees only the two dimensions it manipulates on the video screen.

To do that, you need at least two monkeys with brain entrainment, but ideally three.

So what you're seeing is that if one of them can't keep up, the other two will perform better and the other one will be able to keep up and adjust dynamically, but the overall synchrony is still the same.

Now, without teaching the monkeys, if you switch the axis that each brain is operating on, say, the monkey was operating on the x and y axes, but now it operates on the y and z axes, the animal's brain instantly forgets what it was before and starts focusing on the new axis.

What I'm trying to say is that no Turing machine, no computer, can predict what a network of brains will do.

Even if we absorb science and technology as part of our bodies,

Technology will never absorb us

it's simply not possible

Bruno: How many experiments have you done?

How many times did you succeed versus fail?

Miguel: Dozens of times

With three monkeys? did a few times

I can't tell you here without trying it a few times.

For the sake of time, I forgot to mention that just three weeks ago, a group of European researchers did the first brain-to-brain communication between humans.

Bruno: What is it like?

Miguel: Here's a bit of information. Big ideas always start small. One subject's brain activity was relayed to a second subject using a non-invasive technique.

Like a mouse, Subject 1 receives visual messages and relays them to Subject 2.

Subject 2 receives two different pulses in his visual cortex, either a magnetic pulse or another pulse.

One pulse indicates that the subject saw something

The other is to indicate that you've seen something else.

Subject 2 was able to verbalize the messages that Subject 1 sent over the intercontinental Internet.

Bruno: Oh, it's going in that direction.

Let's talk about that at the next TED conference.

It was Miguel Nicolelis Thank you Miguel: Thank you Bruno

It's very fashionable and fun to talk about all the colors and shapes and smells and flavors of food.

But once food has passed through your digestive system and into your toilet, it's no longer fashionable.

It's rather uncomfortable

I'm a man who has evolved from a 'bull-shit' to a 'full-shit'

(Laughter) My organization, Gram Vikas, which means "rural development organization," was specialized in the area of ​​renewable energy.

Mainly we were producing biogas for rural use Mainly we were producing biogas for rural use

We were producing biogas in India from animal dung, mainly cow dung.

I'm a gender sensitive person, so I call cow dung "bulshit."

And then later on, I realized the importance of hygiene and the disposal of human waste, so I entered the field of hygiene.

Poor water quality causes 80% of diseases in India and most developing countries Poor water quality causes 80% of diseases in India and most developing countries

What is affecting water quality is the hopeless lack of hygiene in the disposal of manure.

Human waste, in its most unvarnished form, finds its way into all water: drinking water, bathing water, washing water, irrigation water.

This is the cause of 80 percent of diseases in rural areas.

In India, unfortunately, carrying water is a woman's job.

Women have to carry all the water needed for household chores.

It's a sympathetic situation

Open defecation is practiced everywhere

70% of India's population defecate in the open

Squat outside, feel the breeze, cover your face and your butt - no guilt, no taint, 70% of India poops outdoors.

Globally, Indians account for 60 percent of all open defecation.

What a lovely national trait

I don't know if we Indians can be proud of such a national character.

(Laughter) We started talking to a number of villages about how we could work together to address this issue of sanitation.

Together we launched a project called MANTRA.

M for Movement A for Action N for Network T for Transformation RA for Rural

This is a story of rural change.

Villages that support this project form a legal body, all members of which are governing bodies, who choose the people who will carry out the project, and they will be responsible for running and maintaining it in the future.

They decided to build toilets and shower rooms.

From a protected source, to a reservoir on a hill, water is supplied to every home through three faucets, one for the toilet, one for the shower and one for the kitchen, 24 hours a day.

Unfortunately, our cities -- New Delhi and Bombay -- don't have 24-hour water supply.

But these villages decided to make it happen.

The difference in water quality is clear

In India, there is a law favored by government officials and other dignitaries, which is that poor solutions are good for the poor, and more radically, poor people prefer merciful solutions.

Combined with the Nobel Prize theory that "the cheapest is the most economical," it's a powerful cocktail for the poor.

we are fighting this

The poor have been mocked for centuries

In terms of hygiene, they must not be abandoned.

Cleanliness is more about dignity than the physical matter of disposing of waste.

We build these toilets, and we often hear people say that these toilets are better than their homes.

Here is the toilet built in front of the house Here is the toilet built in front of the house

These people decided to build toilets and bathrooms in their villages without the exception of one family.

So people bring back local resources -- rubble, sand, concrete aggregates -- and other materials that need to be purchased, such as cement, steel, and drainage pipes, are often subsidized by the government.

they made toilets and bathrooms

Unskilled workers -- mostly day laborers with no land -- get the chance to be trained as masons and plumbers.

While these people were trained, others gathered materials.

When they had both, they built a toilet and a bathroom, and of course, a water tower, an elevated reservoir.

What we use is a system that consists of two manure pits.

Waste from the toilet flows into the first cesspool

When it's full, the first cesspool closes and the second cesspool opens.

So we found that if we plant banana and papaya trees around the manure pit, so we plant banana and papaya trees around the manure pit, they get nutrients and thrive.

If you come to visit us, I hope you will enjoy it.

Now the toilet and water tower are complete

This is a village where most of the inhabitants are illiterate.

We have a 24-hour supply of water, because when it's stored, it's easy to get polluted, like a child getting his hands wet or something falling on it.

So the water is never pumped water, it's just running water from the faucet.

This is how the water tower works

This is how it looks like

It's going to be high, so there's space underneath it, so a couple of rooms were built under the water tower, which is used for village gatherings.

The enormous impact of this program is clearly demonstrated.

Before we started doing this, more than 80 percent of people were suffering from water-borne diseases, as you can see everywhere.

But since then, 1,200 villages have demonstrated an average 82 percent reduction in water-borne diseases.

(Applause) Women spent six or seven hours a day fetching water, especially during the summer months.

When I go to fetch water -- because it's a woman's job to fetch water -- I take a little child with me.

So even if there were schools, less than 9% of the girls would go to school, so even if there were schools, less than 9% of the girls would go to school.

About 30% of boys go to school

Since then, school attendance has risen to 90 percent for girls and nearly 100 percent for boys.

(Applause) The most vulnerable people in the village are the landless day labourers.

Because they were trained as masons and plumbers, they were trained as masons and plumbers, and their profitability improved by 300 to 400 percent.

This is how democracy is concretely implemented, because the village has a governing board.

People ask questions when they have questions, they govern themselves. They are becoming in control of their own affairs.

This is how democracy works at the grassroots level.

Over 1,200 villages have done this

This scheme has now benefited over 400,000 people, and that number continues to grow.

I hope this continues moving forward.

For India and other developing nations, armies, armaments, software companies, space shuttles may not be as important as faucets and toilets.

thank you

(Thank you for applause

I want to talk to you about a forgotten war.

It's a war that rarely makes headlines.

It's happening right here in the Democratic Republic of the Congo.

Most people outside of Africa are not familiar with the civil war in Congo, so I'd like to share some important facts with you.

The conflict in the Congo is the deadliest civil war since World War II.

It has killed about 4 million people so far.

Over the past 18 years, it has destabilized much of Central Africa.

This civil war is the world's largest ongoing humanitarian crisis.

For this reason, I visited the Congo in 2001.

I was a young humanitarian, and there I met a woman my age.

she was called isabel

I hear the local militia attacked Isabel's village.

Many men were killed and many women were raped.

they looted everything

And Isabel was about to be taken too, but her husband intervened and said, 'No, don't take Isabel.

Take me instead,' he said.

Her husband was taken by militiamen into the woods, and Isabel never saw him again.

So I've dedicated my career to researching this little-known war for people like Isabel and her husband.

About the Congo, there's one thing you might know.

It's about ore and rape

Government statements and media reports have focused on the main cause of violence in Congo -- the illegal exploitation and trafficking of natural resources -- and its main consequence -- the sexual abuse of women and girls as weapons of war.

It goes without saying that these two problems are serious and tragic.

What I want to tell you today is a different story.

A story that clarifies the causes at the heart of this ongoing civil war.

Much of the violence in Congo stems from conflicts between the common people, and international peace efforts have been unable to resolve the conflicts.

This story begins with the fact that Congo is not only the world's worst ongoing humanitarian crisis, but it's also home to the world's largest peacebuilding effort.

The United Nations peacekeeping operation in Congo is the largest and most expensive in the world.

It was also the site of the first European-led peacekeeping operation, and the first time the International Criminal Court prosecuted a leader of an armed group.

In 2006, when Congo held its first free state elections, many thought the violence in the region had finally ended.

The success of the election was hailed internationally as an example of how international intervention finally worked in a failed state.

But the eastern region still continued to face mass displacement and horrific human rights violations.

Last summer, just before I returned to Congo, there was a terrible massacre in South Kivu.

33 people were killed

Mostly women and children, many of whom were mutilated to death.

Over the past eight years, fighting that began in the eastern region has regularly turned into wars both domestically and internationally.

So just as we're on the brink of peace, conflict erupts again.

I wonder why?

Why can't Congo achieve lasting peace and security through massive international efforts?

My answer to this question consists of two main observations.

First of all, one of the main causes of the continuing violence in Congo is that it's local in origin. And when I say "local," I mean everything from individuals and families to tribes and municipalities to communities to localities to ethnic groups.

For example, you remember the story I told you earlier about Isabel.

Militia militias attacked Isabel's village to seize the land the villagers needed to grow food and survive.

The second main observation is that peace operations of international organizations have failed to work on regional conflicts because of the predominance of a culture of peacebuilding.

So what I'm trying to say is that the Western and African diplomats, the United Nations peacekeepers, the philanthropists, the staff of many non-governmental organizations (NGOs), all those working to resolve conflicts, share a particular view of the world.

I was one of them, and I share this culture, so I know how powerful it can be.

All over the world, and in all areas of conflict, this common culture shapes the understanding of interventionists that the causes of violence are inherently located in the national and international realms.

This shapes our understanding that the path to world peace requires top-down interventions that address national and international tensions.

And it also shapes our understanding of the role of foreign actors in national and international peace processes.

More importantly, this common culture also leads peacebuilders in international organizations to ignore the micro-level tensions that often threaten macro-level stability.

For example, in the case of the interventionists in the Congo, they are so imbued with such a society and so trained that UN officials, philanthropists, diplomats and most NGO staff see the ongoing hostilities and massacres as a top-down problem.

For them, the violence they see is a product of tensions between President Kabila and his various domestic opponents, tensions between Congo, Rwanda and Uganda.

Moreover, peacebuilders in these international organizations see regional conflict as simply the result of national and international tensions, inadequate state power, and what they call the "innate violent tendencies" of the Congolese people.

The prevailing culture also structures intervention at the national and international levels as the only natural and proper function of UN staff and diplomats.

We lift the system of universal suffrage as a sort of panacea, as the most essential restructuring system in our approach to building a nation.

This is what is happening not only in Congo, but in many other conflict areas.

But let's dig deeper into other causes of violence.

In Congo, the ongoing violence is motivated not only by national and international factors, but also by long-standing bottom-up agendas, instigated by villagers, traditional chieftains, community chiefs and ethnic leaders.

Many conflicts involve political, social, and economic interests, and are very local issues.

For example, there is a lot of competition at the village and regional level over who can be the head of a village or a fief if traditional rules are followed, or who will control the distribution of land and control the mining rights of the region.

These competitions often lead to local conflicts, such as in one village or fief, and quite often it escalates into a generalized conflict that spreads throughout the region and sometimes even into neighboring countries.

Take, for example, the rivalry between the Rwandan Congolese and the so-called Kivu people.

The rivalry began in the 1930s, when it was part of Belgium, when both sides fought over land and power in the region.

Then, in 1960, after Congo's independence, the rivalry escalated as both sides forged links with national politicians and tried to seize regional interests.

Then, during the Rwandan genocide in 1994, these local actors allied with Congolese and Rwandan armed groups to still try to capture local interests in the Kivu region.

Since then, regional struggles for land and regional power have fueled violence and regularly threatened national and international stability.

So in this context, you might wonder why international peacebuilders have failed to support the implementation of peacebuilding programs in the region.

The answer is that international intermediaries see grassroots conflict resolution as trivial, unfamiliar and overreaching.

Engaging in conflict at the local level itself is fundamentally contrary to existing cultural norms and threatens important organizational interests.

For example, a shift in focus to regional conflicts would undermine the very identity of the United Nations as a diplomatic agency at the macro level.

As a result, both internal resistance and external shock to this prevailing approach have failed to persuade international actors to reconsider their understanding of violence and intervention.

So far there are very few exceptions

There are exceptions to this main pattern, but they are very rare.

In conclusion, the story I just told you is that the prevailing peacebuilding culture is shaping the interventionist's understanding of what causes violence, how to lead to peace, what interventions should be done.

With this understanding, peacebuilders in international organizations are ignoring the very necessary micro-level foundations for lasting peace.

Failure to focus on regional conflicts can lead to poor peace-building in the short term and a return to war in the long term.

The great thing is that this analysis will help us better understand the many cases of long-term conflict in Africa and elsewhere, and the failure of international interventions.

Regional conflicts fuel wartime and post-war violence from Afghanistan to Sudan to Timor-Leste. There are integrated, bottom-up peacebuilding strategies.

The best example would be the relatively peaceful Somaliland, which benefited from a grassroots peacebuilding strategy, versus the rest of Somalia, where violence is still prevalent because peacebuilding was mostly top-down.

There are a few other cases where local grassroots conflict resolution has made a big difference.

If peacebuilding in international organizations is to work, in addition to top-down intervention, conflict resolution must be done bottom-up.

Again, national and international tensions are not irrelevant.

there is a lot

It's not like we don't need national and international peacebuilding.

Is required

Instead, peacebuilding at both the macro and micro levels is necessary for sustainable peace, and local NGOs, regional governments and civil society representatives should be central players in this bottom-up process.

Of course there are obstacles

Local actors are often underfunded and sometimes lack the resources and the practical capacity to implement effective regional peacebuilding programs.

So international actors should step up their funding and assistance to resolve regional conflicts.

What can Congo do?

After 20 years of conflict and millions of deaths, it's clear that we need to change our approach.

My field research suggests that international organizations and Congolese actors should pay more attention to resolving land conflicts and foster reconciliation between communities.

For example, in the Kivu region, the Life and Peace Institute and its Congolese collaborators have created intercommunal forums to discuss the details of local conflicts over land, and find solutions to reduce the violence.

Programs like this are sorely needed throughout eastern Congo.

With programs like this, we can help people like Isabel and her husband.

It's not a magic wand, but it's taking into account the deeply rooted causes of violence, and it could make a big difference.

thank you

(applause)

Hello

Today I'm going to tell you a personal story about female genital mutilation (FGM).

Don't cry, laugh, cross your legs, please feel free to do whatever you like

I don't want to name what your body does

i was born in sierra leone

Has anyone seen "Blood Diamond"?

Whatever you think - I don't wear diamonds, just in case

If you've heard of Ebola, that's also Sierra Leone's problem.

I don't have Ebola, so you're safe.

No rush to leave

Please sit down. It's okay.

My grandfather had three wives

I don't understand why you need more than one wife.

Men, is one wife not enough?

i don't think so see

I think my grandfather wanted to have a heart attack.

yeah i'm sure

When I was three years old, in 1991, the war started in Sierra Leone.

I remember going to bed one night without incident.

The next day, I woke up to bombs being dropped all over the place and people trying to kill me and my family.

We fled the war and went to Gambia in West Africa.

There's Ebola there too, so be careful.

While we were there as refugees, we didn't know what to expect.

mother applied for asylum

My mother is smart and wonderful, and we were lucky.

Australia accepted

thanks to the australian

Before I left, my mother came home one day and said, "I'm going on a little vacation."

He picked us up and drove for hours to a bush in rural Gambia.

There were two huts in the bush

An old woman came over here

She was very old in her national dress.

When I talked to my mother, she went back inside.

Then I came back and went into the other hut

I stood there and thought, "I don't understand. What the hell is going on?"

The next thing I remember was my mother taking me to that hut.

My mother took my clothes off and held me to the floor.

I tried to shake my mother off, but I couldn't.

And then an old woman comes up with a rusty knife -- a sharp knife that looks like it's never touched orange water or light.

I thought he would kill me, but he didn't.

She slowly moved down my body and stopped near my vagina.

When she pinched what she now knew was the clitoris, she cut it off bit by bit with a rusty knife.

I cried and begged my mother to get away from the pain, but she just said, "Be quiet."

It took an eternity to cut off my flesh, and then this old woman threw the piece of flesh on the floor, like it was the most hideous thing on earth.

When the woman and my mother let go of me, I bled to myself and cried, confused by what had just happened.

This was never brought up in conversation

Soon we were going to Australia, the year of the Sydney Olympics, and people said we were going to the end of the world, and after Australia there was nowhere else to go.

this calmed me down

It took me three days to come here

Went to Senegal, then France, then Singapore.

go to the bathroom to wash your hands

I kept turning on the faucet for 15 minutes to get the water out.

Somebody came in and put his hand over it and water came out Is that all there is to it? I thought

It's true

We went to a little town called Adelaide, and there we were literally thrown out.

I was thrown out there

I was very grateful

I settled in there and I liked the city

I thought, "This is our home, this is where we belong."

Then there was someone who took me to Rundle Mall.

Adelaide only has one mall.

it's a small place

there were a lot of asian people

My mother panicked and suddenly said, "You brought me to the wrong place. Please take me back to Australia."

I had to explain to my mother that there were a lot of Asians in Australia, and we were in the right place.

everything was fine

And then my mom had the brilliant idea of ​​putting me in a less racist girls' school.

I don't know where I read that, but (Laughter) I still don't know.

Out of 600 white students, I was the only black student.

no i was the only person of color

Can you say chocolate color?

There were no Asians or native students

A little tanned - there were girls who felt like they had to be in the sun

But it's not my chocolate color

Adopting Australia was a challenge, but it became even more difficult when I started volunteering for an organization called Women's Health Statewide.

I've spent months explaining to nurses and doctors what female genital mutilation is and where it's done - in Africa, the Middle East, Asia, and now Australia, London, and America - because we live in multicultural societies, and people from those backgrounds bring their culture with them, and they continue to practice cultural practices that we don't necessarily agree with.

One day, I was looking at a chart about the different types of female genital mutilation, which I'll call FGM for short.

Type 1 cuts the tip

Type 2 removes the entire clitoris and part of the outer lip, and Type 3 removes the entire clitoris and sews it up, leaving only a small hole for urination and menstruation.

my eyes turned to type 2

Before this I was kind of amnesiac

I was so shocked and hurt by what happened that I didn't remember anything.

I knew something bad had happened, but I didn't remember anything about what happened.

I knew I had a scar in my lower abdomen, but I thought everyone had a scar.

I thought it happened to everyone

But when I saw Type 2, I remembered everything.

remember what happened

I remember being held down by an old woman and my mother in that little hut.

Words can't describe the pain and the confusion I felt Words can't describe the pain and the confusion I felt, because I knew what had happened to me was so horrifying and barbaric in our society that it's called "ablation."

My mother said "circumcision," but here it's "cutting."

"Am I an amputated human?" I thought.

oh my god

Then came the anger

I became an angry black woman. (Laughter) Yes.

Small but still angry

I went home and said to my mother, "What have you done?"

It's not African to point at your mother, but I didn't mind it.

"What have you done to me?"

My mother was like, "What are you talking about, Khadijah?"

my mother is used to me talking back

I said, 'Years ago you would have circumcised me

You cut mine," he said.

Mother said, "Yeah yeah

i did it for you

it's the best thing for you

your grandma told me i did it for you

I've become a first-class woman."

"What do you mean?" I said.

My mother said, 'Khadijah, you're on your own.

Do you ever get itchy over there? " said

I said, "No, why are you itching?"

My mother said, "If you weren't circumcised, you'd be itchy.

Uncircumcised women often itch

Then you can sleep with anyone

You should be able to sleep with anyone."

What I thought was that my mother's definition of "independence" was really weird. (Laughter) That was the end of our first conversation.

i went back to school

At that time there were magazines like Dolly and Girlfriend.

There was always a double binding Does anyone remember the double binding?

There is something wrong written

Yes, I loved it. (Laughter) Anyway, there was always an article about sexual pleasure, love and, of course, sex.

It's written with the assumption that I have a clitoris, so it doesn't apply to me.

I'm not writing about girls like me.

i have no clit

When I see a woman panting while watching TV,

I thought these guys and clitoris were shit

(Laughter) How can a woman without a clitoris survive?

i wanted to know that

I want to try it too

it didn't happen

So when I got home, I said to my mother again, "Both Dolly and Girlfriend tell me that I have a right to sexual pleasure, that I should have an orgasm, and that white men should know how to find their clitoris."

Apparently white men can't find their clitoris.

(Laughter) "Dolly" said it, not me.

I thought of a joke in my mind, "I'm going to marry a white man.

(Laughter) I said to my mother, "Dolly and Girlfriend say it's okay for me to be happy, but do you know what you took away from me?

You violated my most sacred part

I want to feel joy too

I want to get excited too."

And my mom said, 'Who's Dolly or his girlfriend?

Khadijah, are you a new friend? " said

I said, "No, it's a magazine. Mom, it's a magazine."

my mother didn't understand

We grew up in two completely different worlds.

When my mother was growing up, it was normal to not have a clitoris.

it should have been praised

I was an Afro-Australian girl

We lived in a very clitoris-centric society.

All the damn clitoris stuff!

I don't even have one!

i got mad

After a strange period of anger, pain and confusion, I made an appointment with a therapist.

I'm African and I have a therapist.

I told her, "I was 13, I was still a kid.

I was adjusting to a new country, trying to face racism, and English was my third language."

"I feel like I'm not a woman because of what I've been through

i think it's incomplete

Do I have no sexual desire? ”

From what I know about FGM, the goal is to control women's sexuality.

It keeps women from having sexual desires.

I asked, "Do I have no libido?

Do you live the rest of your life without wanting to have sex or enjoying it? ”

She couldn't answer and the question was left alone.

When I was 14, when my period started, it wasn't a normal period because of FGM.

My periods were very heavy, long and extremely painful.

I was told I had uterine fibroids

You can do something like a little ball.

I was told one was covering my ovaries.

I got some big news there.

"Khadija, you may not be able to have children."

I'm an angry black woman again

I went home and said to my mother, "Because of what you've done, for whatever reason," because she did it out of love, "What you did out of love is hurting me and hurting me.

What are you going to say? ”

My mother said, "I just did what a mother should do."

I'm still waiting for my mother's words of apology.

then i got married

And again, FGM will follow you forever

you will soon understand

sex was so painful

painful all the time

Of course, I was told that I could not have children.

I thought, "Is this the value of my existence? Is this all I have in my life?"

I am proud to tell you that five months ago I was told I was pregnant.

(Applause) I'm lucky.

There are so many infertile women who have experienced FGM.

I know a 9-year-old girl who has incontinence, infections and pain.

It's the gift of FGM. It'll follow you forever.

It affects every aspect of my life, and this happened to me because I was born as a girl in the wrong place.

That's why I saw you like this

I channel all my anger and pain into advocacy because I can't help but turn this pain into something worthwhile.

I lead an organization called No FGM Australia.

it's not a mistake

Why No FGM Australia?

FGM is also in Australia

Two days ago, I called child protection because somewhere in Australia, there was a four-year-old child -- a four-year-old -- whose mother was going to perform FGM.

I'm still in kindergarten. Listen carefully. I'm only four.

A few months ago, I met a woman who was married to a Malaysian man.

Her husband said one day he would take his daughters back to Malaysia and cut off his clitoris.

When she asked "why?", her husband said her clitoris was dirty.

When she says "You married me"

He said, "But this is my cultural idea."

They had a good discussion, and she told her husband, "If you're going to take my daughters, kill me first."

What would have happened if this woman hadn't known about FGM, hadn't had this conversation?

Her children would have been taken to Malaysia and would have returned in a state of disfigurement from which they would never recover.

Did you know that it costs millions of dollars to tackle these problems?

In Australia [three children a day] are at risk of FGM.

Ladies and gentlemen, this is an Australian problem.

It's not an African problem, it's not a Middle East problem.

No whites, no blacks, no people of color, this is everyone's problem.

FGM is child abuse

violence against women

FGM says women have no right to sexual pleasure.

It's the same as being told that you have no right to your own body.

I want to say "no" to it, damn it

I would like to say that

(Applause) I'm proud to be playing a role in ending FGM.

what will you do?

There may be a child in your class who is at risk of FGM.

A child at risk for FGM may come to your hospital

The reality is that even in Australia, the most beautiful place in the world, and our beloved country, children are being abused because of their culture.

Culture should never be an excuse for child abuse.

I want each of you to feel that FGM is your problem.

consider it relevant to you

What if it's your daughter, sister or cousin?

I can't fight FGM alone

I will try, but it will be impossible

My request is please follow me

Please sign the petition at Change.org Put Khadijah and my name and it will pop up Please sign

The purpose is to support FGM survivors in Australia, to protect the girls growing up here, and to ensure that they are not harmed, because every child has the right to be happy.

Every child has the right to have a clitoris without harming his own body.

Please help me to end this act

One of my favorite quotes is, "For evil to prosper, all it takes is a few good people sitting around."

Are you going to let the evil of female genital mutilation flourish in Australia?

It shouldn't be so so join me in ending this in my generation.

thank you

(applause)

Have you ever had to break a family rule?

I'm going to break my family's rules today, rules about money, secrets and shame.

In 2006, I got a call from my brother Keith on his 40th birthday.

"Tam I'm in a lot of trouble

I really don't want to ask you to do this

Can you lend me $7,500? ”

It wasn't the first time my brother had asked for cash, but this time I was terrified when I heard his voice.

It's the first time I've heard you sound so exhausted and ashamed, even though it's your 40th birthday.

I asked a few basic questions that anyone would ask, and promised to lend me money, but with one condition: As a financial expert, I asked him to meet my brother and his wife and tell me what the real situation was.

A few weeks later, we met at our local Starbucks, and we immediately broke down and started talking about finances.

"You should sell your current house and make it a house that matches your income. Sell what you bought for your hobby.

Starbucks?

Stop spending $5 a day on coffee."

Throw away anything that's just to impress your neighbors

It quickly got out of hand in a terrible game of blame between my brother and his wife.

I went back and forth between my therapist and my angry sister.

I wanted them to look better.

"Hey, stay strong, both of you.

I have children

Grow up and do your best.”

After we parted ways, I called my mother, and she told me that my brother called first and that I didn't help her.

On the contrary, my brother was hurt and felt like he had been beaten.

Of course, because I humiliated you by talking about your finances in a harsh tone.

Two months later I got a call

"Tam? Sad news

Keith committed suicide last night."

A few days later, I went to my brother's house and looked at the "office," or the garage, to find the answer.

There was a stack of delinquent credit card bills and a foreclosure notice that had arrived the day he died.

My brother had a lovely 10-year-old daughter, a brilliant 18-year-old son who was just weeks out of high school, and a wife of 20 years.

How did this happen?

My brother got caught in a vicious cycle of family money shame, and it's not just my brother's problem.

The suicide rate among people aged 40 to 64 has increased by nearly 40% since 1999.

Unemployment, bankruptcy, and foreclosure are associated with nearly 40 percent of white middle-aged men, and seven out of 10 suicide deaths are white middle-aged men.

What we've learned so far is that the self-destroying use of money doesn't come from rational, logical thinking.

That way we spend money is the product of an unconsciously ingrained belief system that begins in childhood, and is so ingrained in us that it continues to shape how we spend our money well into adulthood.

I call it "money shame"

Well-known shame researcher Brené Brown, Ph.D., defines shame as "feeling or experiencing intense pain because of your own shortcomings, believing that you are unworthy of love and belonging."

According to this definition, "financial shame" is "feeling or experiencing intense pain due to the belief that one's flaws make one unworthy of love and belonging, caused by bank balances, debt, homes, cars, or positions."

Let me give you some examples

I think everyone has some shame about money. It doesn't matter if you're making $10,000 or $10 million a year. And that's because we give money all the power.

If you or someone you care about has embarrassment about money, you might behave like this.

He pretends to be a big shot and always pays everyone's bills and gives financial support to family and friends.

Even though my income is stable, I always feel that something is missing.

Actually, I can barely buy a Honda car, but I drive a Benz.

I'm trying to get in shape no matter how much it costs

But you can escape the shame associated with money, and I'm a witness.

Shortly after my brother died, the global financial crisis happened.

I lost my job and was on the verge of bankruptcy.

I was secretly scared

I stayed home for a year and asked myself where I went wrong, "What the hell did I do? What happened?"

All the while, I didn't say a word and just smiled outside.

without anyone knowing

This is shame about money

So first, I had to let go of the feeling that I knew all the answers.

I knew my family well, but I needed to stop thinking that a new financial plan was the solution.

And then, as always in my life, someone showed up to help me, and I accepted, but I had to do a lot of digging into my family history and my thoughts on money.

We all have to start talking like that.

Talking about money is no longer a taboo

We need to be honest and admit that we're having financial troubles and face the reality.

You can't be indifferent to revealing your ugly side about what happened and what happened to you and your money.

To be free, you must be free from the past.

Freedom from the past requires surrender, trust and forgiveness.

Debt is a tangible form of unforgiveness.

If you're in debt, it means you haven't fully forgiven yourself for your past, so in order to live free, you have to work to forgive yourself and others.

otherwise we will repeat the same

But it's not going to be easy.

This is another dimension of work

In order to do something about it, we need to look at the situation from the perspective of the situation.

So what I want you to try is to follow the money

Money tells you straight what you value

what are you spending your money on?

And think about it, are they all worth it to me?

Be concerned with how you feel when you spend your money

Is it loneliness?

boring?

just excitement?

need to think more deeply

How did you come up with the idea of ​​money in the first place?

I call it my "money autobiography," and it's the first step I take with my clients as a money coach.

Remember your earliest childhood memories of money?

How did you feel when you got the money?

Excited? Proud? Confused?

what did you do with that money?

Want to buy some sweets right away? Or go to the bank?

What did your parents talk about and how did they deal with money?

My brother and I used to hear from our parents, "More money makes you happier."

it's every day

"If I had more money, I would be happier"

That's how we learned to think about money that our worth is our net worth, because I watched my mother live a life of constant feeling of inadequacy.

My mother relieved her pain with sweets and shopping.

What about us?

Keith traced his mother's life

My brother was low-income, seeking financial help and drowning his pain in alcohol.

i was the exact opposite

He was a high-paying savior and relieved his pain with self-help books.

But what we had in common was the way we thought about money.

They both believed that their bank balance and their worth were equated.

Thinking back to the time my brother and I were talking at Starbucks...

My brother didn't need a financial plan, no blame.

All it needed was a breakthrough from the pain and some compassion on my part.

Keith couldn't speak up to break the cycle of financial shame that our family had fallen into, so he left it to me and took over what he had left unfinished.

Change is hard, but in my family, if we don't change, we're doomed.

So I broke the vicious cycle. I've been through a lot of forgiveness. I'm here today and I'm living with purpose. I'm doing my part and money gives me what I need.

It takes the power of just one member of the family to break the vicious cycle of financial shame.

Please be one of them

thank you

(applause)

It's been said lately that social media has empowered protests, and that's true. But what I've realized over the last decade, through studying and participating in multiple social movements, is that technology can empower social movements and, paradoxically, also rob them of their power.

That doesn't always happen, but we need to look for what works in the long term.

And that's true in many fields.

Now, I want to tell you about my trip back to Turkey to do some field research on the Turkish insurgency in Gezi Park in July 2013.

Twitter was the key to developing the anti-government movement

The park was full of people tweeting as well as tear gas.

far from high tech

But Turkish people knew the power of Twitter after an unfortunate incident a year ago, when a military plane was blown up and 34 Kurdish traffickers were killed near the border, and Turkish media completely censored the news.

The editor sat in the newsroom, waiting for instructions from the government.

One journalist said his frustration had reached the limit of his patience.

I bought myself a boarding pass and went to the village where this incident happened.

And then he saw this scene: coffins descending a hill, relatives crying.

Later he told me that he was so confused that he didn't know what to do, so he took out his phone and, like anyone else, took a picture of it and tweeted it.

The photo went viral, breaking censorship and prompting the mass media to report it.

A year later, the Turkish rebel movement arose, which began as protests against the demolition of the park, but evolved into an anti-authoritarian movement.

I wouldn't be surprised if the media censored it, but it was a little silly.

As the protests escalated, CNN International broadcast live from Istanbul, while CNN Turkey aired a penguin documentary.

I like penguin documentaries, but they don't have to air on that day, do they?

One angry viewer took a picture of the two screens side by side, and the picture went viral. Turkish media has been called penguin media ever since. (Laughter) But this time, I knew what to do.

People pulled out their phones and searched for truthful news.

And I knew that I would go to the park, take pictures, join the anti-government movement, and share more on social media.

Digital communication was used for everything from food to donations.

Everything was organized and part of it was helped by new technology.

Using the Internet to inform and encourage participation in protests has actually been around for many years.

Remember the Zapatista National Liberation Army? A peasant uprising in the southern state of Chiapas, Mexico, led by a masked, pipe-mouthed, charismatic second-in-command, Marcos.

It was probably the first movement on the Internet that the world took note of.

Consider the protests in Seattle in 1999, when a multilateral grassroots movement drew the world's attention to the opaque nature of the World Trade Organization.

More recently, movements have sprung up one after the other, spreading from country to country, from Bahrain to Tunisia to Egypt, and the growing Arab riots in Spain, Italy, and Greece, the protests in Gezi Park, Taiwan, the Euromaidan in Ukraine, and Hong Kong.

More recently, there's also the hashtag #BringBackOurGirls

Today, you can also create global awareness with a tweet.

Facebook inspires more people to join protests

Surprise, isn't it?

But consider the example I gave

The achievements and achievements are not necessarily proportional to the size of the mobilization or the energy put into it.

There's a clear mismatch between the naturally raised expectations and the final results.

So the question arises: when digital technology has made exercise easier, why isn't it doing what we want it to do?

By using digital platforms for social activism and politics, are we missing out on the benefits of the heavy lifting?

I think so

I think the rule of thumb is that the easier way to recruit people doesn't necessarily mean the easier way to get results.

To put it bluntly, technology empowers us in many ways.

it's very powerful

In Turkey, we witnessed four university students launch 140Journos, a national citizen journalism organization that has become a center of censorship-free news in the country.

In Egypt, I witnessed four other young people using digital communications to organize supplies and logistics for 10 field hospitals, a very ambitious operation, during the massive clashes near Tahrir Square.

So I asked the founder of Tahrir Supply how long it took him to come up with the idea and get started.

"Five minutes," he replied, five minutes.

Nor was he familiar with logistics.

Think about "Occupy Wall Street," which rocked the world in 2011.

It all started with one email sent to 90,000 subscribers from Adbusters magazine.

Two months after the first email, there were 600 people occupying and protesting in America.

Less than a month after the initial occupation of Zuccotti Park, there were global protests in 950 cities in 82 countries.

It's one of the largest global protests ever.

Now compare that to the civil rights movement in Alabama in 1955, when they boycotted bus segregation rules.

A plan long in the making was put into action as soon as Rosa Parks was arrested.

But how did they manage to get the word out, "I'm going to boycott tomorrow," when there's no Facebook, no texting, no Twitter?

They sneaked into the university's copy room and they secretly printed 52,000 pamphlets overnight. They secretly printed 52,000 pamphlets overnight.

We used 68 African-American organizations to hand-deliver pamphlets throughout the city.

We were poor people, so we had a lot of trouble arranging transportation.

Can you boycott when you have a job? Carpooling was also organized through conferences Carpooling was also organized through conferences

No texting, no Twitter, no Facebook.

We had to meet almost every time to continue carpooling.

it would be easier now

You could create a database, make the carpools and other necessary arrangements, and send text messages based on the information in the database.

No face-to-face all the time

But think again, the civil rights movement in the United States navigated a minefield of perils of political repression, overcame it in the face, and extracted significant political concessions. It acted innovatively while avoiding risks.

By contrast, three years after the Occupy on Wall Street sparked a global dialogue on inequality, the underlying politics haven't changed.

Europe was rocked by protests against austerity, but nothing changed.

Are we missing out on the benefits of a slow, sustained approach when using these techniques?

To understand this, I returned to Turkey about a year after the Gezi rebel movement and interviewed the movement's activists and politicians, activists and activists from both the ruling and opposition parties.

Turkish rebel activists were disappointed.

They were frustrated because they weren't getting the results they were hoping for.

Many activists around the world that I've come into contact with say the same thing.

And the problem I have is that today's protests are like climbing Mount Everest with the help of 60 Sherpas, and the Internet is the Sherpa.

If you take the fast route, which is what we're doing, you lose the advantage of the slower route.

Because, as you can see, the hard and cumbersome task of actually moving things is not only about dealing with it, but it's also creating a system of people thinking together, making tough decisions together, building consensus, reinventing things, and perhaps most importantly, everyone can overcome their differences and move on.

If you look at this picture of the 1963 March on Washington -- this is where the march took place, where Martin Luther King delivered his famous "I Have a Dream" speech in 1963, you'll not only see the march, you'll not only hear the powerful speech, but you'll also notice the painstaking and time-consuming work that went into making the march.

If you're in power, you have to understand the power of the message that a march can convey.

By contrast, if you look back at the Occupy of Wall Street, marches were organized around the world in two weeks, and there were all sorts of complaints, but they weren't strong enough to sustain long-term resistance.

The point is that the civil rights movement has devised slick actions, from boycotts to sit-ins at lunch counters to pickets to marches to freedom rides.

Without building an organizational foundation and facing challenges, today's movements grow exponentially.

They don't really think about what's going on in the beginning of what's going to become a very big movement, and they don't know what to do next, so they don't manage well because they don't have enough capacity to navigate the scale of the movement.

To put it bluntly, magic power isn't in pamphlets.

The power of working together, that is, in thinking together, is the power that comes from doing a lot of work over time.

To understand this, I interviewed a high-ranking government official in Turkey's ruling party and asked, "How do you operate?"

They also use digital technology extensively, but that's not the point.

so what's the secret

he answered

"The secret is to not put sugar in your tea."

"Anything to do with it?" I asked

"The ruling party starts preparing for the next election the day after the election," he said. He goes to voters' homes, to wedding receptions, to circumcision ceremonies.

I meet so many people every day, and each time I'm served tea, it's rude and I can't say no. That's why I can't even put a sugar cube in my tea.

We met in the afternoon, and he'd already had too much caffeine.

The ruling party won two major elections by a wide margin in the year of the Gezi insurgency.

Certainly the government has a variety of different sources of information to negotiate with.

The stories may be different, but differences are beneficial.

As these stories show, it's not just about having the technology.

All technology can do is converge what everyone wants.

Today's social movements are unorganized.

They don't want organizational leaders

They want to stay away from politics for fear of corruption and sectarian absorption.

There's a reason for that

In many countries, modern parliamentary democracy is thwarted by great interests.

But this way of doing things is hard to sustain and influence the system, and disgruntled protesters drop out, further corrupting politics.

Without effective policies, politics and democracy are in turmoil, because the causes that motivate modern movements matter.

Climate change is coming

Inequality stifles human development, potential, and economic growth.

dictatorships plague people in many countries

I need to exercise more effectively.

Now, some people say that today's movement doesn't have as many risk takers as it once did, but that's not true.

From Gezi to Taksim, I've seen people whose lives and livelihoods are at risk.

Nor is Malcolm Gladwell correct when he says that today's protesters are connected by weak, virtual ties.

They're just like before, with their existing connections, their friends, they're going to the protests, and sometimes they're making lifelong friends there.

I myself still keep in touch with friends I met during the global protests in Zapatista 10 years ago. Bonds with strangers are not worthless.

When I was tear gassed in Gezi, strangers didn't run and helped me and others.

In Tahrir, I saw people and protesters working hard to keep each other safe.

Digital awareness is great because when you change your mindset, you change politics.

But today's movement has to move quickly from the stage of participation, to find ways to think collectively, to develop strong policy advocacy, to build consensus, to engage with governments, and to wield influence, because goodwill, courage, and self-sacrifice are not enough.

and there are many attempts

In New Zealand, a group of young people is developing a platform called Roomio for participatory decision-making at scale.

In Turkey, 140Journos organizes "hackathons" (competitions of programmers) to support community and citizen journalism.

In Argentina, DemocracyOS is an open source platform that encourages participation in parliaments and political parties.

They're all great, we need more, but online decisions aren't always better, because advancing democracy requires innovation at all levels, from organizations to politics to society.

To achieve long-term success, sometimes you need a cup of tea without sugar, along with Twitter.

thank you

(applause)

A couple of months ago, when I decided to do this talk, I had a lot of titles with the organizers, and a lot of different ideas were considered and discussed.

But no one suggested the subject of Ebola, because two months ago, Ebola had spread so exponentially that it had spread to areas that had never been seen before, and it had terrified the world and sparked a surge of awareness and anxiety about the disease that we haven't seen in a long time.

But today, I think I'm here to talk about beating Ebola, and it's probably because many of you have never heard of it, thanks to people like Peter Clement, a doctor who works in Lofa County, Liberia.

This is why Lofa County is so important. About five months ago, when this epidemic was just beginning to spread, Lofa County was right in the middle of the epidemic.

At that time, the doctors at Médecins Sans Frontières (MSF) and the treatment centers there were seeing large numbers of patients day in and day out. Patients and communities became more and more fearful over time about the disease and how it was affecting their families, their communities, their children and relatives.

So Peter Clement drove the long, rugged road from Monrovia, the capital, to Lofa County for 12 hours, hoping to help contain the epidemic in this place.

When Peter arrived on the scene, he found the kind of fear I was talking about earlier.

So he sat down with the local chiefs and listened to their stories.

So what he heard was heartbreaking

He heard the devastation and despair of those infected with this disease.

I heard a heartbreaking story, not just of the pain that Ebola inflicted on people, but on their families and communities.

When I listened to the local chiefs, they said, "The children are sick and dying, and I want to be near them, but I can't hold them.

When my relatives die, I can't mourn them according to custom.

We are not allowed to clean and bury the bodies according to the customs of our community.”

And because of that, they became so confused and anxious that a continuous epidemic spread before their very eyes.

People were venting their feelings on the health workers who came in. The heroes who came in to save and help their communities couldn't reach them.

Then Peter explained to the leaders

The leaders listened and they all turned the tables

What is ebola and what kind of disease is it

I explained what it brought to the community.

He explained that Ebola threatens everything that makes us human.

Ebola is when you can't hold a child like you used to.

Not being able to bury the body as we've been doing

We have to trust the people in the hazmat suits and entrust them with that role.

And then, ladies and gentlemen, then something very amazing happened: the community, the health workers, and Peter came together to come up with a new joint plan to eliminate Ebola in Lofa County.

And here's where it gets really important, folks, because this very county that's at the epicenter of the Ebola epidemic today -- Lofa County, which you've seen in the newspapers and on your television screens -- hasn't had a single new case of Ebola for eight weeks today.

(Applause) Of course, this doesn't mean the mission is over.

There is still a big risk of new cases here.

But now we know that we can definitely beat Ebola.

here is the key

Even at this scale, we now know that Ebola can be defeated, even with the rapid spread that we've seen in this environment.

If communities work together with health workers and fight together, they have the potential to contain this disease.

How did the Ebola outbreak start in Lofa County?

So we have to go back 12 months to the beginning of this epidemic.

As many of you know, this virus went undetected, and for three or four months after it broke out, virus detection went unnoticed.

Because it's not a West African disease, it's a Central African disease far, far away.

This disease was unknown before, which meant that medical professionals had never seen it before.

I didn't know what it was, it was out of my control, and to make matters worse, the virus itself was causing a different kind of symptoms than the specific symptoms of this disease.

That's why even people who knew about Ebola didn't recognize the disease.

So, for a while, the disease was under-reported, but recently, contrary to popular belief, once the virus was detected there was a rapid wave of support.

MSF immediately set up an Ebola treatment center in the area, as many of you know.

The WHO and partners eventually mobilized hundreds of people to help track the virus over the next two months.

Ladies and gentlemen, by that time, the problem was that this virus, now better known as Ebola, had spread excessively.

Ebola's momentum has outstripped the most ambitious control efforts to date and caused an outbreak.

By the middle of the year, the infection had spread not only to Guinea, but also to Sierra Leone and Liberia.

As the virus spread geographically, the number of infections increased, and at this point, not only were hundreds of people infected and on the brink of death, but importantly frontline relief workers and those who came to help, medical workers and other aid workers were infected and dying by the dozens.

The presidents of these countries have recognized the emergency.

Around that time, they met and agreed to work on common activities and set up an Ebola hemorrhagic treatment center in Conakry to implement the strategies I just talked about to help end this disease.

But what happened then was something I had never experienced before.

Someone with a virus, someone with a virus, flew to another country, and for the first time, an Ebola case was found in another, far away country, and the virus kept popping up again.

At that time, it was Lagos, a large city of 21 million people in Nigeria.

The virus was in such an environment

As expected, an international state of emergency was declared, and an international catastrophe of a scale not seen in recent years was thus caused by the disease.

The WHO immediately convened an expert panel to review the situation and declare a global emergency.

In the meantime, I had hoped that there would be a huge movement of international aid to help countries of growing concern.

What we saw there was quite different.

It was a big reaction.

As you know, people from many countries -- many NGOs and organizations -- came to help, but at the same time, the opposite happened in many places.

The warnings escalated, and soon these countries realized that instead of getting the support they needed, they were growing more isolated.

Civil aviation entered these countries, and people who had not been exposed to the virus were no longer allowed to travel abroad.

This obviously poses a problem not only for the country itself, but also for the response.

These organizations that wanted to get people to help them respond to the outbreak couldn't get them on the plane, they couldn't get the people to help them.

This situation has been very favorable for viruses like Ebola, folks.

And then something happened that never happened before

Not only did this virus continue to live in places that were already infected, but then it started to spread, and we're seeing cases here on a scale that we've never seen before. The number of Ebola cases skyrocketed, not just in these countries, and in areas that were already infected, but from there, it spread to every corner of those countries.

Ladies and gentlemen, this was one of the most critical public health international emergencies we've ever seen.

What happened in these countries at that time was what many people saw on TV and read in the newspapers, and we saw the health system begin to collapse under the magnificence of this epidemic.

Schools began to close, markets were no longer open, and the functioning of these countries collapsed.

Rather than issuing warnings about the situation, quickly misinformation and perceptions began to circulate in the community.

Fearing the helpers in hazmat suits as people in space suits, they started backing off.

Then the situation deteriorated more seriously

countries had to declare a state of emergency

Quarantine had to be enforced in populated areas, and riots broke out.

this was a very, very scary situation

Many people around the world began to ask, "Can we stop Ebola from spreading like this?"

"How much do you really know about this virus?"

In fact, we don't know very much about Ebola.

This is a relatively new disease, as far as we know.

It was first identified in Central Africa in 1976, and we've only known about this disease for 40 years.

But in spite of this, there are certainly many things we do know: this virus probably survived among bat species.

And we know that it probably made its way into the human population because we came into contact with wild animals that were infected with the virus, and perhaps that's how we got infected and developed the disease.

We know that the virus was then passed from person to person through infected bodily fluids.

And, as you can see, this terrible disease causes high fever, severe diarrhea and vomiting, and unfortunately 70 percent or more of these cases are fatal.

This is a very dangerous, debilitating and ultimately fatal disease.

But despite the fact that this disease hasn't been known for a particularly long time, we don't know everything about it, but we certainly know how to stop it.

There are four things that are crucial to stopping Ebola.

First of all, people have to understand this disease, how it spreads and how to stop it.

And we have to find every single case, establish a system that can trace people who have been in contact, and start tracing the chain of transmission so that we can stop it.

As we set up treatment centers specifically to treat Ebola and provide support to those infected, we need to protect the people who work there, so they don't get infected.

And for those who have died, we must ensure a safe and at the same time dignified burial process so that the infection does not spread again at that time.

We know how to stop Ebola, and these strategies work, folks.

Nigeria was able to bring the virus under control with these four strategies and the people who implemented them.

The spread of the virus stopped in Senegal, where the virus spread and this outbreak spread to other countries.

There's no question that these strategies actually work.

Ladies and gentlemen, the big question is whether this strategy can work in a situation where, as you've seen, the number of cases in many countries is skyrocketing.

That was the big problem I was facing just a few months ago.

We know the answer to that question today

We have the answer because of the incredible work of amazing NGOs, governments, local leaders, UN agencies, humanitarian aid and many other organizations in the fight to stop Ebola in West Africa.

But what happened there was a little different.

Those countries took these strategies that I just described: community collaboration, case detection, carrier tracking, etc. They looked the other way around.

The disease was so prevalent that they took a different approach.

To prevent the disease from spreading among infected people, we decided to quickly prepare as many beds as possible in special treatment centers in an attempt to slow the spread of the disease.

They quickly set up large numbers of burial teams so that the bodies could be safely handled, thereby trying to bring this outbreak under control, to see if the old-fashioned approach of finding cases and managing the tracking of carriers was actually effective.

When I went to West Africa about three months ago, I saw something out of the ordinary.

I saw presidents taking advantage of the surge in international support to try to stop the disease and opening emergency care centers to fight Ebola that they could organize and oversee and promote.

What we've seen is that armed forces from all over help set up Ebola treatment centers to isolate sick people.

The Red Cross, working with our partners in the field, to educate communities to bury bodies with dignity.

United Nations agencies like the United Nations World Food Program are building huge bridges of support to be able to quickly send people to every corner of these countries to implement the strategies I just talked about.

Ladies and gentlemen, what was probably the most impressive thing that we saw was the incredible work that the governments and leaders of these countries did to make sure that people understood this disease and that extraordinary efforts were needed to stop Ebola.

And as a result, folks, you've seen that you can do things that you didn't even know you could do just a few months ago.

What we saw was this graph, compiled on December 1st.

What we found was that this curve could be pushed downward, so to speak, that we could change the curve of this spike, and restore hope that this outbreak could be brought under control.

Ladies and gentlemen, this is how we can now catch up to this outbreak in West Africa and beat Ebola.

But the big question is, when you look at this big curve, you're asking, "Wait a minute, it's nice to be able to reduce the number, but can we actually get it down to zero?"

I started this talk by telling you that in Lofa County, Liberia, there have been no new cases of Ebola in eight weeks.

I gave you the answer to this question I gave you the answer to this question

Similar stories can be found in other countries

From Guéckédoux, Guinea, where the first case was actually reported

We've had very few cases in the last few months, and we've had another epicenter here in Kenema, Sierra Leone, where the virus hasn't been detected for more than a few weeks. Obviously, it's too early to declare victory, but folks, the evidence suggests that not only can aid catch up with the disease, but it has the potential to reduce the disease to zero.

Of course, the challenge now is to do these activities on the scale needed in these countries, and that's a big challenge.

Because when you're working on it for this long and at this scale, you're adding two threats to the virus.

One is complacency, unrealistic complacency, and as the curve of this disease begins to descend, media and world attention will shift elsewhere.

complacency is always a risk

The other risk, of course, is that after working so hard for so long and not getting enough sleep for months on end, we all get tired and exhausted, and then we have to deal with that new risk as well.

Ladies and gentlemen, I just got back from West Africa.

The people of these countries, the leaders of these countries are not complacent.

They want their country to be Ebola-free.

Yes, these people are tired, but they are not exhausted.

They have the energy and the courage to end this disease.

Ladies and Gentlemen, at this point, what they need is the unwavering support of the international community to stand with them, to join forces with the people on the ground to strengthen solidarity and accelerate support to end the problem.

Because ending Ebola right now means turning the tables on this virus and cornering it.

Remember, this virus is a big crisis that started with one case and ends with one last case.

But only if there were enough epidemiologists in the country at the time, enough medical workers, enough administrative staff, enough people in each country to work with them to track all cases and contacts, and work to end this disease for good.

Ladies and gentlemen, we can beat Ebola.

I want the people who will listen to this story to pass it on, and to tell them what it means to beat Ebola, and more importantly, to those who can help bring these countries the resources they need, to keep telling them that we can beat this disease.

There are many people who will survive and thrive if you do what you can to beat Ebola.

Thank you

(applause)

A few years ago, I stumbled across a simple design exercise that develops my ability to understand and solve complex problems. Like many design exercises, it seems like a seemingly obvious problem at first glance, but upon closer examination, it turns out to reveal surprising truths about the way we work together and make sense of things.

This problem has three parts, and it starts with something that everyone knows how to do: how to make toast.

First, take a blank piece of paper and a felt-tip pen and ask them to draw a picture of how to make toast without using any words.

Many people draw pictures like this

I have a loaf of bread and I slice it

Put it in the toaster and wait for a while

The bread pops out and it's ready! Two minutes later you'll have toast and happiness

Over the years, I've collected hundreds of pictures of toast like this, and some of them are very well drawn, and they illustrate the process of making toast very clearly.

And then there's the not so good

It's so bad I don't even know what I'm trying to say

If you look around, you'll find that you're only looking at certain aspects of toast making.

For example, there is one where only the toast is taken out and the transformation of the toast is depicted.

Some of them explain what a toaster is, and engineers like to draw the inner workings.

(Laughter) On the other hand, there's also a focus on people.

It describes what it's like for people to experience it.

Then, thinking about the supply chain until the toast is made,

Some depict transportation networks with teleportation, some going back to wheat and fields, and even going back to the Big Bang.

It's going to be amazing

Even though these paintings are very different, you can see that they have something in common.

Do you understand? What do they have in common?

most pictures have nodes and arrows

Nodes represent tangible objects, like toasters or people, and arrows connect the nodes.

This combination of nodes and arrows creates a system model that gives us a visible mental model of how we think things work.

that's the value of a model like this

The interesting thing about system models is that they reveal differences in people's perspectives.

For example, an American

I think toast is made in a toaster.

Europeans, on the other hand, think toast is made in a frying pan, and many students make toast over an open fire.

It's hard for me to understand, but a lot of MBA students draw pictures like this.

You can measure complexity by counting the number of nodes, and the average diagram has between four and eight nodes.

Anything less than four is an oversimplification, but it's easy to understand at a glance. Anything more than 13 nodes makes the picture look messy and overwhelming.

The sweet spot is between 5 and 13 nodes

If you want to convey something visually, use a diagram with five to thirteen nodes.

All of us, even if we're not very good at drawing, have an intuitive understanding of how to decompose complex things into simple things and then reassemble them.

And that brings us to the second part of this exercise, where we're going to show you how to make toast, this time using sticky notes and cards.

What happens then?

Cards encourage many people to draw nodes that are clearer, more detailed, more logical.

As we analyze each step and build the model, we move and rearrange the nodes like Lego blocks.

It may seem obvious, but it's very important.

Expressing, thinking and analyzing in short cycles is the only way to clarity.

That's the essence of the design process.

Systems theorists have pointed out that the ease with which you can change representations correlates with your willingness to improve your model.

Sticky note systems are not only more fluid, they generally contain many more nodes than static pictures.

rich in content

In the third part of this exercise, we'll still draw how to make toast, but this time we'll do it in groups.

What happens then?

It will look like this

It's a mess at first, but then it gets even more messy, and then it gets really messy.

And then you end up with a unified system model that brings together a range of individual perspectives, which is very different from what usually happens in meetings.

The resulting picture can have 20 or more nodes, but the participants don't feel overwhelmed because they are part of the process of creating the model.

Another interesting thing is that people in groups naturally add organizational structure.

For example, we put in branching patterns and parallel patterns to resolve conflicts.

By the way, this is much faster and much better if you do it silently.

It's very interesting. Talking gets in the way.

The lesson to be learned from this challenge is

Diagrams help us understand things by letting us see things as a system of nodes and relationships between them.

With moving cards, we get a better system model, because it's more flexible to improve.

We get the broadest model when we do it with the cards in a group, because it captures a lot of different perspectives.

I think it's interesting

Models produced by teams working together in the right environment are much better than individual models.

This approach worked very well when it came to illustrating how to make toast, but what about the bigger, more pressing problem? For example, when it comes to issues such as organizational vision, customer experience, or long-term sustainability?

We're in the midst of a visualization revolution, and many organizations are solving difficult problems by collaboratively picturing them.

I think people who can represent things with movable nodes and arrows have an advantage.

it's very easy to do

It starts with a question, collects nodes, refines the nodes, repeats it, and then a pattern emerges, and a clear understanding leads to the answer to the problem.

This simple activity of visualization and iterative improvement yields some very impressive results.

It's important to note here that it's not just the model itself that matters, but the dialogue that takes place throughout this process.

The resulting visual framework can have hundreds or even thousands of nodes.

One example is Rodale

is a major publisher

One year, after a big loss, management decided to spend three days visualizing the entire operation.

After gaining visibility into the entire operation, down to individual systems, Rodale's revenue improved by $50 million and the customer rating improved from a D to an A.

why? Because the management team got a consensus view

To help organizations solve thorny problems through collaborative visualization, it became my mission to create a site called drawtoast.com, where I collected a lot of best practices.

You'll learn how to do this workshop, learn about visual languages, different structures using nodes and arrows, and apply them to general problem solving, and you can download a variety of templates that can be used to untangle the toughest problems faced by any organization.

The seemingly simple task of illustrating how to make toast can go a long way toward achieving clarity, cooperation and unity in a group.

The next time you face an interesting problem, please remember what design can teach you.

It's about making ideas visible, tangible and meaningful.

I think it's a simple, fun, and powerful technique that deserves to be celebrated.

thank you very much

(applause)

♪ (music) (audience applause) Thank you.

When I'm playing at a rock show, I'm standing still on stage and the audience is like, 'What is he doing?

♫ And when I ring ♫ (buyu~n!)

(audience laughter) I'm sure you're wondering, "How do we make that sound?"

What I'm doing is controlling the pitch of the sound with my left hand.

The closer you get to this antenna, the higher the sound ♫ (Pu~~~n (lowering sound)) You can also make very low sounds.

The volume is controlled with the right hand. The farther the right hand is, the louder the sound becomes.

♫ (beep-beep-beep) Simply put, with both hands, you control the pitch and volume, and play as if you were making notes one by one.

♫ (Buyuyu~nbu~npi) (audience laughter) Sometimes I forget that the power is on and lean forward to pick up something.

If you don't turn off the power, it'll be like a strange sound effect chasing after you

(audience laughter) I forgot what we were talking about so let's move on to the next song

I play the song "Listen, the words are gone" by David Mash, because when I calm down, I might remember what I meant to say.

♪ (music) (audience applause) I'm trying to come up with some common questions people ask, but there are too many.

Well, for now, let's talk about the history of the Theremin.

The theremin was invented around the 1920s by Leon Theremin, an inventor and a musician who, I think, came up with the theremin while working on shortwave radio.

When I heard the squeaky sound of a radio signal, I thought, "If I could control that sound, wouldn't it be possible to use the pitch of the sound to create a musical instrument?"

And through trial and error, we arrived at the current theremin.

When it comes to theremin, even kids these days imitate whistling. In the 1950s, the theremin sounded like this, because it was used in sci-fi horror movies.

Occasionally drinking too much coffee can make your vibrato a mess

Standing in front of this girl makes me sensitive to her body and how it works.

If you want to manipulate the sound properly, you have to stay still

It reminds me of the balance trick that Michael was doing earlier, because you're fighting so hard to keep the balance between playing and in tune, but you can't just focus on getting in tune, you want to feel the music.

But the slightest movement of my body affects the sound, so I try to stay still When I'm playing low notes for a long time ♫ (Boom (out of tune)) When I take a breath...

(audience laughter) If you pass out on the next song...

(audience laughter) Even the slightest movement makes me sensitive to body movements, and I become consciously sensitive to things I want to avoid.I think of the Theremin as a yoga instrument.

Also, when I go to the club for work, they say, "I'll buy you a drink!"

I answer, "Well, it's time to start... you don't want to be wooooooooooooow"

Because my mood is reflected in the sound as it is.

It's similar to a singer, but the sound doesn't come out of the throat, it's just controlled in the air, and there aren't many reference points, so I always rely on my ears to make adjustments.

While adjusting the notes according to the situation, understand that sometimes you don't get what you expect Listen to the notes and correct them Just keep playing Or else you'll be too picky and you'll go insane, like me

I want to play another song

I'll play "Drinker's Life" It's my favorite song

♪ (music) (audience applause)

I'm an artist and I carve books

this is an early work

Title: "Another Path to Knowledge"

I wanted to stack the books, and when people walk into the gallery, I wanted it to look like they were just stacks of books.

I'm interested in texture, but I think the text and illustrations in the book are even more interesting.

For most of my work, I varnish the outside of the book tightly. The varnish acts like a skin, so the book is a solid material, but the pages inside remain loose. Then I carve the book from the front, without shifting or adding anything.

I just carve out the interesting parts.

Everything in the finished product - as it was before I touched it.

My work is kind of like a remix, because I use other people's material like a DJ makes something out of other people's music.

This was a collection of paintings by the Renaissance painter Raphael, but I took his work, remixed it, carved it, and made it newer and more contemporary.

I'm also trying to break out of the traditional framework of the book, to extend the chronological format, to extend the structure of the book itself, and to turn it into a fully sculptural work.

I use vices and ropes and weights of all kinds to hold things in place before I apply the varnish, so I get the shape before I start, so I can turn this shape into this kind of work.

This is -- it's going to look like this

Something like this -- you have no idea what it's going to be, and you don't even know why it's in the studio, it's going to end up like this.

The reason people are so upset about destroying books, and why people don't want to tear them down, and why they don't want to throw them away, is because we think of books as living beings and bodies.

That's why books are alive

So for me, books are my body and my technology.

books are also tools

It's also a machine

You could say that books are landscapes.

It's a whole encyclopedia that's been joined together and sanded, and as we carve it out, we decide which ones to keep.

It's an encyclopedia, so I could have chosen anything, but I chose the landscape illustrations.

By using this as a material and using sandpaper to round the corners, not only the illustration but also the material itself can be seen like a landscape.

Now, when I'm carving a book, I'm not just looking at the illustrations, I'm looking at the text, and I see both in the same way. It's interesting that what we read -- the text, the book -- creates images in our minds, and the fragments are remembered.

So, as we read, we create images, and as we see images, we use words to make sense of what we see.

So there's a sort of yin-yang inversion that happens.

I make works that the audience completes themselves.

Also, I view my work as something close to archeology.

I'm excavating and trying to maximize the power of the material and try to reveal as many discoveries as I can in my work.

On the other hand, I'm thinking about erasure. Almost all of our information has no substance.

I have several dictionaries in my studio, and I use my computer every day.

Books may not be the best format for non-chronological information, so dictionaries and encyclopedias are the first books to disappear from our sight.

But that doesn't mean that books will disappear completely.

Some people think that books will disappear because of digital technology, but things are changing and evolving before our eyes.

I think books will evolve, too, just as some people said, "Painting will disappear" when photography and printing became commonplace.

It freed painting from the chore of storytelling, freed it to tell its own story, and that's when modernism emerged and painting took a different turn.

The same thing is happening now with books. I think books will be reinvented because almost all technology, information, personal and cultural records will be digitally recorded.

So it's an interesting time for us artists, and I'm really excited to see what the future holds for books.

thank you

(applause)

About two and a half years ago, I saw the movie "her".

The main character is a highly intelligent AI named Samantha, who has no physical body.

Unable to be photographed, she decides to make a song that captures a scene from her life.

Growing up in a family of musicians, engineers, and artists, I was fascinated by the idea of ​​snap music.

And so I decided to create an AI composer.

Her name is AIVA, and she's an artificial intelligence who learned the art of composing music by reading 30,000 of the most famous songs in history.

This kind of thing in "The Matrix" is musical notation for algorithms.

And this is a collection of 30,000 musical scores composed by Mozart, Beethoven and others on one screen.

Using Deep Neural Networks, AIVA Finds Regularities in Scores

And from a few bars of existing music, it tries to predict what note will come next in the piece.

Once we've gotten better at making these predictions, we can derive mathematical rules about the style of the song, and that's what allows us to compose our own compositions.

In a way, it's the same way we humans compose music.

It's a process of trial and error, and it doesn't always result in good music.

But we can use our ears and our musical knowledge to improve.

This is a process that normally takes decades to learn as an artist, as a musician, as a composer, but with AIVA, it can be learned in a matter of hours.

But music is also a very subjective art.

We had to teach AIVA to compose music for different audiences, because we all have different tastes.

So we categorized the scores in our database on more than 30 criteria and trained the algorithm.

Some of the metrics we used were mood, note density, the style of the composer, the era in which it was composed, and so on.

With all this data, AIVA can fill orders very accurately.

For example, in a recent project, I was asked to compose a song that reminded me of a science fiction movie soundtrack.

And the finished song is "Among the Stars." Performed by the CMG Orchestra in Hollywood, recorded under the baton of virtuoso conductor John Beale -- listen to AIVA's work.

(music) (end of music) How was it?

(Applause) Thank you.

As you've heard, AI can create beautiful music, and the great thing about this is that humans can bring it to life.

There have been examples before of technology complementing human creativity.

Silent films were often accompanied by live music to complement the viewing experience.

But the problem with live performance is that it's hard to scale.

You can't cram a symphony orchestra into a small theater, and you can't play live in every theater in the world.

The invention of recording technology allowed filmmakers and other content creators to pre-record and use original music composed for each scene in the story.

It opened up a lot of creative possibilities.

Two and a half years ago, when I saw "her," I thought to myself, the next big shift in the way people enjoy and make music is to personalize music.

Because these days, there are hundreds of hours of interactive content, like video games, but only two hours of music on average.

The same song is played over and over again, and it's not very immersive.

What we're working on is enabling AI to compose hundreds of hours of personalized music for uses beyond human creativity.

not just for games

Beethoven wrote "Fur Elise" for someone he loved. Imagine Beethoven has come back to life.

What if he could sit next to you and compose music for your personality and the story of your life so far?

Or imagine if Dr. King had his own composer AI.

Perhaps we remember "I have a dream" not just as a great speech, but as a great piece of music that is part of our history and represents the thinking of Dr. King.

As we work on AIVA, our vision for the future is that each and every one of you, and everyone in the world, is listening to your own personal music, composed to match your life story and personality.

And so being here with you today at TED is part of our story.

So I think AIVA should compose about this moment

I actually tried

Our team trained AIVA in the style of TED's opening theme and music that inspires awe and wonder.

The resulting song is "Age of Wonders."

The title didn't rely on AI

(Laughter) I'm so proud to hear this from all of you. If you don't mind, close your eyes.

enjoy the music

(music) "Age of Amazement" composed by AIVA (music ends) This is music for you

thank you

(applause)

What is an infectious disease

still the leading cause of death for people around the world

Millions of people die each year from tuberculosis, malaria, HIV, all over the world, even in the United States.

Thousands of Americans die each year from seasonal flu.

Of course we humans are creative, right?

I've found ways to protect myself from these diseases

drug or vaccine

We humans are creatures of learning from experience and thinking of creative solutions.

now i know it's not

Humans aren't the only doctors

there are many animals that can do the same

Chimpanzees are probably the most famous

You can use plants to get rid of intestinal parasites, just like us.

But in recent decades, we've learned that there are other animals that can do the same: elephants, porcupines, sheep, goats.

And even more interestingly, recent research suggests that insects and other animals with small brains also use medicinal herbs.

As we all know, the problem with infectious diseases is that pathogens keep evolving, so no matter how much we develop drugs, they become ineffective.

So we need to find new ways to develop drugs for those diseases.

So I look to these animals and I think we can learn from them how to cure our ailments.

As a biologist, I've been studying butterflies called monarch butterflies for 10 years.

These butterflies are famous for their migratory migrations, with millions of them migrating from the United States and Canada to Mexico each year, but the reason I started studying them is because of this.

because this butterfly is sick

just like you and me

So I think studying the behavior of these butterflies will help us develop medicines for humans.

Parasitic on this butterfly is “Ophryocystis elektroscirrha”, a difficult name.

This protozoan produces millions of spores on a butterfly's body, tiny specks compared to the size of the butterfly.

very harmful to butterflies

This shortens the butterfly's lifespan, diminishes its ability to fly, and may die before hatching.

It's a very harmful parasite.

I spend a lot of time growing plants in greenhouses for research, because these butterflies are very picky about their food.

Larvae only eat milkweed

There are several types of milkweed that we are lucky enough to eat, and this plant contains cardenolides.

Cardenolide is a harmful chemical

Harmful to many animals, but butterflies are an exception.

In fact, butterflies take this chemical into their bodies, making them toxic to avoid predators like birds.

And they warn of this toxicity with beautiful shades of orange, black and white.

As part of my research, I grew this plant in a greenhouse, and it's a variety of milkweed.

Some are toxic and contain very high levels of cardenolides, tropical

I grew harmless ones and fed them to butterflies.

Some of the butterflies were healthy and not sick.

There were also sick butterflies, and what they discovered was that certain milkweed plants had medicinal properties, and that feeding the butterflies helped the infected butterflies to live longer because of the relief of their illness.

When I discovered this, a thought occurred to me. Many people said it was silly, but what if butterflies used it?

What if butterflies used these plants as their own medicine?

What if butterflies used plants like doctors?

So our team started experimenting

In the first experiment, we gave the larvae a choice between medicinal milkweed and non-medicinal milkweed.

We measured the amount of plant food the larvae eat during their lifetime.

The results were boring, as is often the case with science: 50% medicinal herbs, 50% non-medicinal plants.

The larvae were doing nothing for their health.

Then we looked at the adult butterflies, and what we looked at was whether the mother butterflies would feed their offspring with medicinal herbs.

Will the mother butterfly lay her eggs on the medicinal milkweed to make her future offspring less susceptible to disease? and

I've been doing this experiment for several years now, and the results are always the same.

We put the butterflies in a large cage, put the medicinal and non-medicinal plants on either side, and count the number of eggs that each plant lays.

then the result is always the same

It turns out that butterflies have a strong preference for the medicinal herb, milkweed.

So female butterflies have a 68% chance of laying eggs on medicinal milkweed.

Interestingly, when they lay their eggs, they actually transmit parasites as well.

this is unavoidable

they can't heal themselves

However, these experiments show that mother butterflies can lay eggs on milkweed, a medicinal plant that can keep future offspring away from disease.

I think this is a very important discovery, not just because it tells us something about the wonders of nature, but because it might give us clues about how to find our medicines.

We tend to think that these animals are very small and that humans are very simple.

Their brains are very small, but they're using very sophisticated medications.

Even today, many of the medicines we use come from nature, including plants.In ancient cultures, traditional healers looked to animals to discover new medicines.

Elephants teach us how to cure an upset stomach, and porcupines teach us how to cure bloody diarrhea.

But what's important is that we move beyond these big-brained mammals to recognize more tiny animals and insects with tiny brains that we tend to think of as simple.

The discovery that these tiny creatures also use drugs opens up a whole new world of possibilities. I believe that one day we will be able to treat human ailments with drugs that were first discovered by butterflies, and I think this is a great opportunity to pursue in the future.

thank you

(applause)

I learn how to die every Monday and Thursday.

I call it "The end of my life"

My wife, Fernanda, doesn't like the name, but in my family, many people died of melanoma, including my parents and my grandparents.

So I keep thinking, one day, when I'm sitting in front of a doctor, they'll look at my test results and say, "Riccardo, you're not doing very well.

The life expectancy is six months to one year.”

Then people start thinking about what they're going to do before they die.

Like this: “Spend more time with your children.

Let's go out somewhere Climbing a mountain or something Then from now on, let's do everything we didn't do while we had time to spare."

But of course, as you can see, this will be a very bittersweet memory.

very difficult to implement

You'll probably spend most of your time crying.

So I wanted to prevent that from happening.

Dedicate every Monday and Thursday to "the end of life"

For those two days, I decided to do whatever I would do if I received bad news.

(Laughter) When you think of -- (Applause) the opposite of "work," most of the time, what comes to mind is off-time.

They'll say things like, "I need a little time off."

But the truth is, I'm very busy during my free time.

Go golf, play tennis, meet lots of people, go to lunch, be late for the movie

I have too much to do

The opposite of "work" is "leisure"

most people don't know what to do in their spare time

If you look at how you usually distribute your time, you'll notice that when you have a lot of money, you have very little time.

And by the time I finally have time, I've lost my money and my health.

Our company has been thinking about this for the last 30 years.

We're a complex company with thousands of people, a billion-dollar business, building rocket propulsion systems, operating 4,000 ATMs in Brazil, and preparing tens of thousands of people's income tax returns.

not a simple business

When I looked at our company, I thought, let's leave it up to the employees to take the boarding school aspect out of the company for them -- when they show up, how they dress, how they attend meetings, what they say or don't say, and see what happens.

We started working on this very problem about 30 years ago.

And he told his employees to think about retirement and how to organize their lives.

Instead of climbing a mountain after you turn 82, why don't you go next week?

So what I'm going to do is pay you back every Wednesday in exchange for 10 percent of your salary.

If you want to be a violinist - well, probably not, you can do it on Wednesday.

And what we found was that we thought older people would be very interested in this program.

But the average age of our first supporters was 29, which makes sense.

And as I looked at what people were doing, I realized that we needed to change the way things were done.

So I started thinking, why would I want to know what time my employees came in, what time they left, and so on?

Can we make a contract to buy a job from an employee in exchange for this?

Why are you building this kind of headquarters?

Maybe it's because they want their egos to show that they're a big, solid, important company?

But is that why you're dragging your employees around town for two hours?

we started asking questions one by one

It's like this. Number one - how do you find talent?

I went out of the office and said to someone, "Look, if you come to our company, you don't have two or three interviews, and then you don't have to settle down until you retire.

that's not the life we ​​think

I would like to have an interview with you.”

Interested people will come

We follow our intuition as things unfold, not just to get some information about whether the person is the right person.

After that, please come to the office again.

Spend the afternoon or the whole day at the office and let people talk to you if you want.

We want to make sure we're the "bride" that they think we are, and that, unlike our advertising, we're not charlatans.

(Laughter) We took things slowly. To be a leader in our company, everyone needs to be interviewed and approved by their future employees.

Every six months, everyone is anonymously evaluated as a leader.

This determines who stays in the leadership position, and as you can see, it's often situational.

You also have to get a 70, 80 percent rating to stay, which is probably why I haven't been CEO for over 10 years.

As time went on, we started asking other questions.

It's like, why can't employees set their own salaries?

what do they need to know?

There are only three things you need to know: What employees are getting paid within the company, what other companies in the industry are paying, and whether the company as a whole is making enough profit to operate.

Let's give these three pieces of information to employees

So we put a computer in the cafeteria so that employees could look up things like personal expenses and sales, what other companies' profits are, what are our own profits, what are our margins, and so on.

25 years ago

As soon as this information began to reach employees, we told them, we're not going to check your expense reports, you don't need to know how many days you're going on vacation or where you work.

At one point, we had 14 offices all over the city, but we were told to go to the office closest to your house or to the customer you're visiting today.

Where are you?

And when we had 5,000 employees, there were only two people in HR, and thankfully one retired.

(Laughter) So I thought, how do we take care of our employees? is

Employees are our only asset

We can't have a department that chases employees and treats them like children.

As we felt this was starting to work, we were exploring something, which is the core thing I was looking for in End of Life Day and in my company -- that's the core thing I was looking for in End Life and Company -- how to create a place of wisdom.

We've lived through an age of revolutions, the Industrial Revolution, then the Information Revolution, the Knowledge Revolution, but we're not that close to the Age of Wisdom.

How can we create a more intelligent organization?

For example, often the smartest policy is not to lie.

Here's how we do it. Good, sell 57 products in a week.

If it's sold by Wednesday, please go to the beach.

Don't go through the hassle of manufacturing, filing, etc. You're going to have to buy a new company or a competitor.

So go to the beach and reopen on Monday

(Laughter) (Applause) This is the process of finding wisdom.

Of course, in this process, we want people to know everything, and we want to make sure that the way we run our business is truly democratic.

So the board of directors has opened up two seats, giving equal voting rights to the first two.

(Laughter) And I got the cleaning lady to vote for the board of directors, because there are already a lot of executives in suits and ties.

In fact, thanks to them, I was able to come face to face with my true intentions.

I looked at the employees who were involved in this way, and they said, "Wait a minute." They were like, "Where should I sit?"

"What should I do?" "What will happen to me in five years?"

That's when I realized I had to start earlier.

where do i start?

oh i thought it was kindergarten

So we founded the foundation, and now, 11 years later, we have three schools.

One thing I can say is that we need to replace teachers, but if we want to do this or that, we need supervisors.

In fact, education is completely outdated.

The role of the teacher is totally outdated.

Mathematics, biology, 14th-century France is so stupid.

(Applause) So I started thinking -- what could we do?

We got together people who love education, people like Paulo Freire, two Brazilian education ministers, and we thought, what would a school look like if we redesigned it from the ground up?

And so we created this school, Lumial. One of these schools is public.

One group is tutors

In ancient Greek, paideia—meaning "watch over the child."

What's going on at home, what time is it in life, etc.

But please don't teach me how to study.

keep it in your chest

(Laughter) Now, we're asking people who have two things in common: passion and expertise, professional or not.

You're here with the elderly. They make up 25 percent of the population, and everyone says their wisdom is obsolete.

You ask these old people to come to your school and ask them to teach the students anything that you believe is important.

So a violinist teaches mathematics.

Everything is ready. No need to worry about teaching materials anymore.

We have about 10 great courses for ages 2 to 17

"How to measure the human vessel," etc.

Mathematics and physics are all involved.

"How to express yourself"

Music, literature, etc. come into play in this, and grammar as well.

There's also a theme that everyone forgets, probably the most important thing in life.

We don't know anything about that very important thing.

I know nothing about love, I know nothing about death, I don't know why I'm here

Schools need a course where you can discuss anything you don't know.

Most of what we do is like this

(Applause) As time went on, we started doing other things.

Why should I get angry with my students? Sit down, come over here, do this, do this-

We decided to let the students run a "circle," which meets once a week.

And I told them to come up with their own rules and decide how to operate them themselves.

Bang yourself on the head for a week?

ok give it a try for a week

The students devised the exact same rules that we set, but this is theirs.

And they had the power, which means they could suspend or expulse students, not play school, but really decide.

And in parallel, we left the digital mosaic curriculum, because it's not constructivism, it's not Montessori education.

We have preserved the Brazilian curriculum, which is divided into 600 units, which we want our students to be exposed to by age 17.

We keep an eye on them as they work, and if the student isn't interested at the time, we wait a year.

Students are in groups, but not by age. A 6-year-old, if he's ready, will hang out with an 11-year-old. This eliminates things like being in a closed group, which is common in schools.

Grades range from 0 to 100, and they do it themselves every few hours in an app.

A student who scores 37 points is considered knowledgeable enough to go out into the world.

Subjects include soccer world cup and bicycle assembly.

If you register for a course to assemble a bicycle in 45 days

If there is no knowledge of pi = 3.1416

you can't

Try using 3.1416 for something

you don't remember

Knowledge disappears, and trying to do something about it is the wisdom we seek at this school.

And here comes to mind again this graph of the allocation of time in life.

Come to think of it, I saved a lot of money

Like you, it's time to give back.

(Laughter) (Applause) I have a story in my head that Mr. Buffett woke up one day to find that he had 30 billion dollars more than he thought he had.

You said, "What am I going to do with this money?"

"Somebody, let's do this to someone who really needs it.

Bill Gates." (Laughter) Also, my financial advisor in New York says, "You're an idiot. If you didn't share your money right away, and instead started making money with your money, you could be 4.1 times your size by now."

i like to share and make people's lives better

(Applause) At one point, I was teaching an MBA at MIT, and one day I came to the conclusion that Mount Oban Cemetery --

A beautiful cemetery in Cambridge

I was walking around there, it was my birthday, and I was thinking

For the first time, I saw tombstones and names of amazing people who had accomplished great things, and I thought, How do I want to be remembered? and

And then I did another round. On the second round, another question came to me, which is a better question: Why do I want to be remembered in the first place? and

(Laughter) I think this changed me.

One day when I was 50, my wife, Fernanda, and I sat all afternoon, we built a bonfire and threw everything we'd ever had on the fire.

Books translated into 38 languages ​​Hundreds of articles DVDs and everything else

this helped in two ways

First, five children have been freed from our footprints and shadows because they don't know what I've done.

(Laughter) That's good.

This will go away Take the kids somewhere and say "Someday this will all be yours"

(Laughter) Five kids don't know anything, which is a good thing.

Second, I was freed from past achievements and other shackles.

You can always start something new, and you can start all over again, and you can use your end of life day to do that.

Some people say, "If you have the time, you can go out and do whatever you want."

No, I've already been to the beach, I've been to Samoa, I've been to the Maldives, I've been to Mozambique.

I climbed the Himalayan mountains

I dived 60m underwater to see hammerhead sharks

I traveled from Chad to Timbuktu in 59 days on the back of a camel.

I went to the magnetic North Pole on a dog sled.

Yes I've been busy

Let's call it the "I did it before I die" list.

(Laughter) Based on this rationale, I don't feel like I'm retired at all these days.

So now I'm writing a new book

Three new companies have been launched in the last two years.

We're also working on making this school system available to the world for free.

So for 10 years, I've been trying to find a public system that inherited the rationale of this school, which is similar to the public school that we started with, and the ratings went from 43 out of 100 to 91 out of 100.

But if it's free, no one wants to come.

So if you charge a fee, things might change.

But solving school problems is one of the things we wanted to do.

And what this teaches me, I think, is this little thing: We've all learned how to spend Sunday nights, texting and working from home.

But most people haven't learned to go to the movies on Monday afternoons.

If you're looking for wisdom, you have to learn that too.

So in recent years, what we've been doing is very simple. We use a little tool. We ask "why" three times in a row.

Because the first "why" is well answered.

The second time it gets harder and harder

The third time you won't be able to answer - "Why are you doing that?"

That's the kind of thing I want to leave you with, and if you try it, you'll have the same question, "Why?"

"Why am I doing this?"

And hopefully as a result, after many years, hopefully a more wise future awaits you.

thank you

(Applause) Chris Anderson: Ricardo, you're kind of crazy.

(Laughter) A lot of people would say crazy.

yet full of wisdom

My thoughts are summed up like this -- yours is very radical.

For example, in the business world, this idea has not been accepted for the time being, and the percentage of businesses that have embraced it is probably still very low.

Have you ever seen a big company implement even one of these ideas?

Ricardo: Yes, I see it from time to time. About two weeks ago, Virgin Group said to its employees, "Oh, I don't want to manage your holidays anymore."

As the originator, I kind of want to take a look, but this is just my personal opinion.

In fact, to get out of control, you just have to believe.

Few people in control are prepared for that.

I'm sure you have children and people who want to start a company differently.

Chris: So that's the trick?

There's evidence to support your point of view, because there are companies where this has worked, but they just don't have the courage -- (Huh!) Ricardo: There's no incentive.

Managers are asked for results in units of 90 days

quarterly report

If things don't go well for 90 days, I'm fired.

If you say, "There's an amazing program in my generation...", they'll probably say, "Get out!"

this is the problem

(Laughter) Chris: The work in education is incredibly deep.

Everyone feels bitter about the education system in their country.

In the world of technology like Google, nobody is still catching up In the world of technology like Google, nobody is still catching up

Children have gone through this system of education, and now you have the hard evidence: a dramatic improvement in grades.

What help do you need to promote these ideas?

Ricardo: That's a well-timed question.

I never thought of becoming an evangelist of my ideas.

I have to say

I just stumbled across this very scary group in Japan called Semuralist, which has 120 companies.

they invited me

The Dutch group has 600 small companies.

It's run by the members themselves.

There may be misunderstandings, but that's okay

will become

What scares me is the other type: "This is so good, you should do it too."

"Let's get the system up and running with lots of money." And then people will do whatever they want.

Chris: And then you had some extraordinary questions about life.

I think that was the fuel that drove me to do a lot of the work.

Do you have any questions for TED and the audience?

Ricardo: I always ask the same question at times like this, originally asked by my son when he was three years old.

I was in the jacuzzi and asked, "Papa, why do we exist?"

I have no other questions

There will be no other questions

This is applied to the example question 3 in a row.

So when you're spending time in a company, government office, or any other organization, ask yourself, how many people on their deathbed would say, "I wish I could have spent more time at work."

So all you need is to be brave now -- not in a week, two months, or when something happens -- and think, "Why am I doing this?"

Let's stop everything Let's do something else

It'll work, and you'll have a much better life, if you're feeling stuck.

Chris: It was such a deep and beautiful story to end this good day.

Thank you Ricardo

Ricardo: Thank you

(applause)

What I want to tell you today is the history of architecture over the last 30 years.

I can wrap this up in 18 minutes.

It's a complicated topic, so let's put aside the preamble and start with the complicated part, New Jersey.

Thirty years ago, I was six years old, from Jersey, and I was living with my parents there in a town called Livingston, and this was my childhood room.

Around the corner from my room was the bathroom that I shared with my sister.

Between my room and the bathroom, there was a balcony overlooking the living room.

That's where my family relaxes and watches TV, so when I move from my room to the bathroom, my family sees me every time I take a shower and walk in my towel.

so i was that kind of boy

I hated myself for being clumsy and awkward

I hated that hallway and that balcony. I hated my room and my house.

this is architecture

(Laughter) It's over.

That feeling -- the feeling I had -- that's the power of architecture, because architecture isn't about calculation and planning, it's about the visceral emotional connection we feel to where we are.

It's no surprise that you feel this way, because according to the United States Environmental Protection Agency (EPA), Americans spend 90 percent of their lives indoors.

Ninety percent of this time, we're surrounded by architecture.

it's very important

Without us realizing it, our consciousness is greatly influenced by architecture.

So we're a little bit more gullible, a little bit more gullible.

So if I show you a building like this, I can see what you think.

We know this because the structure on which this building is based was built by the Greeks 2,500 years ago.

this is a trick

By following the forms of the past with the hands of an architect, they make the viewer feel an emotional connection with their building.

It's a predictable emotional connection, and we've used this trick for a long time.

200 years ago it was used to build a bank

In the 19th century it was used for museum architecture.

And in 20th-century America, it was used to build houses.

Look at this sturdy and calm little sentinel facing the sea and keeping the forces of nature at bay.

This is very useful because building things is scary.

Building is expensive, time consuming, and very complicated.

So people who build buildings -- developers and politicians -- are naturally averse to innovation.

and build a building like this

nice building

The Livingston Public Library was completed in my hometown in 2004. With a dome, round decorations and columns and red bricks, you can imagine what Livingston wanted to convey with this building: children, property values, history.

But it doesn't have much to do with the role of modern libraries.

In the same year, 2004, on the other side of America, another library was completed, here.

located in Seattle

This library is emblematic of how we interact with media in the digital age.

It's a new public facility in the city where people can come together to read and share.

How did this happen? Why are two buildings called "libraries" built in the same country in the same year so different?

The answer is that architecture follows the pendulum principle.

On the one hand, there's innovation, and architects have always pushed for new technologies, new typologies, new solutions that we see today.

And as a result of continuing to push hard, everyone completely turned aside.

Now I'm dressed in all black and I'm very depressed. You may think I'm nice, but my heart is dead because I didn't have a choice.

So we have to go to the other side and bring back the symbolism that the public likes.

And then you're all happy, but we feel guilty, so we start experimenting again, pushing the pendulum back and swinging it back and forth, and 300 years have passed, and the last 30 years have definitely been.

Speaking of 30 years ago, I was in my late 70s.

Among architects, there is a trend called Brutalism.

it's concrete

(Laughter) This is not hard to imagine.

Small windows or impersonal sizes

Really rough format

As we approach the '80s, we're starting to embrace symbolism again.

You pushed the pendulum back in the other direction.

I tweaked it to a shape that the public would like.

We added neon, we added pastel colors, we incorporated new materials.

everyone liked it

There architects are not satisfied

You can apply Chippendale-style furniture to skyscrapers, and skyscrapers can become medieval castles made of glass.

Forms got bigger, bolder and more colorful.

The dwarf became a cylinder

(Laughter) The swan grew to be the size of a building.

it's crazy

But it's the '80s, so that's cool, right?

(Laughter) We used to build shopping malls, we go out into the suburbs, where architects can realize their dreams in the remotest corners of the suburbs.

The dream is Mediterranean, French, Italian.

(Laughter) It might have endless bread sticks.

in postmodern architecture

It's a restoration of symbolism.

It's both easy and cheap, because instead of creating a place, you're just creating a memory of the place.

Yes, you know all too well, it's not Tuscany.

if in ohio

(Laughter) And then frustrated architects start swinging the pendulum in the other direction.

In the late '80s and early '90s, they experimented with a technique called deconstructivism.

Throw away the historical symbolism and surrender yourself to a new computer design technology to create a new composition, a collision between buildings.

It's academic, it's dizzying, it's very unpopular, and it turns you off completely.

Ordinarily, the pendulum should now be pointing in the opposite direction.

but something wonderful happened

1997 This building opened

Guggenheim Museum Bilbao by Frank Gehry

This building fundamentally changes the relationship between the world and architecture.

Paul Goldberger said, "The evaluation of this building was one of those rare moments when critics, scholars and the public came together completely."

The New York Times called this building a "miracle."

Since the building was completed, the number of tourists visiting Bilbao has increased 25 times.

And suddenly everyone wanted a similar building: Los Angeles, Seattle, Chicago, New York, Cleveland, Springfield.

(Laughter) You see Gary's buildings everywhere because people want them.

he's the first star architect to come out of us

Why is it that these morphologies — rugged and radical morphologies — have come to be seen all over the world?

Because of the successful coverage of these buildings in the media, the building quickly became synonymous with culture and tourism.

We created an emotional response to the building.

So did the mayors of the world.

They thought that building a building like this would serve as a springboard for culture and tourism.

By the time we entered the new millennium, this was happening to a few other star architects as well.

Zaha Hadid, Daniel Libeskind What happened to these few elite architects at the turn of the millennium was spreading throughout architecture as digital media gained momentum and the speed at which we consume information.

Think about our awareness of architecture.

A thousand years ago, you would have had to travel to the next village to see the building.

Transportation is also getting faster. You can travel by boat or by plane.

So is technology. You see it in the newspapers, you see it on television.

Architecture is everywhere, and what this means is that the speed of communication has finally caught up with the speed of architecture.

The truth is, architecture is a fast-moving thing.

Architectural conception doesn't take that long.

The slowest part is the actual construction, which takes three to four years, but during this time the architect will design two, eight, hundreds of different buildings, without knowing whether or not the building they designed four years ago will be successful.

It's because the feedback loop in architecture didn't work.

And so this building was born

Brutalism wasn't a two-year trend, it was a 20-year trend.

For 20 years, architects have been building buildings like this, and they had no idea that they would be unpopular with you.

This will never happen again, because we are on the eve of a great transformation in architecture, after the invention of concrete, steel, and elevators, and now we are in the midst of a media revolution.

So my theory is that if you add media to the pendulum, it will start moving faster, so quickly that what was on either end of it will become the same, effectively blurring the line between innovation and symbolism -- what separates us, the architects, from you, the public.

And symbolism that evokes emotion can be created almost instantly from scratch.

I'll give you an example of how this works from a recent project we worked on.

We were asked to rebuild a building that had burned down.

It's located in downtown Pines, on Fire Island, New York.

Resort area

What we proposed was something new -- different from any other building that is familiar to the local community, and it was very unsettling for us and our clients. Locals were also wary.

So by not having to wait two years for construction to become part of the community, there won't be any surprises when the building is actually completed.

This building had already become a part of the community, and in the first summer of its completion, when people who visited the building shared it on social media, it was no longer just a megastructure, it had become a media, because these aren't just pictures of buildings, they're pictures of buildings you've taken.

And when you talk about those pictures, they become a part of you, and they're basically short-circuiting the information in the architect's head and making it possible for you to understand these emotional symbols.

In other words, we no longer need a Greek to teach us about architecture.

We can share our thoughts about architecture with each other, because digital media has changed the relationship between us and buildings, and the relationship between humans is still alive.

Remember the Livingston Library?

If that building were to be built today, the first thing people would do would be to search the internet for "new library."

They'll see experiments, innovations, buildings that transcend the concept of a library.

I'm ready

Armed with this knowledge, we can set up a meeting with the mayor and residents of Livingston to say that there is more than one way a library should be today.

Let's make it like this

So many attempts have been made, that architects should have the freedom to experiment.

we are in a new era

Builders aren't mysterious creatures with pompous words and difficult compositions, and you're no longer the silent masses.

Architects listen to you and you are not afraid of them.

So a pendulum that's swung from side to side, swinging from style to style over time, doesn't make sense.

We can actually step forward and find effective solutions to the problems facing society.

This is the end of the history of architecture, so the architecture of the future will look very different from the architecture of today.

How the public spaces of the ancient Spanish city of Seville are unique and can function as modern cities.

A stadium in Brooklyn is a stadium in Brooklyn, not what we think of as a red-brick, historical jumble.

And the day will come when robots will build buildings, and they're finally ready to embrace the forms they create.

It means that buildings can follow nature's whims instead of trying to force them.

A parking lot building in Miami Beach, Florida, has become a place for sports, yoga, and even a midnight wedding.

(Laughter) So if three architects dreamed of swimming in New York's East River, they'd get a group of like-minded people, and they'd make nearly half a million dollars.

It means that buildings, no matter how small, can be the subject of innovation.

And a building doesn't have to be pretty to be liked. This ugly little building in Spain was dug by the architects, filled with hay and covered with concrete. When the concrete dried, they invited someone to remove the hay.

It doesn't matter if cows build our buildings or if robots build them.

It's not how you build that matters, it's what you build.

Architects know how to build green, smart and friendly.

All that's left is to get people interested.

And finally, we architects are now at home.

Find an architect Hire us Let's build better buildings, better cities, and a better world together It's rewarding

Buildings don't just mirror our societies, they make our societies, from our small spaces to our local public libraries to the homes where we raise our children, from our rooms to the corridors leading to our bathrooms.

thank you

(applause)

What is the rapidly growing health problem for Americans?

cancer? heart attack? Diabetes mellitus?

It's actually none of these things, the correct answer is Alzheimer's disease.

In the United States, one person is diagnosed with Alzheimer's disease every 67 seconds.

Alzheimer's disease patients are expected to triple by 2050, and caring for them in an aging society is becoming a major social problem.

My family experienced first-hand the hardships of caring for someone with Alzheimer's disease.

Growing up in a home with three generations, my grandfather was very close to me.

When I was four years old, my grandfather and I were walking in a park in Japan when he suddenly disappeared.

It was the most frightening moment of my life, and it was the first time my family learned that my grandfather had Alzheimer's disease.

Over the last 12 years, my grandfather's symptoms have gotten worse and worse, and his wanderings have been particularly stressful for the family.

My aunt, who was my grandfather's primary caregiver, struggled to stay awake in the middle of the night to keep an eye on him, but often couldn't stop him from getting out of bed.

I became very concerned about my grandfather's safety, as well as my aunt's health.

I searched all over for a solution that would help my family's problems, but I couldn't find one.

Then one night, two years later, while I was in his care, I saw my grandfather trying to get out of bed.

What if we put a pressure sensor on the heel of my grandfather's foot the moment he hits the floor? I thought

As soon as you get out of bed and put your feet on the floor, the pressure sensor senses the increased pressure due to your body weight and wirelessly sends an audible alert to the caregiver's smartphone.

That way my aunt might sleep better at night without worrying about her grandfather wandering around.

Now let me demonstrate this sock.

Can we have a model in socks come out?

thank you

Now, when the patient hits the floor -- (alert tone) -- an alert tone is sent to the caregiver's smartphone.

Thank you. (Applause) Thank you sock model.

Well, here's the blueprint for the early design.

My desire to create sensor technology may stem from my long-standing love of sensors and technology.

When I was six years old, an elderly family member who was close to me fell in the bathroom and was seriously injured.

I got worried about my grandparents and decided to build a smart bath system.

We put motion sensors in bathroom tiles to detect when an elderly patient falls in the bathroom.

I was only six years old at the time, and I hadn't graduated from kindergarten, so I didn't have the money or the tools to make this idea a reality, but this research experience cemented my desire to use sensors for the elderly.

We believe sensor technology can improve the quality of life for the elderly.

As we planned, we found that we faced three challenges: the first, building the sensor, the second, designing the circuit, and the third, coding the smartphone app.

This turned out to be much more difficult to implement than we originally thought.

First, I had to create a thin, flexible, wearable sensor that would fit comfortably on the bottom of a patient's foot.

After more extensive research and experimenting with different materials like rubber, we found that rubber was too thick to sit comfortably on the bottom of the foot, so we decided to print the film sensors with pressure-sensitive conductive ink molecules.

Under pressure, the conductivity between molecules increases.

That allowed me to design a circuit that measured pressure by measuring electrical resistance.

Then we had to design a wearable wireless circuit, but wireless signaling requires a lot of power and heavy, bulky batteries.

Thankfully, I discovered Bluetooth's low-energy technology, which consumes very little power and runs on a coin-sized battery.

This prevents the system from running out of power in the middle of the night.

Finally, I had to code an app that could turn the caregiver's phone into a remote monitor.

For this, I learned more about Java and XCode, and learned how to code for Bluetooth low-energy devices using YouTube videos and various textbooks.

Combining these elements, we created two prototypes, one in which the sensor is built into the sock, and another with a reattachable sensor component that can be glued to anything that touches the bottom of the patient's foot.

About a year ago now, the device was tested by my grandfather, and it had a 100 percent success rate in detecting his loitering more than 900 times.

Last summer, we were able to beta test this device at several residential care homes in California, and we're currently incorporating feedback to improve the device to make it commercially viable.

By getting more patients to try the device, we knew we had to find a solution for people who didn't wear socks to sleep at night.

Sensor data collected by many patients can help improve caregiving, and possibly even cure Alzheimer's disease.

For example, we're currently looking at correlations between the frequency of patients' nocturnal wanderings and their daytime activities and diet.

I'll never forget the first time my device sensed my grandfather wandering around at night.

In that moment, I was struck by the power of technology to change lives for the better.

I envision a world where people can live happily and healthily.

thank you very much

(applause)

One of the first patients I saw as a pediatrician was a beautiful one-month-old baby, Sol, who was hospitalized with a severe respiratory infection.

Until then, I had never seen a patient turn so quickly.

For two days she was put on a respirator and died on the third day.

Sol had whooping cough

After discussing the case in the room and clearing my sorrow, I remember the chief resident saying, "Take a deep breath and wash your face.

This is the hardest part, I have to go and explain it to my parents."

Thousands of questions came up at that time, like, "How could a one-month-old baby have to suffer such bad luck?"

"Could there have been more?"

Before there were vaccines, many infectious diseases claimed the lives of millions of people each year.

The 1918 flu pandemic killed 50 million people.

That's more than the entire population of Argentina

I'm sure some of you are familiar with the polio epidemic that hit Argentina in 1956.

There was no polio vaccine at that time.

Everyone was helpless and lost their minds

Applying quicklime to the trees

I would put a sachet of camphor in a child's underwear, as if it could be of some use.

Thousands of people died in the polio epidemic

And thousands of people were left with severe neurological deficits.

I read about it, and vaccines have saved our generation from plagues as bad as this one.

Vaccines are one of the greatest public health successes of the 20th century.

Second only to safe drinking water, it is the invention that has contributed the most to reducing mortality even compared to antibiotics.

Vaccines have driven serious diseases like smallpox off the face of the earth, and they've helped to dramatically reduce mortality from diseases like measles, whooping cough, and polio.

All these diseases are considered vaccine-preventable diseases.

What is this?

So these diseases should be preventable, but there are things we must do to prevent them.

I need to get the vaccine

Most of you here today will get a vaccine at some point in your life.

But I don't know how many of these people know which vaccines and boosters they should receive after adolescence.

Have you ever wondered who the vaccine will be used to protect?

what does this mean?

Does it have any effect other than self-protection?

let me explain

Let's say you're in a city that's never had an epidemic like measles.

no one has ever been sick here

That's why no one is tolerant to measles and has never been vaccinated.

One day, a measles patient arrives in the city, and measles can quickly spread from person to person without encountering resistance, infecting the entire community.

After a while, most of the population will get sick.

This is what happens when there is no vaccine

Consider the opposite case

In this city, more than 90 percent of the population is immune to measles -- either they've had measles once and are naturally immune, or they've been vaccinated against measles.

One day, a measles patient comes to town, and the measles meets a great deal of resistance and cannot be passed from person to person.

Infection is minimal and measles outbreaks do not occur.

What I would like to note here is

Not only are vaccinated people protecting themselves, but they are also indirectly protecting unvaccinated community members in terms of preventing disease outbreaks in their communities.

Getting vaccinated protects people by putting up a shield that prevents them from coming into contact with the disease.

This indirect shield created by the unvaccinated people in the community being surrounded by vaccinated people is called "herd immunity."

Many people in the community are protected from disease only by this herd immunity.

The proportion of unvaccinated people you see in this chart is the real one.

They are our nephews, nieces, children, children too young to be vaccinated.

Also, our parents, our siblings, our acquaintances, may have some disease or are on immune-suppressing drugs and may not be vaccinated.

Some people are allergic to certain vaccines.

There may be people here who haven't had the desired results from their vaccines, because not all vaccines are 100 percent effective all the time.

These people are protected from disease only by herd immunity.

For herd immunity to be effective, the majority of the population must be vaccinated.

This required coverage is called the "threshold".

The threshold depends on many variables, from the nature of the virus to the immune response that the vaccine elicits.

and they all have something in common

If community vaccination coverage is below a threshold, the disease becomes more contagious, and an outbreak can occur in the community.

Even a disease that was once contained may reappear.

This is not a theoretical speculation

It's a phenomenon that is still seen today in real situations.

In 1998, a British researcher published a paper in a prominent medical journal, suggesting that a new combination vaccine that protects against measles, mumps and rubella is associated with the development of autism.

The announcement immediately generated a reaction.

People stopped vaccinating, they stopped vaccinating their children.

So what happened?

The world's vaccinated population has fallen below the threshold

Measles epidemics broke out in cities around the world, even in the United States, Europe, and so on.

many people get sick

died of measles

after that

This paper caused a great deal of controversy in the medical community.

Dozens of researchers have begun work to confirm its authenticity.

But not only did no one find a causal link between the new triple vaccine and autism, it turned out that the paper was making an incorrect claim.

the paper was deliberately manipulated

The medical journal formally retracted the article in 2010.

One of the reasons and excuses for avoiding vaccination is side effects.

Vaccines, like drugs, can have side effects.

Most are mild and temporary

The benefits always outweigh those side effects.

When we are sick, we want to get well soon.

We often take antibiotics when we have an infection, we take antihypertensives when we have high blood pressure, we take medicines for the cardiovascular system.

Because I want to recover quickly from my illness

There are very few questions

So why do we find it so difficult to take care of ourselves and protect ourselves from disease while we are healthy?

When we get sick or face a crisis, we desperately take care of our bodies.

Most of us here remember the 2009 influenza A pandemic in Argentina and around the world.

It was just winter in Argentina when the first cases came to light.

we know nothing

everything was confusing

People wear masks all over town and run to pharmacies to buy alcohol-based hand sanitizers.

Even though the pharmacies are lined up for vaccinations, and we don't even know if it's an effective vaccine against this new virus-

we knew nothing

At the time, in addition to my research as an Infant Foundation scholar, I was working as a pediatric family physician for a South American prepaid healthcare company.

By the time the shift started at 8am, 50 people had already been booked.

It was chaos, no one knew what to do

I remember well the tendencies of the patients I treated

The patients were a little older than the ones we usually see in the winter, and had a long-lasting fever.

When I reported this to my supervisor at work at the time, he told me that he had heard similar reports from his colleagues that many pregnant women and young people were being admitted to the hospital's ICU as a clinical case of difficult care.

So we tried to figure out what was going on.

First thing Monday morning, I drove to a hospital that accepts new flu patients in the suburbs of Buenos Aires.

When I got there it was crowded

The medical staff were wearing NASA-like protective gear.

we all have masks in our pockets

I was nervous and held my breath for two hours.

I still know what's going on

We immediately started contacting pediatricians at six hospitals in the city and a hospital outside Buenos Aires.

The goal was to find out what symptoms this new virus causes in children in the shortest time possible.

It was a tough job like running a marathon.

Within three months, we were able to confirm the properties of this new H1N1 virus in 251 infected and hospitalized children.

The children who were most affected were those under the age of four, especially those under the age of one, those with neurological disorders, especially those with chronic respiratory diseases.

It was important to identify these high-risk groups in order to put them on the priority list for flu vaccination, and this information was relayed not only to Argentina, but also to other countries that had not yet hit the epidemic.

A year later, with the H1N1 virus vaccine, we waited and watched.

After a massive vaccination campaign to protect high-risk groups, hospitals where 93 percent of people in high-risk groups were vaccinated did not admit a single patient with the H1N1 virus.

(Applause) In 2009, there were 251 cases.

Zero in 2010

Vaccination is an act of individual responsibility, but it has the power to impact a large population.

If I get vaccinated, I can protect not only myself, but also the people around me.

Sol with whooping cough

He was still very small and had not yet received the whooping cough vaccine.

I still wonder what would have happened if everyone around Sol had been vaccinated.

(applause)

Now imagine - you're in a bar or a club.

If you think you're good at what you do, you're quick to say, "I'm a mathematician."

My teacher was the worst.” (laughs) And B: “But what is math for?”

(Laughter) Today, let's talk about Case B.

(Laughter) When I say what mathematics is for, I'm not talking about how to use mathematical science.

The question is, why do I have to study these things that have no use in my life? (Laughter) And that's the real point.

When mathematicians are asked what the significance of mathematics is, their responses are broadly divided into two categories: 54.51% of mathematicians take an offensive stance, and 44.77% take a defensive stance.

The remaining 0.8% are mavericks and I'm in here.

What kind of person would take an aggressive stance?

An aggressive mathematician would say something like, "That question is nonsense. Mathematics has meaning in its very existence. A beautiful system with its own logic. It's pointless to keep trying to figure out what mathematics can do in the first place."

Can poetry help? what about love

Is life useful? What a question."

(Laughter) English mathematician Hardy is exactly this type of attack.

A defensive mathematician says, "My friend, if you don't realize it, it's all math."

(Laughter) People here take bridges and computers as examples.

"Without mathematics, bridges collapse," he boasts.

(Laughter) It's true that computers are a bunch of mathematics.

Recently, they've also been saying that information security and credit cards are all about prime numbers.

If you ask your math teacher a question, you'll get this kind of answer.

Even the teachers at school are the type to go on the defensive.

So who is right?

Does mathematics need no purpose or is it all mathematics?

Actually both are correct

Now, I told you earlier that I'm in the other 0.8%.

Now ask me what math is for

(audience) What is mathematics for?

76.34% of you asked the question just now, 23.41% of you are silent, and the remaining 0.8% of you are -- what the hell are you doing?

To 76.34% of you, yes, mathematics doesn't have to do anything, and mathematics has a beautiful, logical system, and it's probably the greatest collection of human intellect in human history.

Scientists and engineers, on the other hand, pursue mathematical theory to advance their research, and they're in a system of mathematics that permeates everything.

I think it's fair to say that we should seek deeper truths that science can't reach.

Science is driven by intuition and creativity,

Mathematics controls intuition and denigrates creativity.

People who hear this for the first time are often surprised, but if you take a piece of paper that's 0.1 millimeter thick and fold it 50 times, if it's big enough, it's about the distance between the Earth and the Sun.

Intuition would tell you that it's impossible

Do the math and you'll know it's true

This is why mathematics exists

Science in any field makes sense because it allows us to better understand this beautiful world.

It also helps us avoid the dangers that lurk in this harsh world.

There's also science that helps us out of danger more directly.

Oncology is

There are other sciences that we watch from afar, sometimes with jealousy, but we also pride ourselves on supporting them.

Those sciences are underpinned by basic sciences, including mathematics Those sciences are underpinned by basic sciences, including mathematics

The rigor of mathematics is what makes science true science.

Mathematics is rigorous because its results are eternal truths.

I'm sure you've all heard and said, "Diamonds are forever."

Depends on your definition of "forever"

Theorem - it is truly eternal

(Laughter) The Pythagorean Theorem is still true. Pythagorean is dead, but it's still true.

If the two sides of the triangle and the hypotenuse were conveniently matched (Laughter), the Pythagorean theorem would work perfectly.

(Applause) We mathematicians are trying hard to find theorems.

Eternal truth is

But it's not always easy to tell the difference between an eternally true theorem and mere speculation.

need proof

For example, let's say you have a huge, infinite surface.

I think about filling it with shapes of the same size without gaps.

you use a rectangle

You can also use a triangle, but a circle creates a small gap.

Which shape would be best?

Same area but shorter perimeter

In 300 A.D., Pappus of Alexandria said the hexagon was the best, just like the bees.

but he didn't prove

When I said, "Hexagon is good, let's go with that!"

Unless you prove it, it's just speculation.

"Hexagon!"

The world was divided between those who favored Pappus and those who opposed it. It wasn't until 1,700 years later, in 1999, that Thomas Hales proved that Pappus and Bees were right, and that hexagons were the best.

It became a theorem, called the honeycomb theorem, and it's been true forever, longer than your diamond.

If you want to fill a space with the same shape without gaps, you can also use a cube.

A sphere would have a small gap (laughter). What shape would be best?

Lord Kelvin, who is famous for things like absolute temperature, said that the best one is the truncated octahedron.

(Applause) Look.

Who doesn't have a truncated octahedron at home? (Laughter) Plastic one.

"You prepare a truncated octahedron because the guests are coming."

(Laughter) But Lord Kelvin didn't prove it.

It remained an inference, ended with Kelvin's inference.

The world was divided into those who favored Kelvin and those who opposed it (Laughter), and after about a hundred years, we found a better shape.

Weir and Phelan found this little shape. (Laughter) This structure has a very noble name: the Weir-Phelan structure.

(Laughter) It looks like a strange object, but it's not. It's a form that exists in nature.

Interestingly enough, this structure was used for something, and its geometric properties were bought into the Beijing National Aquatics Center, which was built for the Beijing Olympics.

There, Michael Phelps won eight gold medals and became the greatest swimmer of all time.

"Best ever" is until someone surpasses it

just like in the Weir-Phelan structure

Until something better comes along, it's the best

But be warned, in a hundred years or 1,700 years, I don't know, someone could prove that's the best way.

If proven, it becomes a theorem, and is held true forever.

more eternal than diamonds

So if you want to tell someone, "I love you forever," you can give them diamonds.

But if you "true" love forever, give me a theorem

(Laughter) But wait a minute.

Prove it properly so that your love doesn't end up in reasoning

(applause)

A hostile artificial intelligence called NIM has taken over computers around the world.

Only you can stop this artificial intelligence, and you only get one chance.

You've infiltrated a secret NIM lab, floating on a raft of electrified water 25 stories high.

We've installed a remote control that can lower the water level by draining it through a grate at the end of the room.

If you can bring the water level down to zero, you can reach the manual control button to stop the NIM and get out of trouble.

But artificial intelligence is aware of your intrusion, and it can still lower the water level by draining the water out through a hole in the bottom.

If NIM reduces the water level to zero, you will be ejected from the lab and the mission will fail.

It's your turn to lower the water level, and you and NIM alternate, and neither of you can pass your turn.

Each other can only lower the water level by one, three, or four floors at a time.

Whoever manages to bring the water level to exactly zero wins this life-and-death game.

Note that neither can lower the water level below zero. If the water level is on the second floor, all you can do is lower the water level one floor.

You know that NIM has already calculated all the possibilities and will try to maximize your chances of winning.

you go first

How can I survive and stop artificial intelligence?

Stop the video here and think about it

3 seconds to the answer 2 seconds to the answer 1 second to the answer It's dangerous to let chance happen.

you have to react to your opponent's every move

A hint is to traverse backwards from where you want the last position to be.

I want the water level to be zero, so it's fine if it's my turn to bring the water level to the first floor, the third floor, or the fourth floor.

If the water level is on the second floor, you can only lower the water level by one floor, so NIM points to the winning move.

If you color the water levels, you'll see a simple law of the game: there are floors that you "lose," like the second floor.

There are also "win" floors, and when it's your turn on that floor, you can either win or push your opponent to the losing floor.

The 1st, 3rd and 4th floors are not the only winning floors, the 5th and 6th floors are also included because they can push the opponent to the 2nd floor.

How about the 7th floor?

Next, no matter what you do, it will be a winning floor for your opponent, so the 7th floor is also a losing floor.

In this way you can proceed to the upper floors

If you start one, three or four floors above the losing floor, that is the winning floor.

Anything else is doomed to lose

You could continue like this all the way to the 25th floor.

But there's a shortcut. Did you notice that floors eight through eleven are exactly the same color as floors one through four?

The color of each floor is determined by the color of the 1st, 3rd, 4th floor, which means that the 12th floor will be the same color as the 5th floor, the 13th floor will be the same color as the 6th floor, the 14th floor will be the same color as the 7th floor, and so on.

Now, starting on the 25th floor, you must always keep your opponent on the losing floor.

In the first order, the only correct answer is to lower the water level by four stories.

No matter what the artificial intelligence does, it always guides your opponent to the losing floor, and when you reach floor zero, you manually stop it.

crisis is averted

Now let's start surfing the net again without much stress.

humans are everywhere

With settlements on every continent, humans can be found in some of the most remote jungles, oceans and tundras on Earth.

Many scientists believe that humans have had such a huge impact that they have left a permanent imprint on the Earth's geological record.

So what would happen if humans suddenly disappeared from the face of the earth?

Some man-made objects are going to get you into trouble very quickly because there's no one to take care of them.

Within hours of the disappearance of mankind, oil refineries would go awry, causing fires that would last for months, such as those that have occurred in plants in western India, the southern United States, and South Korea.

Subways like those in London, Moscow, and New York will have hundreds of abandoned pumps, and the tunnels will flood in less than three days.

By the end of the first week, most of the emergency generators had shut down, and when the fires subsided, the planet would be plunged into darkness for the first time in centuries.

After the first catastrophic month, change becomes more gradual.

Within 20 years, weeds and tree roots will ruin sidewalks.

At the same time, flooded tunnels erode roads and create rivers.

In temperate regions, seasonal changes cause these channels to freeze and thaw repeatedly, cracking pavements and concrete foundations.

Leaky pipes cause a similar reaction in concrete buildings, with most skyscrapers collapsing before the 200th winter.

In cities like Houston, built on river deltas, buildings are washed away and crumbling concrete fills tributaries.

In rural and suburban areas, the collapse is more gradual and largely predictable.

Water leaks, mold, insects, and rats, familiar enemies to those who own a house, can rampage freely.

Within 75 years, the rotting, distorted and crumbling remains of most houses become home to local rats and lizards.

In the post-human world, "local creatures" take on new meaning.

Cities are full of plants that have been brought in from the outside, and will grow beyond where they were planted.

Water hyacinths cover Shanghai's waterways and form thick green carpets

The banks of the Thames in London are overrun with poisonous giant hogweed

Ailanthus fills the streets of New York

Collapsed skyscrapers may add pieces of concrete to the new forest floor, increasing soil acidity and allowing new species of plants to emerge.

The spread of post-human biodiversity extends into the animal kingdom.

Native and exotic plant growth attracts animals to cross the remains of bridges to new environments.

The infrastructure left behind by humans can be a help or a disaster for animals.

Cockroaches continue to thrive in tropical environments, but without human heating, urban cockroaches die in two winters.

Many domesticated animals cannot survive without humans, and only some of the adaptable pigs, dogs and feral cats survive.

Conversely, the absence of light pollution saves billions of birds each year because the flashing lights of radio towers and high-voltage power lines impede their migration.

Mosquitoes use rubber tires as hotbeds and multiply endlessly. Rubber tires will last for about a thousand years.

As fauna and flora thrive, the Earth's climate gradually recovers from millennia of human influence.

Within 35,000 years, plant cycling will clear the soil of all traces of industrial lead. It will take about 65,000 years for carbon dioxide to return to pre-human levels.

But millions of years later, we still see remnants of humanity.

Carved in solid granite, the Mount Rushmore statue is 7.2 million years old.

Bronze statues retain their shape even after 10 million years due to their chemical composition.

Buried deep underground, the remnants of once-floodplain cities are long preserved as technological fossils.

Eventually, even such traces will disappear from the surface of the earth.

Humans weren't always there, they won't be there forever

But exploring a world without humans will give us a better understanding of the world we live in today.

In 426 B.C., the comedy "The Babylonians," written by the young poet Aristophanes, won first prize at the annual Athenian theater festival.

But his portrayal of Athenian deeds in the Peloponnesian War caused controversy, after which a politician named Creon sued Aristophanes in court for defaming the Athenian citizens in the presence of foreigners.

Aristophanes got his revenge two years later with a play called The Knight.

In the play, Cleon is blatantly ridiculed and ends up working outside the city as a humble sausage seller.

This kind of satirical drama was possible because of the liberal democracy of Athens in the fifth century B.C.E., and it is now called "old comedy."

Aristophanes' play is the world's oldest surviving comedy, full of parodies, songs, gossips and surreal fantasies.

It's often portrayed in crazy situations, where the hero rides a dung beetle to heaven, or throws nets around the house and traps his father inside, beating the audience's expectations.

Old comedies shaped the writing and staging of later comedies.

The word comedy, derived from the ancient Greek words komos, meaning revelry, and oide, meaning singing, differs in many ways from its companion art form, tragedy.

Ancient Athenian tragedies deal with the downfall of high-ranking and powerful figures, and comedies usually have happy endings.

Whereas tragedies almost always borrowed plots from legends, comedies dealt with contemporary events.

Aristophanes' comedies glorified ordinary people and denounced those in power.

The targets were arrogant politicians, war-loving generals, conceited intellectuals -- the very people who took their seats right at the front of the stage, so everyone could see their reactions.

As a result, they came to be called "those who are mocked in comedy."

I pursued the responsibility and questioned the way the city administration should be.

One event in particular inspired many writings: the Peloponnesian War between Athens and Sparta.

In "Peace," written in 421 B.C., a middle-aged Athenian citizen frees a woman who personifies peace from a cave after she's been exiled by profiteering politicians.

Then, following the crushing defeat of the Athenian navy in 411 BC, Aristophanes wrote The Peace of Women.

In this play, war-weary Athenian women go on a sex strike to force their husbands to end the war.

In other plays with similar surreal plots, he harshly critiques the situation.

In Socrates' new philosophical school, where our hero Strepsiades enrolls, we learn how to prove that evil is good and that debt is not debt.

No matter how dire the situation, the heroes always win in the end.

Aristophanes was also a master of parabasis, a comedic technique in which the actor speaks directly to the audience, often with tributes to the playwright, or comments and jokes about current affairs.

For example, in "The Birds," Chorus plays various birds and threatens the Athenian judges, saying, "If you don't give our play first place, when I see you in town, I'll poop on you."

The judges didn't seem to find the joke funny, because the play won second prize.

By exploring new ideas and inciting self-criticism in Athenian society, Aristophanes not only made his compatriots the target of laughter, but also dictated the nature of comedy itself.

Known by some scholars as the father of comedy, Aristophanes' influence is ubiquitous in his comedic techniques, ranging from slapstick to bargaining, mimicry, and political satirical drama.

By celebrating free speech and civilian heroes, Aristophanes' plays both made us laugh and raised questions.

In 425 B.C., he said to Creon that he still resonates today: "Because I am a comedian, I speak justice, no matter how painful it may be to you."

What I'm going to talk about was very important to [architect Louis] Kahn. How do you find out what's special about a project?

How can we find the uniqueness that people have in a project?

Because I think finding this originality means responding to the tide of globalization. Being special is at the heart of finding the uniqueness of a place, the uniqueness of an architectural program.

Take Wichita, Kansas, for example. A few years ago, I got a job designing a science museum, which was downtown on the river bank.

And I wanted to think about architecture at this location as part of a river.

Unfortunately, the land was separated from the river by McLean Street, so I suggested, "Let's make a detour on McLean Street."

(Laughter) The detour took six months.

The first picture I showed the building committee was this Jantar Mantar Observatory in Jaipur, because we were talking about what a science museum looks like.

I believe that this structure -- complex and rich, yet perfectly rational and a kind of tool -- is related to science, and I think architecture about science is different and unique and should speak to science.

So in my first sketch, I suggested, "Well, let's fork the river and build an island in between."

And when I came back in high spirits, they all looked at me with confused eyes and said, "Is it an island?"

This was an island -- called Ackermann Island -- and the river was filled in during the Depression to promote employment.

(Laughter) Now, when the process begins, people say, "You can't put everything on the island. You have to be nice to the community, so you have to move a little bit to the mainland."

So here's the design that emerged: the galleries are clustered into islands, and you can move between them and along the roof.

There are also other fun tricks, and if you enter from the building on the mainland side, you can go through the exhibition room and go to the playground with a nice view.

Or if you're stingy, you can walk over the bridge to the roof, look into the exhibits for free, be enthralled, and then pay the $5 admission fee and come back to see the exhibits again.

(Laughter) The client was kind of happy, we went over budget by about 500 million yen, but he was happy.

But I was still unsatisfied because I felt too capricious.

It was a complicated design, but there was something whimsical about it.

It was kind of just a constructive complexity. If you wanted to realize the ideals I was talking about, you had to have architecture for science, something with some kind of idea-generating geometry.

This results in a torus-shaped geometry, with land-side buildings deep in the center, while island-side buildings are hollow in the center.

For those of you who don't know what a torus is, it's the shape of the surface of a donut or bagel.

This shape has given rise to many variations in design and scalability, and the design has evolved based on its relationship with the exhibit.

And the building - this is the design model

When budget complaints came up, I said, "The island is worth it, because you get double what you pay for, because it's reflected in the water."

This is what it looked like on the day it opened, a view of downtown from the river side and a view of downtown.

A bike path cuts through the buildings, so if you ride along the river, you'll see the exhibits and be drawn to the buildings.

The torus shape makes the architecture very efficient, and the beams in this building are all the same thickness and made of laminated wood.

Each concrete wall withstands stress and supports the building.

Every component of the building works

These galleries are flooded with light from the sky, and this is the opening day at night.

Back in 1976

(Applause) In 1976, I was asked to design a children's memorial for this location in the Holocaust Memorial at Yad Vashem in Jerusalem.

I was asked to design a building, and I was given the children's clothes and paintings.

I feel so depressed

I worked on it for months, and I didn't feel like it, because people who go to historical museums come out with a lot of information.

So we put forward the idea instead, "Let's leave the building out." There was a cave there, so we dug a tunnel in the hill and went down through the rocks to the underground chamber.

There's a room with photographs of dead children, and then you go out into a large open space.

In the center, the light of a single candle flickers, and the mirrors reflect it infinitely in all directions.

As you walk through the space, a voice reads out the children's names, ages and birthplaces.

No repeats for 6 months

If you keep going north towards the light, you'll be back in the real world.

People say, "Nobody understands, you'll think it's like disco, you can't do this"

The project was shelved and sat there for 10 years. One day, Abe Spiegel came from Los Angeles, and he had lost his three-year-old son in Auschwitz.

Many years later, in 1998, during my regular trip to Jerusalem, I got a call from the Ministry of Foreign Affairs, saying, "The Prime Minister of Punjab is here.

This was an official visit, and I took you to Yad Vashem, and I saw the Children's Memorial and was very moved.

The architect wants to see you. Will you come visit me in Tel Aviv? ”

When I rushed over, Prime Minister Badal said, "We Sikhs also suffered greatly, just like the Jews.

I was very moved by what I saw today.

We're about to start building a national memorial to tell the story of the Sikh people.

I want you to come to India and design.”

It was the kind of story that I couldn't take too seriously.

Two weeks later, I found myself in a small town called Ananpur Sahib, on the outskirts of Chandigarh, the capital of the Punjab, where there was a temple and next to it was the fortress where former Sikh leader Guru Gobind died, where he was writing the khalsa, the sacred text.

When I got to work, they took me nine kilometers away from the city and the temple and said, "This is where we're going to build."

I said, "I don't understand

Hundreds of thousands of pilgrims will come There's no way everyone can come to this place by truck or bus

Let's go back to town and walk here."

And from that hill to this hill, he advised me to walk through the road that leads to the city.

Things are easy in India, and in less than a week, new land was bought and work began.

(Laughter) My proposal is to divide the museum into two halves -- one with the permanent galleries, and the other with the auditorium, the library, and the temporary galleries, and in that valley we'll develop a water garden that connects all of this to the fort and then to downtown.

The structure rises from a sand quay – made of concrete and sandstone. The roof is made of stainless steel and faces south, reflecting light towards the temple.

Approached from the north, stone architecture rises from the sandy cliffs, while coming from the Himalayas, it is reminiscent of ancient fortifications.

After that, I left for four months, but when the groundbreaking ceremony was held, I said I would be back.

Look at this little design model I made, magnified 10 times, and it's released to the public, and it's already got a bridge!

(Laughs) Just as I drew it!

About 500,000 people gathered for the celebration, and we can see foundation work beginning on the site.

I was given a new name, Safdi Singh, which is currently under construction with 1,800 workers and is expected to be completed within two years.

I'm going back to Yad Vashem three years ago. After what I said earlier, Yad Vashem decided to rebuild this history museum from the ground up, with a much more comprehensive Washington Holocaust Museum in terms of information.

Yad Vashem now attracts 3 million visitors a year.

They say, ``Let's rebuild the good museum.''

But if you're a Sikh, you can start working right away, but if you're a Jew, it's not so easy.

(Laughter) Once again, I found myself uncomfortable with the idea of ​​a museum the size of a Washington, D.C. museum -- a 4,600-square-foot building perched on a hill with weak ground -- into a gallery with doors -- a run-of-the-mill gallery -- and the idea of ​​seeing an exhibition of the Holocaust.

So I proposed a plan to cross the mountain, and this is the first sketch.

The whole museum traverses through the mountain -- you enter on one side of the mountain, you exit on the other, and the daylight passes through the mountain into the room.

Here's the design model The building at the entrance and the underground car park

After crossing the bridge, you enter an 18-meter high triangular chamber that crosses the hill and extends north.

All the exhibition rooms are underground, and you can see the openings for daylighting.

At night there's only a single ray of light that cuts through the mountain's surface, the light from the skylight at the top of the triangle.

You walk into the galleries, and it's all under the hillside.

Rock gouged chambers are made of concrete walls, stone or natural rock, with light control shafts where possible.

This is a Spanish quarry, and the design of the gallery was inspired by this.

Then, if you keep going north, you'll come to an opening, and the mountain will suddenly open up, and you'll see the light, the city, and the hills of Jerusalem.

Well, let me conclude with a project I've been working on for the last two months.

United States Peace Institute in Washington United States Peace Institute

Opposite the Lincoln Memorial was chosen as the site, the furthest building on the National Mall, bordering the Roosevelt Bridge, the gateway from Virginia.

This was also decided in a competition, and I've just started working on it.

Special attention was paid to the location

If it had just been built somewhere in Washington, it would have been an office building, a conference center, a building that negotiated peace, but the choice of location in the mall, next to the Lincoln Memorial, made this building a symbol of peace in the mall district.

Well, there were many issues.

If you look at the first design, there's a lot of space in the building -- spaces for museums, laboratories, conference rooms, public buildings, etc., aimed at achieving peace.

This building is in a series of buildings in the mall district, and it's so transparent that it invites you to come and go inside.

When you go inside, you can see the town wherever you turn.

I felt that this building should be associated with, in the words of [Milan] Kundera, "lightness of being," guiltlessness, a kind of dynamic quality, optimism.

It's like this now, it's like it's evolving

This is a sketch of the structure of the roof, and this roof may need a new material to make it white, translucent, shiny, and not whimsical.

It's a 3D sketch, but I'm trying to give it some kind of order and structure, something that you don't feel like changing a little bit in the design process.

Please look

To conclude

(Applause) I'd like to conclude by tying everything I've said so far to the word "beauty."

It's not a very fashionable word these days, and I'm sure it's the same in an architecture class, but it seems to me that all of these designs are quests for beauty anyway.

Beauty is found as the most profound form of fit

To quote my favorite quote from 1917 by the morphologist Theodore Cook, "Beauty means humanity.

We say that things in nature are beautiful because we see in them form -- fit, the perfect realization of function."

You might describe it as a perfect realization of purpose.

But beauty has to be a kind of adaptation, an expression of all the forces that are related to the natural environment, as well as the man-made environment.

Twenty years ago, I was at a conference with Richard, and I wrote a poem, which I still believe is true.

"Those who seek truth will find beauty, and those who seek beauty will find ostentation.

Those who seek order find contentment

Those who seek satisfaction will find despair

Those who serve their friends will find the joy of self-expression, and those who seek self-expression will fall into the abyss of arrogance.

Arrogance is incompatible with nature

Through nature, the essence of the universe, and human nature, we seek truth, and those who seek truth will find beauty."

Thank you. (Applause)

I grew up with an identical twin, a loving brother.

One of the characteristics of people born as twins is that they are masters at finding favoritism.

I questioned that my brother's cookies were even slightly bigger than mine, though I wasn't starving myself to death at all.

(Laughter) As a psychologist, I became aware of another kind of favouritism: that we value the body far more than we value the mind.

I went to college for nine years to get my doctorate in psychology, and I can't tell you how many people who have seen my business card have said, "I'm not a psychologist or a real doctor," as if it said so on their business card.

(Laughter) The body-over-mind preference is seen everywhere.

I was at a friend's house recently, and a five-year-old was getting ready for bed.

I was brushing my teeth on a stool at the washbasin when I slipped and scraped my leg.

He cried a little, but then he got up, got back on the stool, took out a box of Band-Aids, and put one on the wound.

Even children who were too young to tie their shoes knew that they needed to protect their wounds so they wouldn't get infected, and they needed to clean their teeth twice a day.

We all know how to take care of our physical health and maintain dental hygiene, right?

we've known it since we were five years old

But what do you know about mental health care?

i don't know at all

What are we teaching our children about emotional hygiene?

absolutely nothing

Why do we spend time caring for our teeth but not for our hearts?

Why is physical health so important, but not mental health?

Our minds get hurt more often than our bodies, like failure, rejection, loneliness.

Such hurts can be exacerbated when ignored and can have a dramatic impact on our lives.

Even though we can treat this kind of trauma using scientifically proven techniques, we don't.

i don't even think i should

"Ah, are you depressed? Don't worry about it. That's how you feel."

Would you say that to someone with a broken leg? "Ah, try walking. That's how you hold your legs."

(Laughter) Now is the time to close the physical and mental health gap.

It's time to treat them more equally, like twins.

Speaking of twins, my brother is also a psychologist.

So he's not a real doctor either.

(Laughter) We weren't working together.

In fact, the hardest thing in my life so far was moving across the Atlantic to New York City to get my doctorate in psychology.

We were separated for the first time in our lives and this was a hard time for both of us.

But while my brother was still with his family and friends, I was alone in my new country.

We missed each other terribly, but international calls were very expensive back then, and we could only talk for five minutes a week.

My birthday is approaching.It was the first birthday we spent separately.

That week, I decided to take the plunge and speak for 10 minutes.

I walked around the room that morning, waiting for my brother to call me, and I waited, waited, and the bell never rang.

Given the time difference, I guessed, "OK, I'm out with my friends. I'll call you later."

We didn't have mobile phones back then.

but there was no phone

I've slowly come to realize that after 10 months apart, my brother doesn't miss his partner anymore, unlike me.

I thought I would get a call by noon, but that night turned out to be the saddest and longest night of my life.

wake up the next morning

I looked down at the phone and realized that I had kicked the phone the other day while walking around.

I rolled out of bed and the bell rang as soon as I put the phone back on.

It was my brother.

(Laughter) For him, that night was the saddest and longest night of his life.

When I tried to explain the situation, he said, "I don't understand, if you don't call me.

Why don't you call yourself? ”

Of course, why didn't you call me?

I didn't know the answer at the time, but now I know the answer.

It's simple - loneliness.

Loneliness inflicts deep wounds, distorts one's perceptions and confuses one's thoughts.

I believe that people don't take care of me more strongly than I actually do.

I get so scared to relate to people because I'm afraid they might reject me or hurt me because my heart is already in such pain that I can't take it anymore.

At the time, I had a feeling of true loneliness.

Loneliness is defined purely subjectively.

What defines loneliness is the lack of emotional or social connection.

and i was missing it

There's a lot of research on loneliness, and it's all terrifying.

Loneliness not only makes people sad, it can even kill them.

I'm not kidding

Chronic loneliness increases the chance of premature death by 14%

loneliness causes high blood pressure and high cholesterol

Loneliness even suppresses the functioning of your immune system, making you vulnerable to all sorts of diseases.

In fact, taking them all together, scientists have concluded that chronic loneliness poses as much of a risk to long-term health and lifespan as smoking.

A pack of cigarettes has a warning: "Could kill you."

But that's not the case with loneliness, is it?

That's why it's so important to take your mental health more seriously. Practice emotional hygiene.

Even if you try to treat the wounds in your heart, if you don't know that you have wounds, there's nothing you can do about it.

Loneliness isn't the only thing that hurts, distorts perception, and misleads.

so is failure

I once visited a nursery school, and there were three children playing with the same toy.

When you slide the red button, a cute puppy pops out.

One girl pulled and pushed a purple button and then stepped back to look at the box, her lower lip was trembling.

The boy next to her saw this, and when he turned to his box, he didn't even touch it and started crying.

After a while, another girl did everything she could think of, and finally she slid the red button, and a cute puppy jumped out, and she was overjoyed.

Three children given the same toy, but their reactions to failure were very different.

The first two definitely had the ability to slide the red button.

The only thing that stopped them from succeeding was that their minds made them believe they couldn't.

Adults also fall for the same tricks all the time.

In fact, there are certain emotions and beliefs that we all invariably hold whenever we encounter frustration or a dead end.

Do you know how your mind reacts to failure?

you have to know

Because if your mind tries to convince you that you're not capable, and you believe it, you'll be like those two kids, feeling helpless and quickly giving up trying or even trying.

And you'll become more and more convinced that you can't succeed.

That's why so many people aren't reaching their full potential.

Because if you follow this path, even one failure will persuade you to believe that you can't succeed.

Once you believe something, it's very difficult to change.

I learned it the hard way as a teenager with my brother.

A friend and I were driving down a dark road at night when a cop stopped the car.

There was a robbery in the area, and we were looking for a suspect.

The police approached the car and shone a flashlight on the driver, then on my brother in the passenger seat, and on me.

He opened his eyes and said, "I saw your face somewhere..."

(Laughter) I said, "It's the passenger seat."

(Laughter) But he didn't get it at all. He thought I was doing drugs.

(Laughter) So they dragged me out of the car, gave me a body check, and dragged me to the police car, and they finally confirmed that I had no criminal record, even though I could have shown my twin brother in the passenger seat.

Even as we drove away, the look on his face showed that he was sure I was hiding something.

The mind is hard to change once you believe in something

So it's perfectly natural to feel depressed and frustrated when you fail.

But don't let yourself believe that you can't succeed.

I have to fight the feeling of helplessness

you have to control the situation

And this kind of vicious cycle has to be broken first.

Mind and emotions aren't as reliable friends as we think

They're really moody, and one minute they're going to be a big support, and the next they're really badass.

I once worked with a woman who, after 20 years of marriage and a horrific divorce, finally got her first date.

I met the man online and he was nice and promising and most importantly he seemed to have a crush on her.

So she got really excited, bought some new clothes, and we met at a fancy bar in New York.

Ten minutes into the date, the man got up and said, "I'm not interested." And then he left.

rejection is extremely painful

The woman was so hurt and unable to move that she could only call a friend.

The friend said, "Well, what are you expecting?

You have a big butt and you can't say a single funny thing

Do you think such a handsome and promising man would date a loser like you? ”

I'm shocked. You did such a terrible thing to a friend?

But when I say this, it's a lot less shocking. It wasn't my friend who said this.

that's what this woman said to herself

This is what we all do, especially after being rejected.

I started to think only about my own failures and shortcomings.

i'm talking to myself

We all do this, even if it's not that outrageous.

The funny thing is, it's because your self-esteem is already damaged.

Why do we try to hurt it more?

If it's a physical wound, I wouldn't intentionally aggravate it.

You wouldn't cut your arm and say, "Oh, I know, I'll see how deep I can cut with a knife."

But that's what we do all the time with heartbreak.

Why you ask? Because we neglect emotional hygiene.

Because we don't prioritize mental health

We know from dozens of studies that people with lower self-esteem are more vulnerable to stress and anxiety, and that failure and rejection hurt more and take longer to heal.

So when you get rejected, the number one thing you should do is restore your self-esteem, instead of punching people like in the movies.

When you're feeling hurt, treat yourself with kindness, just like your best friend would.

You have to recognize your unhealthy mental habits and change them.

Rumination is the most unhealthy and common habit

Rumination is chewing over and over

When my boss yells at me, when my professor makes fun of me in class, when I get into a big fight with a friend, I can't help repeating that scene in my head for days, sometimes weeks.

It's easy to become addicted to ruminating on these upsetting events, and it comes at a very high cost, because so much of your time is spent focusing on upsetting, negative thoughts, and you're putting yourself at great risk for depression, alcoholism, eating disorders, and even cardiovascular disease.

The problem is that the urge to ruminate is so strong that it makes you think it's important, and that's why it's so hard to break this habit.

I know this to be true, because a little over a year ago I had this habit.

My brother was diagnosed with stage 3 non-Hodgkin's lymphoma.

his cancer was very aggressive

Tumors appeared all over the body

he had to start a painful chemo

I couldn't help but think about what he was going through.

I couldn't help but think about how he was suffering, though he never once complained.

It was an incredibly positive attitude.

I was surprisingly mentally healthy.

I was physically healthy, but mentally I was a mess.

But I knew what to do

Studies show that distracting yourself, even for two minutes, helps, and that moment frees you from the urge to ruminate.

So whenever I was overwhelmed by anxiety, turmoil, or negative thoughts, I tried to focus on other things until the urge passed.

Within a week, my outlook changed, I became more positive and more hopeful.

Nine weeks into chemo, my brother had a CAT scan, and I was by his side when he heard the results.

all tumors were gone

It took three more rounds of chemotherapy, but we were confident of recovery.

This photo is from two weeks ago

By taking action when you're alone, by changing your response to failure, by protecting your self-esteem, by confronting negative thoughts, you can not only heal your wounds, but you can develop emotional resilience and grow.

A hundred years ago, people became more conscious of hygiene, and life expectancy increased by more than 50 percent in just a few decades.

I believe that emotional hygiene is necessary for any significant improvement in quality of life.

Can you imagine a world like this? What if everyone was psychologically healthier?

What if you didn't feel so lonely and depressed?

What if you knew how to overcome failure?

What if you started loving yourself more and becoming more confident?

What if you could be happier and more fulfilled?

I can imagine that's the world I want to live in

That's what my brother wants

If you gain knowledge and change a few simple habits, you will have a better world to live in.

thank you

(applause)

how to explain something that is difficult to explain

This question has inspired myths, religious practices and scientific inquiry.

But Chinese Zen monks from the ninth to the thirteenth centuries asked a different question: Why do we need to explain?

For the monks blindly seeking answers was a vice to overcome, and learning to accept the mystery of existence was the true path to enlightenment.

But it's hard to resist the desire to unravel the mystery.

So in order to practice while coexisting with these mysteries, monks use a collection of about 1,700 confusing and ambiguous philosophical thought-experiment questions called koan during meditation.

"Gongan" in Chinese means "public record or case"

But unlike actual court records, koans are meant to be incomprehensible.

Unexpected, unrealistic and often contradictory

On the surface, it describes maxims about the Zen precepts, such as living without physical and mental attachments, avoiding dualistic thinking, and realizing one's true Buddha nature.

By presenting these doctrines as illogical anecdotes, we can challenge monks in a practice that coexists with ambiguity and contradiction.

Bewildered by these puzzling cases, monks were able to meditate and make the teachings of Buddhism their own and put them into practice.

Hopefully, we can let go of the quest for the only true answer and reach a spiritual awakening.

Koans are intentionally made difficult to explain, so people tend to misunderstand that they should be deciphered from anecdotes on their own.

But, as monks of the past did, we too may ponder these anecdotes together, exploring how difficult simple explanations are.

Consider one of the koans, the practice of non-attachment.

Monks Tanzen and Ekid are walking along a muddy road

Beyond that, a beautiful traveler was unable to cross the road

Tanzen politely offers his help, carries the traveler on his back, crosses the road, and lets her down without a word.

Echid was surprised

According to the precepts, monks should not approach women, nor should they touch unfamiliar beauty.

After walking for a while, Ekid lost control.

"How could you carry that woman?" Tanzen smiled. "I left a traveler behind. Are you still with her?"

However, according to the popular interpretation, Ekid did not physically carry the traveler, but psychologically he showed an obsession with women and broke the precepts.

Conflicts of this type—those that examine the vague boundary between the letter and spirit of precepts—are common in koans.

In addition to delving deeper into ambiguity, many koans ridicule the characters' stupidity, stating that they have a complete understanding of the world around them.

One example is the story of three monks arguing about a temple flag fluttering in the wind.

The first monk says the flag is moving, while the second says it's not the flag moving, it's the wind blowing.

While they were fighting, a third priest stepped in. "It is not the flags that are moving or the wind that is blowing. It is your mind that is swaying."

However, both monks are caught up in their own "answers" and are unable to see the other's perception, thus violating the elimination of dualistic thinking, which is the essential ideal of Buddhism.

The third realizes that the argument is about cognition, and neither monk sees the big picture.

Of course, these interpretations are only clues for working on the koan.

Not even the wisdom of the monks of old, even the previous characters who should have been wise, can't find the answer for you.

Because the purpose of a koan is not to lead to a simple answer.

It challenges the answer-seeking mind - in the act itself, in the understanding itself, in the face of contradictory mysteries.

In the mid-1990s, the U.S. Centers for Disease Control and Prevention and Kaiser Permanente found that exposure dramatically increased the risk of seven of the top 10 causes of death in America.

At high exposures, it affects brain development, the immune system, the hormonal system, and DNA reading and transcription.

People who are heavily exposed to it have a threefold lifetime risk of heart disease and lung cancer, and are expected to lose 20 years of their life expectancy.

But today's doctors aren't trained in routine screening and treatment for it.

The dangers I'm about to talk about aren't pesticides or chemicals.

it's childhood trauma

What kind of trauma are you talking about?

It's not about failing an exam or losing a basketball game.

What I'm talking about is a very serious and pervasive threat that literally frustrates us and alters our physiology: suffering from abuse and neglect, suffering from mental illness and growing up in a drug-addicted parent.

For a long time, I looked at things the way I was trained to see them: social problems were left to social welfare, mental health problems to mental hospitals, and so on.

And then something happened that made me rethink my whole approach.

When I finished my residency, I decided to go to a place where I was really needed, a place where I could demonstrate my abilities.

So I went to work at California Pacific Medical Center, the best private hospital in Northern California, and at the same time I decided to open a clinic in Bayview Hunter's Point, one of the poorest and most underserved neighborhoods in San Francisco.

Now here's the thing, there was only one pediatrician in Bayview, and there were over 10,000 children, and we put up a big billboard and were able to provide the highest quality care, regardless of ability to pay.

It worked very well. We aimed to close the classic health inequalities, which was to increase the rate of hospitalization, the rate of vaccination, the rate of hospitalization for asthma, and we achieved all those numbers.

we were so proud of ourselves

But then I started noticing a disturbing trend.

Many children were referred for attention deficit hyperactivity disorder, or ADHD, but in fact, after a thorough history and a thorough examination, ADHD was not diagnosed in most of the patients as a result.

The kids I was seeing had been through so much trauma that somehow they had missed something important.

Somehow I had missed something important.

Before my residency, I did a master's degree in public health. One of the things they teach you in public health classes in school is this: If you were a doctor and you saw 100 children who were drinking from the same well, 98 of them would have diarrhea.

So I got my hands on and started reading everything written about how exposure to unfortunate events affects a child's brain and body.

And then one day, a colleague walked into the doctor's office and said, "Dr. Burke, have you seen this?"

What he had in his hand was the Adverse Childhood Experience (ACE) Study.

From that day on, my clinical practice and even my career changed.

The ACE Study is what everyone needs to know about its content.

It's a study done by Dr. Vince Ferritti of Kaiser and Dr. Bob Anda of the CDC, who together asked 17,500 adults about their childhood experiences of adversity.

These included physical and emotional as well as sexual abuse, physical and mental neglect, parental mental illness, substance abuse, incarceration, parental separation and divorce, and domestic violence.

Add points to the ACE score for all "yes" answers

So they correlated that ACE score with health outcomes.

the results were amazing

Two things: the first is that ACEs are very frequent.

67% of the population has at least one ACE, and 12.6%, or one in eight people, has four or more ACE scores.

Second, there is a dose-response relationship between ACE and health outcomes, meaning that the higher the ACE score, the worse the health outcomes.

People with four or more ACE scores are 2.5 times more likely to develop chronic obstructive pulmonary disease (COPD) than those with zero ACE scores.

And for hepatitis, it's 2.5 times the risk.

Depression is 4.5 times

Suicidal thoughts were 12 times more likely

People with an ACE score of 7 or more have a three-fold lifetime risk of lung cancer and a three-and-a-half-fold higher risk of ischemic heart disease, the leading cause of death in the United States.

Of course this makes sense

Some of you will look at this data and say, "Wait a minute.

Maybe you had a rough childhood, and you were prone to drinking and smoking, and you're doing things that hurt your health.

This isn't science, it's just bad practice."

But this is exactly what science is about.

We have a better understanding of how exposure to painful experiences at an early age affects the development of a child's brain and body.

It affects areas of the brain that are thought to be responsible for drug addiction, such as the nucleus accumbens, responsible for the pleasure and reward parts of the brain.

It inhibits the frontal cortex, which is necessary for the ability to control and integrate impulses, and is a critical area for learning.

MRI scans of the brain show distinct differences in the amygdala, the region that responds to fear.

So there's a clear neurological reason why exposure to painful experiences makes us more likely to engage in high-risk behaviors, and that's the point.

But even if you don't engage in high-risk behaviors, you're still susceptible to heart disease and lung cancer.

The reason for this has to do with the hypothalamic-pituitary-adrenal system, the stress response system in the brain and body that governs our fight-or-flight response.

how does it work

Well, let's say you walk in the woods and meet a bear.

Immediately, the hypothalamus sends a signal to the pituitary gland, which in turn sends a signal to the adrenal glands to say, "Release stress hormones! Adrenaline! Cortisol!"

So your heart beats faster, your pupils dilate, your airways widen, and you're ready to either fight the bear or run away.

That's amazing! If you meet a bear in the forest

(Laughter) But the problem is, what happens when you see a bear in your house every night? This system is activated over and over again, and it goes from adapting and saving lives to being maladjusted or unhealthy.

Children are especially sensitive to this repetitive activation of stress, because their brains and bodies are just developing.

Severe adversity not only affects the structure and function of the brain, but it also affects the developing immune system, the hormonal system, and even how DNA is read and transcribed.

With this information, I discarded the knowledge I received in my clinical training because I realized that once we understood the mechanisms of disease and what was wrong, it was our job as physicians to use science for prevention and treatment.

that's what we should do

So we founded The Center for Youth Wellness in San Francisco to prevent, test, and treat the effects of ACE and toxic stress.

We used routine physical examinations as a general screening test for all children, because we found that patients with four ACE scores were 2.5 times more likely to have hepatitis and COPD than those with zero ACE scores, 4.5 times more likely to be depressed, and 12 times more likely to attempt suicide than those with zero ACE scores.

I saw a patient like that in my office, and I knew that.

For patients who test positive, we have assembled a multidisciplinary treatment team that seeks to reduce their exposure to trauma through holistic interventions that include home visits, treatment coordination, mental health, nutrition, and medications when needed, to treat both physical and mental symptoms, and to reduce exposure to trauma.

Just as parents cover electrical outlets and watch out for lead poisoning, we educated parents about the effects of ACE and toxic stress. We created treatment plans that recognized that people with asthma and diabetes also needed more aggressive treatment because they were already making huge changes to their hormones and immune system.

And the other thing that comes with understanding this is that it makes you want to shout it from the rooftops, because it's not just a problem with the Bayview kids.

I thought that as soon as everyone else heard this, they would be doing a general screening, a multidisciplinary treatment team, and the most effective course of treatment would start immediately.

that didn't happen

it was a big lesson for me

What I originally thought was simply the best clinical treatment, I now think is exercise.

In the words of Dr. Robert Block, former president of the American Academy of Pediatrics, "ACE is the single biggest unaddressed public health threat facing our nation today."

And for many people it's a terrifying possibility.

The scope and scale of the problem is so vast that it can be overwhelming to think about how to approach it.

But to me, there's actually hope in that, because if we do the right thing, and recognize this as a public health crisis, then we can start using the right tools to find a solution.

From tobacco to lead poisoning to HIV/AIDS, the United States has a very impressive track record of actually tackling public health problems, but similar success with ACE and toxic stress depends on determination and motivation. When I look at my country's reaction so far, I wonder why we didn't take this more seriously?

At first, we thought we had taken the issue out of the mainstream, because it didn't apply to us.

That's the problem with those kids in that neighborhood.

Strangely enough, the data don't support that fact.

The original ACE study was conducted among a population of 70% white, 70% with higher education.

But then, the more I talked to everyone, the more I started to think I was thinking the opposite.

If you were to ask anyone here if they grew up in a family that suffered from mental illness, I'm sure a few people would raise their hands.

If there is a parent who is a heavy drinker, or who truly believes that scorning the whip will ruin the child, I'm sure there will be more hands raised.

Even in this room, this affects many of us, and I've come to believe that this is an underestimated problem because it's about us.

If it's about other districts, maybe it's easier to see if you look at their own real problems.

It may not matter if you leave it alone and get sick

Fortunately, scientific advances and, frankly, economic facts make it difficult to turn a blind eye to the facts.

The science is clear: childhood trauma affects health for life.

Today, we're starting to understand how to prevent an unfortunate childhood event from leading to illness and premature death. And 30 years from now, a child with a high ACE score whose behavioral symptoms go unrecognized, a child whose asthma management is not linked to ACE, who develops hypertension and early heart disease and cancer will be as unusual as a person with HIV/AIDS dying at six months old.

People will look at this situation and say, "What the heck happened here?"

this can be treated

We can overcome this

The most important thing today is to have the courage to look at this issue up close, and to acknowledge that it's real and that it's a problem for all of us.

I believe we can make waves

thank you

(applause)

As an Arab female photographer, my personal experiences inspire my projects in abundance.

I was able to overcome the obstacles to a better life because of my passion for knowledge, which is the driving force behind my project, "I Read I Write."

Encouraged by my own experience of being denied access to higher education at first, and questioning the obstacles they faced, I decided to seek out and document the stories of women whose lives have been transformed through education.

I've dealt with a lot of things about women's education, but I've tried to keep in mind the differences between Arab countries due to economic and social factors.

Some of the issues covered include the region's extremely high female illiteracy rate, education reform, programs for students who have fallen behind, and students trying to change politics.

When I started this project, it was not easy to get women to work with me.

I had to convince them, "Your story will change other women's lives," or "You're going to be a role model in your community."

As we worked together to capture how they looked at themselves, I asked them to write their own words and thoughts on the photographs of themselves.

I even showed these pictures in class to inspire and motivate other women in similar situations.

Aisha, a teacher in Yemen, writes, "I sought education so that I could be independent and not have to rely on men for everything."

One of my first subjects was Umm El-Sayed in Egypt.

When we first met, I couldn't even write my name satisfactorily.

She was attending a nine-month literacy course run by a local NGO outside Cairo.

Months later, she joked that her husband was threatening to pull her out of class because she was afraid that her cell phone would be checked.

(laughs) Naughty Umm El-Sayed

Of course, that's not why she attended the course.

I could see her desire to be more in control of everyday things, like counting at the market or helping her kids with their homework, the little things we take for granted.

Despite the poverty and the local climate of disrespect for women's education, she and her Egyptian classmates aspire to become literate.

In Tunisia, I met Asma, one of four activists I interviewed.

A non-religious bioengineering student who is very active on social media.

In a country that won a big victory called the Arab Spring, she said, "My dream was to discover a new species of bacteria.

After the revolution, that happens every day."

Asma refers to the religious fundamentalists rife in the area, which are also particularly stumbling blocks for women.

Of all the women I met, I was most moved by Faiza from Yemen.

Faiza dropped out of school when she was eight and was forced to marry.

That marriage lasted only a year

At 14, she was the third wife of a 60-year-old man, and at 18, a divorced mother of three.

Despite her poverty, despite her status as a divorced woman in an ultra-conservative society, despite her parents who were against going back to school, she knew that the only way she would be able to take control of her life was to get an education.

she is 26 now

I'm studying business at university with the help of a local NGO.

Her goal is to find a job and rent a place to live with her children.

Arab countries are going through tremendous changes right now, and women are facing overwhelming challenges.

Like the women I've photographed, I had to overcome many obstacles to become the photographer I am today.

Umm El-Sayed Asma Faiza and many other women in the Arab world have shown us that it is possible to overcome barriers to education, and they know it is the best way to a better future.

I would like to end with the words of Yasmin, one of four activists I interviewed in Tunisia.

She wrote, "Questioning your own assumptions

Be the person you want to be, not the person others want you to be

Don't accept being a slave, because your mother gave birth to you free."

thank you

(applause)

I have several specialties

As a scientist, I've been Commander of NASA's Mars simulation crew since last year, and as an artist, I've created art for multicultural communities around the globe.

More recently, we've been integrating the two.

But first, let me tell you a little more about NASA's missions.

Hawaii Space Exploration Simulation (HI-SEAS) Project

HI-SEAS is a NASA-funded simulated planetary surface experience at Hawaii's Mauna Loa volcano.This research program was designed specifically to study the effects of long-term isolation for a small crew.

I lived in this dome for four months with a crew of six people, and of course it was a very interesting experience.

we did all the research

My main research topic is food, but I've also done a lot of other research besides food, like creating new food systems for astronauts in the depths of space, and everything else.

As you can see here, I did spacewalks in full-scale spacesuits, but I also had a lot of other little bits and pieces of work, like a survey at the end of the day.

It's a very, very busy job.

As you can imagine, living alone in a small space for a long period of time can be very difficult.

There are all sorts of mental challenges: how to maintain a team in this environment, the time distortions that people experience in such an environment, how to deal with sleep disturbances, for example.

But I learned a lot

I've learned a lot about how individual crew members overcome situations like this, how to keep them productive and happy, for example, giving them a lot of autonomy is one of the good solutions.

And this mission made me think more deeply about the future of humanity in outer space.

Humans will go out into space and start living in space.

i'm sure so

It may take 50 years, it may take 500 years, but the time will definitely come someday.

Well, I came up with a new art project called Seeker.

The Seeker project is about aspiring groups around the world coming up with prototype spacecraft for human life and survival.

that's the core of the project

There's one important thing here. This is not an anti-utopian project.

It's not like, "God, the world is going the wrong way. We need a different future in another place, so we're leaving."

No no

Basically, this project is about getting people to step outside the constraints of the planet and reimagine our future.

This project is really useful and very successful, so this is a really important part of our work.

Now, in this project, I'm using a co-creative approach, which is a little different than what you might imagine from most artists.

I throw a basic idea into a group or community, people are drawn to it, and then we co-conceive and build a work together.

It feels exactly like termites

Because we're just working together, sometimes when an architect comes over and sees what we're doing, it's a little bit difficult to understand how to build without a master plan.

We're always proposing giant sculptures that are fantastic and habitable.

The first version was created in Belgium and Holland

Made by a team of almost 50 people

Version 2 of this project was built in a different country, Slovenia, by a new group, and in a different way.

They removed the upper part of the structure, leaving only the base of the work, and created a completely new, more lifelike structure.

Another important aspect of this project is

It's an evolving work, an evolving building.

Here's the latest version, unveiled in Holland just a few weeks ago, using campervans as modules to build a spaceship.

We bought some used caravans, cut them up, and reassembled them into spaceships.

When we think about spacecraft, we're not just dealing with technical issues.

We're thinking about the integration of three systems: ecosystems, people and technology.

That's why projects always incorporate a lot of ecological elements.

As you can see, aquaponic equipment surrounds the astronauts, so they're always in contact with the food they eat.

And what's most typical of this project is that this art and design project is accompanied by a quarantine mission.

We actually lock ourselves in for several days in a row and test what we've built.

For example, the picture on the right shows a quarantine mission at the Museum of Modern Art in Ljubljana, Slovenia, where six artists and designers -- I am one of them -- have been confined to the museum for four days.

Of course, this is a performance in itself, and it's a huge experience for the whole team.

Now, my next project is currently underway with TED Fellow Camilo Rodríguez Beltran in the mysterious land of Chile's Atacama Desert.

First of all, it's thought to be closer to the Mars environment.

The landscape of the actual place looks just like Mars, and it's used by NASA to test its equipment.

And we have a long history of connecting with the universe through star observation.

And now it's home to the giant astronomical telescope ALMA, which was built here.

But at the same time, it's the driest place on earth, and that's what makes our project so interesting, because it happens to require a full sustainability study.

I have no other choice. I'm very interested to see what happens here.

In this particular version of the project, I'm particularly interested in how the team can connect with the local people, the indigenous people.

Indigenous people have been living here for a long time, and you can consider them to be sustainability professionals, so I'm very interested in what we can learn from them, and I want to use their knowledge for space exploration.

We're trying to redefine how we see the future of humanity in outer space, by exploring the integration of biology, technology and people, by using co-creative approaches, by using and exploring local traditions, and thus thinking about what we can learn from the past and applying it to the far future.

Thank you very much

(applause)

it's quite far

I guess this takes practice

First of all, I'm really honored to be here and talk to all of you.

In fact, for the past three years, I've been visiting locker rooms at various colleges, educating boys about the importance of having respect for women.

Just recently, I was invited to a prestigious university, and while I was being shown around the campus, I had a quick chat with them about the problems their athletes had caused.

Four other athletes were accused of raping different women. And two athletes filmed and stood by while a drunken girl was being raped. Knowing all this, one of the chief coaches came out the day after Trump won and started calling, "Women, grab your pussy, this is America."

America like that, I don't know, and the truth is, sexual violence is just one symptom.

The fundamental problem is the set of ideas instilled in these boys about how to treat women face-to-face, in their heads, in conversation.

Now, before we get to the point, there are a few things I would like to disclaim.

First, I will definitely do it.

I'm giving up even if it's going to happen

My head may turn white on the way, so please watch over me warmly.

And when it comes to the stories I'm going to cover, there are some very talented people who have dedicated their lives to it, and some organizations that have spearheaded it, so my opinion is small in comparison.

Second, my work, ProtectHer, is just the beginning.

1 in 16 men are also victims of sexual violence.

LGBT people suffer as well, and it's absolutely essential that we look at them, but in today's talk, I want to focus on women, because violence against women is so prevalent.

Third, the purpose of ProtectHer's activities is not that women are too weak to protect themselves, so they should hire men to protect them.

It's a call to "protect her," a call to all of humanity to prioritize women and girls.

The funny thing is that the institutions that call me are ultimately very concerned about what's going on in the locker rooms on campus.

Before I started this movement, I spent 10 years working with young women.

I started a non-profit organization called I AM THAT GIRL when I was 19.

Yo is a cool girl scout for college girls

(Laughter) Now, we have a million young women members, and we just recently launched a chapter in our 20th country.

So— thanks!

Nice!

(Applause) So when I come up with a statistic about a woman, I have a name, a face, a specific true story.

And then one day, three years ago, Yogi Ross and Trent Dilfer approached me and asked me to speak in front of the top 18 high school quarterbacks on a television show called "Elite 11."

Little did I know, when this recording aired on ESPN a week later, NFL player Ray Rice's domestic violence incident came to light.

Before I knew it, I had become famous in the locker room as the woman who told the boys to take care of women.

I think I was fortunate to have worked at FOX Sports and ESPN, and besides, I grew up in Texas, where football was a big thing, and I had four older brothers.

My father is the nicest man in the world, and my husband was a professional athlete for nine years.

It's funny, all of a sudden, I started getting jobs from some of the best colleges in the National Collegiate Athletic Association, and I was invited to go behind the scenes behind the scenes, which gave me the opportunity to learn more about the men's athletes.

As I said earlier, some colleges hired me because a student had a crime, while others said it was just a legitimate concern. One time, I got a call from the chief coach who said he was worried about his daughter.

I flew in to talk to the players, and in the meantime -- I sat in a circle in the locker room, and I was the only woman in the room.

You can see the face of the coach saying, "Are you kidding me?"

(Laughter) The coach was looking down, shaking his head.

So I looked at the child and said, "Who told you that?"

There's a long silence, and the kid soon starts looking around, but the other players, like the coaches, have their heads down.

It's your fault that I've decided to dash in the schoolyard."

(Laughter) After a minute or so of awkward silence, I looked at the player and opened my mouth, "I'm not against it, but you said it in a very biased way. You said, 'It's cool to fuck a woman.' So I want to know who told you that."

I said, "Isn't that right? That's the problem, isn't it? You've been imprinted with that way of thinking, and you're acting without thinking. In other words, you've just been handed a script.

Mom, Dad, Pastor I'm not here to teach you how to live like a school teacher I just want to make a suggestion Be brave and write your own life story Come up with your own definition Think for yourself

After we talked, this player gave me a really awkward hug and thanked me, and I said, "What's the thank you for?"

"No one ever told me to think for myself

Thank you for your suggestion."

Like this, I had a lot of experience sneaking into the locker room alone as a woman.

Some stories will make you laugh, some will make you cry, some will make you cringe, some will hurt your heart.

But most of all, there were stories that gave me hope.

The reason I was born into this world is to support women

I became convinced of this when I was quite young, but it wasn't until I stood in a room full of so-called winning boys that I realized that what I was doing was a half-hearted thing that only resonated with half the world.

Violence against women is not just a women's problem, even though women are incredibly capable creatures.

It's a human problem, and we all have to deal with it.

The truth is, most of the boys we talked about feel they've never been invited to have a conversation with us.

I'm not Santa Claus, I can't go to every school, and I know God is watching, but for the past three years, I've been traveling 220 days a year.

We're launching the first-ever ProtectHer program to partner with college locker rooms to challenge male students to broaden the definition of masculinity.

Because if you think of female students as a dormitory, you need to activate the brains and minds of the locker room to protect it.

The lesson I've learned from working with boys and struggling with them is to make them aware of this imprint first and foremost.

Encourage the generation most surrounded by distractions in human history to take enough time to reflect and think about the conundrum, "Whose words?"

This generation spends 10 hours a day in contact with the media.

Media that is fundamentally derogatory and glorifies "violence against women" as the ultimate form of sexism and sexual objectification.

Seeing 3,000 brand images every day, this generation is swallowing the definition of masculinity as it's given to them, wearing a cheesy cologne to symbolize that definition, and turning it into a Ken doll with no moral pillars, no self-esteem, no real self-confidence.

The vast majority of these boys learn sex through porn, don't they?

That's why maybe there's no need to make a big fuss about the incident anymore.It's just moving as it was imprinted on it by the adults in society, so it's already amazing.

So as a society, we can improve the way we educate, teaching about sex and healthy relationships.

Second, we need a conversation about identity.

We need to expand our definition of masculinity, because what all athletic boys are trying to do is very easy and reasonably achievable.

make as much money as you can get famous as much as you can fuck as many girls as you can

Well, it's funny, one day my husband came up with a great idea, and he said, "Why don't we do this?" I'm here today, and I'm over two meters tall, and I'm a feminist boy.

"Frankly, if I were you, I'd grab pictures of their girlfriends, sisters, and mothers from social media.

I will use it for my presentation."

I just recreated my husband's voice

(Laughter) It was a genius idea.

When I gave my first presentation to the players at Elite 11, I took pictures of all the women who were important to them. I showed them this slide: "One in four college girls is sexually assaulted on campus."

Naturally, the players look bored and say something like, "Look, there's a sermon coming."

So I quickly moved to the next slide and said, "But what if the victim was that girl?"

You memorize 10 to 15 names, and then you go, "If the victim was Sarah, if it was Lauren, if it was Jenny."

Everyone's eyes are glued to the picture of their 16-year-old sister.

Half of the players in the classroom started crying

We have to change the way we present the problem and present it as something that's infinitely more accessible to young people.

Third, we have to teach about dignity.

I can't give to others what I don't have

We have to teach ourselves to be more kind to ourselves first, so that we can treat others with more respect.

What I've come to realize is that emotional education in schools isn't as good as it is now. It's clear that boys aren't being taught how to develop real self-confidence.

from grades and popularity and possessions

We also have to broaden our definition of self-confidence.

Fourth, you have to have real conversations with the boys.

I've never heard words like "consent" or "bystander" in the locker room.

It's a word that people on this side use in advertisements that feature celebrities.

I've never heard of a male student raising his hand and saying, "I think it's a great opportunity for us bystanders to intervene."

(Laughter) And then something like, "This is all serious. I was busy with a girl and I just stopped and said, 'I want to get your consent and then move on.'"

What I'm trying to say is that what we need to teach our boys are the words and the tools they can use when bravery is called for.

You have to put yourself in the shoes of the boys, talk to them, and teach them the expressions you can use when you come across a situation where you think something's wrong, so that they can say, "Hey, stop it."

I have to teach you expressions that you can use while you're busy, like, "Hey, is it okay to have sex with me?"

As long as you keep talking like a robot using difficult expressions, you're setting yourself up for failure.

So here are a few things you can do going forward. To all of you working in the media, when a male student-athlete makes a problem, don't blame the coach or the university.

Instead, let's shine a spotlight on the universities that are doing it better, and others will be inspired to do the same.

So, coaches and educators, I encourage you to invest in these programs as a preventative measure, because you're not going to be able to sustain yourself by prioritizing and dealing with what's happening in a reactive way.

Parents of children, please be aware of your power as a consumer.

If you're going to pay for tuition, ask the school to invest in the safety of both your daughter and your son.

Students, let's encourage school authorities to invest in these programs.

Student-athletes, refuse admission to colleges and universities that do not make sexual violence prevention a priority.

Policy makers, just like you need a driver's license to drive a car, why not make it compulsory for all freshmen and beginning sports students to enroll in a sexual violence prevention program?

Owners of National League teams, why don't you take the plunge and sign ProtectHer's pledge, which says, "No student with a sexual assault record will be drafted."

Being a professional athlete is a prestigious status, and in this country we are treated like real-life superheroes, so it is you who have the power to set these standards and change the landscape.

Finally, ProtectHer is a battle cry, a belief system, a cultural identity rooted in respect for women at heart.

As we stand in this room right now, women and hottest men from all over the country are rallying, marching, yelling -- (applause) (cheering) calling out that this is the kind of change this country needs to make. It's easy to go to the talks. We have to take this opportunity to create a definition of "common sense" that treats women, women and all people with dignity and respect as the norm.

Because the truth is, when it comes to violence against women, men are not just the problem, they're the solution, and they're needed more than ever.

Real men, please accept this invitation.

thank you

(applause) (cheers)

Hello everyone

Let me introduce you to Leica

For many people, Laika is simply a cute pig.

But for the hundreds of thousands of patients awaiting life-saving organ donation, Leica is a symbol of hope.

Organ supply has been a problem since the 1970s, when organ transplantation became a viable option for patients with kidney disease and other organ diseases.

The demand for organs has exploded in recent decades, and the problem is only getting worse.

Nearly 115,000 patients in the United States today require organ transplants to survive.

By the time my talk ends, one more patient will join this waiting list.

About 100 people will receive a new organ today, a chance to start a new life, but by the end of the day, 20 people will die awaiting organ donation.

It's a heartbreaking situation for patients, their families, and doctors who want to help them.

In some parts of the world, this is also a disturbing social problem.

In Asia, for example, the media reported that desperate patients were procuring organs on the brutal black market.

It's clear that we need a solution to this crisis.

people's lives are at stake

As a biologist and geneticist, solving this problem has become my mission.

I am now hopeful that we are moving in that direction thanks to Leica.

Using gene-editing technology, we can safely and precisely create organs in pigs that can be transplanted into humans.

Before we jump into the wonderful science that makes this possible, let me elaborate on xenotransplantation.

This is the procedure of transplanting animal organs into humans.

You might ask why pig organs.

Because there are pigs with organs similar in size and physiology to those of humans.

For the last half century, pioneers have attempted successful transplants with little success.

I wonder why

There were two fundamental walls

one is rejection

When our immune system recognizes the new organ as not ours, it rejects it.

The second is a particular problem with organ transplants from pigs. All pigs carry a virus that is benign to pigs but can be transmitted to humans.

It's called a porcine endogenous retrovirus (PERV), and it can cause viral infections like HIV.

Without an effective approach to addressing these issues, xenotransplantation has stalled for over a decade.

Little progress has been made—until now

Let me explain how I got here with Leica today.

My Journey Started in Emeishan, China

A place that often appears in various legendary stories such as "Green Destiny"

It's the place I call home

Growing up in the mountains, I developed a strong connection with nature.

This picture shows me when I was seven years old, standing in front of an old temple with a monkey on my shoulder.

I still vividly remember walking across the valley with my friends throwing peanuts to distract the monkeys.

i love nature

When it came time to decide on a major, I decided to study biology at Peking University.

But the more I learned, the more questions I had.

If our genes are so similar to those of animals, why do we look so different?

Why does our immune system attack so many pathogens but not itself?

I wondered about such questions

I know I'm a nerd, but I'm a scientist.

After college, I felt like I wanted to not just ask questions, but answer them.

In 2008, I was fortunate enough to be accepted into a PhD program at Harvard University to work with Dr. George Church.

While working in Dr. Church's lab, I learned and experimented with the genetic makeup of mammals.

One of those experiments got me closer to Leica.

In 2013, my colleagues and I modified human cells using a technology you may have heard of called CRISPR.

We were one of the first two research teams to use this technology to successfully edit human DNA.

It was a moment of amazing scientific discovery.

The gene-editing tool CRISPR has two components.

It's a pair of scissors called the Cas9 enzyme and something called a guide RNA.

Think of it as genetic scissors with a microscope.

When the microscope takes the scissors where we want the guide RNA to cut and says, "Here it is," the Cas9 enzyme cuts and repairs the DNA exactly as we want it to.

Shortly after we reported the study, doctors at Massachusetts General Hospital expressed interest in medical applications of this research.

They contacted us, and we both began to wonder if we could use CRISPR to solve the organ shortage.

the way is

simple and very complicated

We started by editing pig cells to be virus-free and immunocompatible with humans.

The nucleus of that cell is then implanted into a pig egg and allowed to divide into an embryo.

The embryo is placed in the womb of a surrogate mother and raised into a pig.

It's basically the same procedure as cloning technology

Those piglets, hopefully, are born with genetically engineered guts that the human immune system won't reject.

In 2015, we decided to tackle the problem of viral transmission first.

I wanted to remove all 62 copies of the PERV virus from the pig's genome, which at the time was almost mission-impossible.

Even with CIRSPR, we could only change one or two sites in the cell.

The highest record of possible changes in one cell was five.

So we had to increase the throughput more than 10 times.

With very careful design and hundreds of experiments, we got rid of all the viruses, for the first time ever.

More importantly, our research showed that we could eliminate the possibility of transmission of this dangerous virus to humans.

Last year, using engineered cells and cloning technology, our new business, eGenesis, created Laika, the first pig of its kind born without PERV.

(Applause) Leica represents an important first step towards safe xenotransplantation.

It's also a platform for further genetic modification to solve the immune problem.

Since then, we've produced over 30 PERV-free pigs, possibly the most advanced genetically engineered animals on the planet.

Laika is named after the Soviet dog that was the first animal to orbit the Earth.

I hope that Laika and her sisters will lead us to the cutting edge of science and medicine.

Imagine a world where people with liver disease could be saved by a new liver, and they wouldn't have to wait for an organ to be donated, meaning they wouldn't have to wait for someone to die.

Imagine a world where people with diabetes don't have to rely on insulin after every meal, but instead we provide pancreatic cells that produce their own insulin.

Imagine a world where people with kidney disease don't have to pay for dialysis.

We are striving to create such a world, a world without organ shortages for transplants.

We finally have the tools to tackle the problems we've never been able to tackle before, and the Leica is just the beginning of our adventure.

In front of nature, people should not overestimate their power, because there are still problems with immunity and problems that we cannot even imagine at this stage.

But it's our responsibility to apply this cutting-edge technology to medicine and save all the waiting patients.

thank you

(Applause) (Chris Anderson) Luhan, that's a great achievement.

go ahead

What are the next steps? The virus has been removed

The future is to make sure the human body doesn't reject the transplant.

how to solve

(Luhan Yang) It's a very complicated process.

We have to remove the pig antigen

And there's a lot we can learn from cancer.

We're going to learn how cancer can invade and evade the immune system, and apply that to pig organs to trick the human immune system into not attacking the organ.

CA: When do you think organ transplantation will be successful, when do you hope it will be successful?

(Luhan) It would be irresponsible to give numbers.

CA: This is TED, so we're always irresponsible.

(Luhan) I work from morning till night to make it work for my patients.

Chris: Can you give us a 5-year, 10-year outlook?

(Luhan) Of course I hope to succeed within 10 years.

(Laughter) (Chris) I think a lot of people would be excited to hear that, which is a great possibility.

but at the same time, cute pigs for the benefit of humans

There will be people who say we shouldn't exploit.

Do you have an answer to that?

(Luhan) Of course

Consider that one pig can save eight people.

Moreover, just like human organ transplants, if you take just one kidney from a pig, the pig can still live, so we're very concerned about these issues, but I think our goal is to address the unmet medical needs of patients and families.

CA: And if you're a bacon eater, you can't say that.

(Luhan) Yes

(Laughter) (Chris) Thank you.

(Luhan) Thank you. (Applause)

One day in 1965, while driving to Acapulco for a family vacation, Colombian journalist Gabriel García Márquez abruptly turned back, leaving his wife to manage the finances for the next few months and returning home.

It was at that moment that the idea for a new novel swept in. "Many years later, when he found himself standing in front of a firing squad, Colonel Aureliano Buendía probably remembered that distant afternoon when he saw ice for the first time with his father."

This novel took Latin American literature to the top of the world's fiction world, and in 1982 Garcia Marquez won the Nobel Prize for Literature.

What makes this novel so great?

The story depicts the rise and fall of the Buendia family over seven generations.

Tasteful and detailed depiction Lots of characters Intricate story It's not an easy novel to read

A deep and rewarding tale of epic proportions of fiery romance, civil war, political intrigue, globe-trotting adventurers, and a dizzying array of characters named Aureliano.

But this work does not fit within the framework of a mere historical novel.

It is said to be a prime example of the genre called magical realism.

While supernatural events and abilities are depicted as if they were real, on the other hand, what really happened to people and history is written like an impossible fiction.

The surreal phenomenon of the fictional village of Macondo blends beautifully with the historical events that took place in the real country of Colombia.

The fantastic village of Macondo, which was born in an isolated state, interacts with the outside world as time passes, and invites tragedy.

As the years pass, the characters grow older, and it is implied that they either become ghosts or are reborn in the next generation.

In the village, an American fruit and vegetable company, and a machinist in love surrounded by yellow butterflies wherever he goes.

A young girl soars into the sky and flies away

The story progresses to the succeeding generation, but time repeats itself

Many characters have similar names and appearances to their predecessors and repeat the same mistakes.

After a mysterious gypsy left a bizarre prophecy, armed clashes and gunfights erupted in a never-ending battle.

An American fruit and vegetable company opens a plantation near the village, but slaughters thousands of workers who go on strike, mimicking the real-life massacre of banana workers in 1928.

Combined with magical realism, it creates a sense of a negative spiral mercilessly swallowing the characters over time.

Behind this effect is a historical event that has been repeated throughout Colombia and throughout Latin America since colonial times.

It is also a history that the author personally experienced.

Garcia Marquez grew up in Colombia, torn apart by a civil war between the Conservatives and Liberals in the country.

He also lived in dictatorship-era Mexico and covered the Venezuelan coup as a journalist in 1958.

But I think my biggest influence came from my maternal grandparents.

His grandfather, Nicolas Ricardo Márquez, was a decorated veteran of the Thousand Days War, and his rebellion against Colombia's Conservative regime led García Márquez to a socialist perspective.

On the other hand, the age-old legend told to me by my grandmother, Donna Tranquita, became the foundation for One Hundred Years of Solitude.

The small grandparents' house in Aracataca, where Marquez spent his childhood, became the core of Macondo's ideas.

Through One Hundred Years of Solitude, Garcia Marquez finds his own way of capturing Latin America's unique history.

He portrayed the bizarre reality that even after independence from the colonies, the local society was forced to experience the same painful experiences as in the past.

Despite this fatalistic tributary, the work does not give up hope.

In his Nobel Prize acceptance speech, Garcia Marquez reflected on Latin America's long-running civil war and injustice.

But he concluded his speech by arguing that it is possible to create a better world, "Where no one else decides how you die, where love bears fruit, happiness is never lost, and families caught in the spell of 100 years of solitude are finally and forever given a second chance to be happy on earth."

An 18-year-old African-American man enlisted in the United States Air Force, was assigned to Mountain Home Air Force Base, and became a member of the Air Force Police Force.

When I arrived, my first goal was to find an apartment and bring my wife and newborn Melanie to live with me in Idaho.

I immediately went to Human Resources and spoke to a staff member, and he said, "It's easy to find an apartment in Mountain Home, Idaho.

People love us soldiers, because if you rent a room to an Air Force soldier, you can't take the rent."

this was very important

"Here's a list of contacts. Call them and they'll let you choose the apartment you want."

I got the list and called

When I told her I wanted to rent a room, the other woman said

"Thank you for calling

We have 4-5 rooms available at the moment.

Do you prefer 1 bedroom or 2 bedrooms? ”

and continued like this

"Rather than talking on the phone, why don't you come in person and choose a property?

If you sign the contract, you can hand over the keys and call your family right away."

I became happy

I jumped in my car and drove into town and knocked on the door.

And then that woman came up, looked at me, and said, "What do you need?"

"Yes, I'm the person who called you about the apartment.

I came to choose a room."

And she said, "I'm sorry - I didn't know my husband rented it all out."

“Did you rent out all five rooms in one hour?”

She didn't answer, but instead said, "Give me your phone number and I'll get back to you when a room becomes available."

needless to say i didn't get a call

In fact, none of the people on the list of apartment builders responded.

So, feeling alienated, I returned to the base and consulted with the unit commander.

His name was Major McDow.

"Major, please help me."

When I outlined it, the Major said, "James, it's the mountains that need your help.

But, as you probably know, you can't force someone who doesn't want to lend it to you.

And we have a good relationship with the locals, so we don't want to hurt that."

He continued, "How about this

With your family living across the street, you could get 30 days off.

That's why I go back to my family once a year, spend 30 days with them, and then come back."

Of course I didn't agree with that.

So when I left the Major's room, I went back to HR, and I talked to the staff, and they said, 'Jim, there's a better way.

There's a soldier who's about to be transferred, and he's got a trailer.

As you may have noticed, Mountain Home has trailer parks and trailers all over the place.

I think I got a great deal on his trailer because he said he wanted to get out of here as soon as possible.

This might put an end to your problem."

I immediately jumped in the car and went into town and saw the trailer, and it was a small trailer, but given the circumstances, I thought that was the best I could do.

that's why i bought it

Then I asked him, "Can we just leave the trailer here? Then we'll be all set and we won't have to look elsewhere."

He said he would check with the manager before replying.

When I got back to the base, he called me, and the janitor said, "We can't put the trailer here - he's already committed to renting the lot to someone else."

I thought it was strange that I happened to be renting out lots when there were still some vacant lots.

And he said, "Don't worry, there are a lot of trailer parks."

So I put together a list of trailer parks

I visited them one by one

And I kept getting turned down just like when I was looking for an apartment.

In addition to the fact that there were no vacancies, they said, "We can't rent a place to Jim because it's already inhabited by a black family.

It's not my fault, I love you guys."

(laughs) I couldn't help but laugh.

He also said, "The trouble is that when you enter, other people leave. It's a big blow to us."

I was also told "I can't lend anyway"

I was disappointed, but I didn't give up

I kept looking until I got to the edge of Mountain Home and found a small trailer park.

It was a really small trailer park

The walkways weren't even paved, they didn't have a concrete base, and there weren't any fences separating your lot from the rest.

no place to wash

But I came to the conclusion that there was no other way.

So I called my wife and said, "Let's get through this."

That's how I moved and made a home in Mountain Home, Idaho.

After that everything calmed down

Four years later, I was transferred from Mountain Home to a place called Goose Bay in Labrador.

(Laughter) The hardest part was getting my family from the Mountain Home to Sharon, Pennsylvania.

I had just bought a new car, so the move itself was nothing.

My mother called me and told me that she would come here.

He said he would come with me and take care of the children.

Mother came over and prepared a lot of food with Alice.

we left at about 5 o'clock in the morning

It was a very good trip. We had fun and talked a lot.

By 6:30 or 7:00, I was getting a little tired, so we said, "Let's stay in a motel and leave early tomorrow morning."

As I was driving, I saw a bunch of motels, and one of them had a really big neon sign that said, "Vacant, Vacant, Vacant."

that's why i got in there

I made my family wait in the parking lot and I went to the office.

As I walked in, the landlady was making a deal with someone else, and there was another person in line behind me.

As I approached the counter, the hostess said, "What can I do for you?"

When I told him, "I'd like to stay overnight with my family."

"I'm sorry, the last room has been filled.

I won't be free until morning."

"If you go down this road for about 45 minutes or an hour, there is another trailer park."

I said, "But there's a vacant sign on it, isn't it?"

Say "Oh, I forgot"

I reached for the switch and turned off the sign

she and i saw each other

There were other people in the room

She looked over there too and no one said anything.

I thought, I see, and went out to the parking lot.

I said to my mother, my wife, and Melanie, "I have to run a little more before I can stay tonight."

I pulled out the car, and just before I left the parking lot, what do you think happened?

I got the vacant sign again.

"Vacant room Vacant room"

After that I found a good place to stay

I didn't like it, but it was safe and clean.

We all slept well that night

But I want to emphasize here that we've had similar experiences many times, from Idaho to Pennsylvania -- we couldn't get into hotels, motels, restaurants.

But somehow I made it to Pennsylvania

The family settled down there, and everyone around them was happy to see the child.

I was flown off to Goose Bay in Labrador, but that's another story.

(Laughter) Now, 53 years later, I have nine grandchildren and two great-grandchildren.

5 of my grandchildren are boys

Some have master's degrees and PhDs, some have gone on to college and medical school.

The two are trying to do a fashionable job.

(Laughter) Some of us have been in college for eight years this year.

(Laughter) He doesn't have a degree yet, and he wants to be a comedian.

That's why we're all trying to keep them in school.

Even if you're funny at home, you can't be a comedian, can you?

(Laughter) But the point is, we're all good kids. We didn't do drugs, we didn't get pregnant in high school, we didn't commit crimes.

In the midst of all this, I was sitting in my room watching TV, and it was talking about Ferguson and what was going on.

Suddenly, one commentator said, "Eight unarmed African-American men have been murdered in the last three months by police officers, white landlords, and white citizens."

i was shocked

"What the hell is this? Isn't it funny?

What the hell is hate that makes people like this? ”

Just then my grandson called

"Grandpa, have you seen TV?"

When you say "I saw it"

"I don't understand

I'm doing everything that I'm supposed to be doing, but even if I'm driving, walking, or talking, just being black is dangerous

what should I do? Even though I follow what grandpa says

When the police stop my car, I put my hands on top of the steering wheel.

When I'm told to take out my ID card, I say, 'I'll slowly take it out of the glove box now' When I'm taken out of the car and searched, when I'm laid on the ground and searched, When I'm opened in the trunk and searched, I don't protest, I don't complain, because my grandpa is going against the police.

I'll call you later and tell you to complain to me."

The grandson continued, "It pisses me off - I have a white friend and I play with him a lot.

When I tell them about our experience, they say, 'Why are you holding back?

You should resist You should protest

You should let them show you their ID too.'" My grandchildren have been taught to say, "You may be able to do it, but don't do it when we're in the car, you guys and we're on a completely different story."

So what can you say to your grandchildren as a grandfather?

How will my grandchildren live safely?

Some people come to me and say, "Jim, are you mad at me?"

My answer is, "Getting angry is too luxurious for me, and I know what happens when I get angry."

So all I can do is summon all my wisdom, my energy, my ideas and my experience, to protest against anything that is discriminatory at any time.

So first spread the knowledge, then expose the racism, and finally, in my lifetime, I'll do whatever it takes to eradicate it, using whatever means I can.

I have one more thing to do. I want to appeal to the American people.

I want to appeal to the humanity and dignity and -- civic pride and responsibility of Americans -- not to respond to these heinous crimes with hostility.

Instead, I want to urge all of us to know more about our society, to be more aware, to be more conscious, to come together and speak up and protest against the insanity that allows us to kill unarmed people, no matter what ethnicity or race the victims are, no matter how different they may be.

we should protest it's funny

The only way left for us is to act collectively.

Blacks, whites, Asians, Hispanics, we need to step up and say, "We don't allow this anymore." (Applause)

6,000 miles on the road 600 miles on the subway 400 miles on the bikeway 0.5 miles on the tramway You'll find out when you go to Roosevelt Island

This is a number that represents the infrastructure of New York City (NYC)

Statistical summary of infrastructure

It is the number of the report published by each department of the city

For example, the Department of Transportation might report the distance of roads it maintains.

The Urban Transportation Authority will proudly mark the distance of the subway lines.

Most city departments use statistics

According to this year's report and the Taxi and Limousine Commission (TLC), there are about 13,500 taxis here in NYC.

Very interesting, right?

But where do these numbers come from?

For these numbers to exist, someone in the city staff would have to suddenly realize, "This is the number that someone wants to know."

This is the number that the public wants to know.

That's why we count and add and calculate the raw data and publish the report, and that's why the report has numbers like this.

The question is how do we know what questions we want to ask?

I have a lot of questions

In fact, in a sense, citizens literally have a myriad of questions about the city.

Each department cannot handle

The paradigm isn't working, and I think politicians are aware of it, because in 2012, Mayor Bloomberg passed America's most coveted and comprehensive open data bill.

In many ways the mayor is right.

In the last two years, NYC has published 1,000 datasets on its open data portal, which is incredible.

So without counting taxis, you can look at the data like this and ask different questions.

so i asked

When is rush hour in NYC?

It's annoying, isn't it? When exactly is rush hour?

I thought that taxis were more than just numbers. They were GPS recorders that roamed the streets of the city, recording every passenger they picked up.

There's data out there, and I've gone through that data and worked out what the average NYC taxi speed is for a day.

As you can see, from midnight to 5:18 a.m., it picks up speed, then slows down, and then slows down to 11.5 mph at 8:35 a.m.

The average taxi speed on the road is 11.5 miles per hour.

(Laughter) I thought NYC didn't have rush hour.

It's just that there's a rush day

Okay, this is important for two reasons.

If you're a transportation planner, you might want to know

If you want to get somewhere early, set your alarm clock for 4:45 in the morning.

I mean NY

But this data has a story behind it.

Such data were not available

In fact, the source was a Freedom of Information Act request. In fact, the source was a Freedom of Information Act request.

This is the form on the TLC homepage

To access the data, download this form, fill it out, and you'll get your information, and a man named Chris Wong did it.

When Chris went, he was told by a staff member to bring a brand new hard disk to the office, "I'll copy the data and return it in five hours."

That's how I got this data

Now, Chris is the type of person who publishes data, so he made it available to anyone on the internet, and that's how this graph was created.

The existence itself is surprising. The record of the GPS recorder is amazing.

Now, what about the fact that there are citizens who take their hard disks to public offices and receive the data in order to make the data public? It was supposed to be public data. It was "public" data, but it was private.

As a city, we can do better.

Citizens don't have to walk around with hard disks.

Some datasets are not available through public disclosure

Here's a map of NYC's most dangerous intersections based on bike accidents

Red areas are more dangerous

According to the map, first of all, the east side of Manhattan, especially the Lower Manhattan area, has the highest number of bicycle accidents.

A lot of cyclists cross the bridge there, so that makes sense.

But other dangerous areas are also worth investigating.

Williamsburg and Roosevelt Avenue, Queens.

This is the data we want for Vision Zero.

exactly what we're looking for

but to get this data

I needed some ingenuity

Anyone know this logo?

some people raise their hands

Have you ever tried to copy and paste a PDF to create a document?

I raised my hand

Copy and paste even if you don't know the logo.

So what I showed you was a PDF.

In fact, the NYPD has released a ton of PDFs, and in fact, the NYPD has released a ton of PDFs, and the only way to access them is to spend a ton of time copying and pasting them, or doing John Krause's thing.

John Krause wrote a program called the NYPD Crash Data Band-Aid.

No copy-paste needed Download the PDF from the NYPD website

Run a program to collect the data, run a program to unprotect the PDF, turn it back into editable text, and put it on the internet, so anyone can make a map.

So here's the data, and you can access it, and by the way, in this table, there's a row for each accident.

how much do you think the pdf is

It's great to have access, but I'd like to see something other than PDF, because it forces citizens to write programs to read the data.

Citizens don't make good use of their time, and we can do better as a city.

Now, the good news is that de Blasio's administration released this data a few months ago, and now we have access to it, but a lot of it is still in PDF format.

For example, crime data is only available in PDF.

And not just crime data, but city budgets.

The city budget can only be read as a PDF

Not only are we unable to analyze the data, but the legislators who vote for the budget can only use PDFs.

That's why legislators can't analyze the budget they agree with.

As a city administration, I think we're a little bit better than that.

Now, there's a lot of data that isn't PDF.

Using my map as an example, this is the dirtiest river in NYC.

How do you measure dirt?

It's kind of weird, but we looked at the level of faecal E. coli, which is an indicator of faecal material in each stream.

The bigger the circle, the dirtier the water. The bigger circle is dirty water and the smaller circle is clean water.

What you see is a land river.

This is all the data that the city has collected over the last five years.

land rivers are generally dirtier

Do you agree?

Bigger circles are dirty.

Tip 1: Don't swim in river mouths

Part 2: Measurements show NYC has the dirtiest rivers

It's Coney Island Creek, not Coney Island Beach.

It's the opposite bank

But 94 percent of the samples taken at Coney Island Creek over a five-year period had very high levels of faecal E. coli, and swimming in rivers is against state law.

It's not an achievement that the city's report highlights.

It's not even on the front page of nyc.gov

Even if you're not trying to show it that way, it's amazing that you've reached that kind of data.

But it wasn't super easy, because the data wasn't posted on an open data portal.

If you look in open data portals, you'll only find partial months or a year.

In fact, it was on the website of the Environmental Protection Division.

The links were all Excel and they were all in different formats.

All headings are different, so copy and paste to edit

So we can finally create a map, which is great, but again, the city can do better and standardize.

Socrata's home page, Open Data Portal NYC, seems to serve the purpose.

I have 1,100 data sets here that don't have the problems I just described, and I have 1,100 data sets that don't have the problems I just described, and it's great to see that number grow.

Data can be downloaded to CSV, PDF, Excel, etc.

Any data can be downloaded

The problem is that when you download it, the address breaks are different for each department.

Street name, intersection street, street, ward address, building, building address, etc.

That's why using this portal is still time-consuming, because it takes time to standardize the address fields.

It's not an effective use of citizens' time.

we can do better as a city

We can standardize our addresses so we can have more maps like this.

This is a map of fire hydrants in NYC, but they're not just fire hydrants.

It's the top 250 hydrants for parking tickets.

(Laughter) This map is one of my favorites because it taught me something.

1. Don't park on the Upper East Side

No, no matter where you park, you'll get a fire hydrant ticket.

Part two, we identified the top two fire hydrants in NYC, located on the Lower East Side, that generated more than $55,000 a year in parking tickets.

When I realized that, it felt a little weird, and I did a little research, and it turns out that there's a fire hydrant, and there's a side strip that's surrounded by curbs.

So when a car shows up to park, the fire hydrant is all the way over there, so I think it's fine.

If you park there, the New York Police Department will put up a ticket for you.

I'm not the only one who found a parking ticket.

Google Street Viewer was also photographing parking tickets.

I posted this on the I Quant NY blog, and the Department of Transportation responded, "We have never had any complaints about this location, but we will review the road markings and make appropriate changes."

I thought in my heart that it was a stereotypical government response, and I had almost given up.

A few weeks later something incredible happened.

The transportation department repainted the place. For a second, I thought I saw the future of open data. Think about what happened here.

For five years, this place was littered with parking tickets, and citizens found something, told the city, and within weeks the problem was solved.

Great, a lot of people think open data is a watchdog.

Rather, they should be seen as partners.

Empowering citizens to be better partners in government. It's not that hard.

all you need is a little change

If you have data that has been asked to be released, and you've been asked to release it over and over again, release the data.

And for those departments that publish PDFs, make it a rule to post the underlying material with the data, because that data comes from somewhere.

I don't know where, but it's coming from somewhere, and we can publish it with the PDF.

And let's adopt and share open data standards.

Let's start with the address here in NYC

We start by standardizing addresses.

Because NY is the leader in open data

Despite the problems, we're the absolute leaders in open data. If we start standardizing and create standards for open data, local governments, states, and perhaps even the federal government will follow suit. Other countries may follow suit.

It's not sci-fi, it's actually quite recent.

By the way, who will benefit from this?

It's not just John Krause and Chris Wong.

NYC now has hundreds of active meetings.

Thousands attend those meetings

They meet after work and on weekends to explore open data and participate in meetings to make cities more livable.

Groups like BetaNYC launched citygram.nyc last week, allowing people to subscribe to 311 complaints about their homes and workplaces.

Enter your address to search for local complaints

And it's not just the technical community that wants this information.

A student urban planner I teach at Pratt

Policy supporters, everyone, citizens from all backgrounds.

Unleash the passion and power of citizens to harness open data and build better cities through small incremental changes -- change from one data set, one parking lot.

thank you

(applause)

After publishing 11 books and receiving numerous prestigious awards, Maya Angelou still had her doubts: "I'm not really doing it."

Albert Einstein had a similar experience, calling himself an "unconscious fraud" and thinking that public attention was "not worthy of his achievements."

Achievements on the scale of Angelou and Einstein are rare, but the feeling of being "cheating" is very common.

Why are so many people unable to shake off the feeling that "I'm not good enough" or "My ideas and techniques aren't worthy of attention"?

Psychologist Pauline R. Clans was the first to study this sense of unfounded anxiety.

While working as a psychotherapist, Krans realized that many of his college-aged patients had a common concern: they thought they weren't good enough to go to college, even though they had excellent grades.

There was even a student who thought, "I got accepted because of a mistake on the university's part."

Crance himself remembers feeling the exact same anxiety in graduate school, albeit unfounded.

The sensations that Kranns and his patients experienced have been given many names, including "impostor phenomenon," "impostor experience," and "impostor syndrome."

In collaboration with her colleague Suzanne Aymes, Crance was the first to study the psychology of impostor among female college students and teachers.

We've proven that a "feeling of cheating" is prevalent in such people.

Starting with this study, the same is being demonstrated across borders, regardless of gender, race, age, or wide-ranging occupational differences, but biases can be more prevalent and more likely to affect minority and vulnerable groups.

It applies to everyone, so it doesn't fit as a "syndrome."

Impostor is not a disease or disorder, nor is it necessarily associated with depression, anxiety, or self-esteem.

Where does the “feeling of being stuck” come from?

High-skilled, high-performing people tend to assume that other people can do just as well.

And that's where we fall into the thought, "How could I have more recognition and opportunities than everyone else?"

Like Angelou and Einstein experienced, this feeling never goes away, no matter how much you achieve.

It's not just highly skilled people who feel imposters either.

It's easy for anyone to get caught up in a phenomenon known as pluralistic ignorance, where everyone secretly doubts themselves, but no one expresses it, so they think, "I'm the only one who doubts."

Since it is difficult to actually confirm how much each of us doubts ourselves, how enthusiastic we are about our work, how difficult each task is, and how much we doubt ourselves.

Too much of an impostor means that even if you have a great idea, you won't share it, and you won't even apply for a job or program that could be successful.

The surest way to overcome impostor syndrome, at least for now, is to speak up.

For many people who suffer from impostor syndrome, it's scary to ask yourself how you're doing, because your fears are likely to hit the mark.

Even if you get good reviews, it doesn't do much to make you feel like you're cheating.

But on the other hand, it can be comforting to hear that the people who give you guidance and advice also have experiences of imposters.

It's the same with my friends

Sometimes, just knowing that there's a term for that feeling can be hugely helpful.

As long as you become aware of this phenomenon, it is possible to overcome imposter syndrome.

A scientist who always blamed himself for problems in his lab decided to keep track of what went wrong each time.

When she realized that most of her problems were due to equipment failure, she came to recognize her abilities.

We can't completely eliminate these feelings, but we can openly discuss academic and professional challenges.

As you become more aware of the familiarity of your experiences, you'll feel more free to talk openly about how you feel and believe in simple facts.

Hello everyone, I'm Michael Shermer, and I'm the president of the Skeptics Society, which publishes Skeptics magazine.

We demystify claims about paranormal phenomena, pseudoscience, and claims in anti-mainstream, cult, and other science, pseudoscience, non-science, crappy science, voodoo science, pathological science, immoral science, non-science, old myths.

Until recently, when humans went to Mars, we didn't know there was so much out there.

Some call us truth revealers with negative connotations.

But think about it, there's a lot of bullshit in the world.

So we expose that lie, like a bunch of scammers in the police force.

Let me give you an example of what I did wrong

I brought this today, this is what NBC Dataline gave us as a test.

Manufactured by Kuoda Corporation in Western Virginia

This item is called a Quoda 2000 Dowser Rod

(Laughter) It was sold to high school administrators for $900.

It's a lump of plastic with a Radio Shack antenna attached.

It can search for anything and everything, but the one I have right now was designed to find marijuana in student lockers.

(Laughter) How do you use this? You walk down the hallway and see if the antenna tilts in response to any particular rocker, and you see the tilted locker.

I use it like this

let me show you

(Laughter) You seem to be biased to the right. So again, this is science. We're going to show you a controlled experiment.

This will definitely lean towards this side

(laughter)

Do you want to empty your pocket, can you empty it?

(Laughter) And this raises one question: Can you really find marijuana in a student's locker with this?

That's right, open a bunch of lockers and you'll find

(Laughter) (Applause) But scientifically, we have to keep looking not only at what we've found, but also at the failures we haven't found.

That's the key point that I'm going to talk to you about today, I'm going to talk about how psychics, astrology, tarot card divination, etc. are put into practice.

People remember successes but forget failures

Science has to manage all the databases and see if the success rate stands out among all the cases, or if it's just a coincidence.

And this time we actually measured

We have two opaque boxes, one containing legal THC marijuana and one containing nothing.

This means that you have a 50 percent chance of establishing marijuana, which is exactly the same as flipping a coin.

Here's a fun little example of what we're doing

"Skeptic" is a quarterly magazine, this time around a specific theme, like the intelligence of the future.

Will humans get smarter or dumber in the future?

I have a personal opinion on this because of my profession, but what I do know is that people do get smarter, and their IQ goes up by three points every 10 years.

it's quite interesting

From a scientific point of view, skepticism is nothing, not even science.

Can Science and Religion Coexist?

So that's the same thing as whether science and plumbing can coexist.

this is two different things

Science is not a thing it's an action

Science is the way we think about things

It's a way of finding natural explanations for all phenomena.

So what I'm trying to say is that the endless migration of extraterrestrials and multidimensional beings left the crop circles on Bob's farm in Packerbrush, Kansas to promote our website, skeptics.com, or were they Photoshopped by Skeptics readers?

In every case, we have to confirm this (laughter) and what needs further explanation is

Before we say something is unreal, we have to make sure it doesn't exist in this world.

So, did Arnold get extraterrestrial help to get back into politics, or did the "World Weekly News" fabricate the information?

(Laughter) And that same kind of thing is beautifully represented in Sidney Harris' cartoons.

To those who have their backs turned, he says, "Then miracles will happen. Here we have to be more real."

This one slide completely removes the discussion of intelligent design

This slide shows exactly what is written here.

(Applause) You can say that miracles happen, but that doesn't explain anything.

You haven't provided any information.

End of discussion about creationists

Scientists, by contrast, sometimes leave language as a place of linguistic make-up, dark energy, dark problems, things like that, until they know what it is.

This is the beginning of the causal chain of science

For creationists, this is the end of the debate.

Let's ask this question again.

Is the UFO an extraterrestrial vehicle, or is it just a misunderstanding, or even a fake?

Here's a photo of a UFO taken at my home in Atlanta, California, overlooking Pasadena.

Doesn't it look like a Buick hubcap? Yes, it's a Buick hubcap

You don't need Photoshop, you don't need tech tools, you don't even need a computer

This was taken with a Kodak instant camera.

I just need someone to hold my hubcap outside the lens

Your camera is ready. Here's a picture.

(Laughter) Most of these things could be fakes or paintings, or they could be real, but it's more likely that all of these things are fakes, like crop circles.

More seriously, in any field of science, we're looking for a balance between data and theory.

In Galileo's case, when he points his telescope at Saturn

First of all, there was no theory that there were planetary rings.

And second, his data was so grainy and fuzzy that he couldn't tell what he was looking at.

So he said, "I have observed that the most distant planet has three bodies."

and this rounded out his record

If you don't have a theory of planetary rings and you have graininess data, you can't have a correct theory.

This was not clarified until 1655

It was Christiaan Huygens' book that clarified all the mistakes people make when they figure out what's going on with Saturn.

This continued until Huygens realized two things. He had a decent theory about how the rings of the planets and the solar system worked. And then he had more telescopes, and he had clearer data, so that we could see that the Earth was moving faster than Saturn, according to Kepler's laws, and we knew that.

we know each angel has their own angel wheel

and it turns out that this is actually true

The problem with theorizing is that your theories may be subject to sensory bias.

So one of the problems with explaining why people believe strange things is that we have something very simple.

This is the face on the surface of Mars in 1976

Around that time, NASA was planning to photograph the area, because people thought the face was a monumental building made by Martians.

This is a close up version from 2001

If you squint your eyes and look closely, you can still see the face

And what you're doing when you squint is transforming a fine grained photo into a grainy one, thereby degrading the quality of the photo in your mind.

Because we are evolutionarily directed to recognize faces.

Faces are socially important to us.

And, of course, smiles.

(Laughter) You can see a smile on the surface of Mars.

If astronauts were frogs, they would look like Kermit

Do you look like Kermit?

You can see little frog legs, but what if the geologist was an elephant?

religious iconography

(Laughter) It was discovered in 1996 by a baker in Tennessee.

He used five buckets of bread to show the nuns until he got an exclusion order from Mother Teresa's lawyer.

If you look across the street or from here you can see Our Lady of Guadalupe and Our Lady of Watsonville on this side.

The bark is especially nice because it's rough, it's branchy, it's black and white speckled, and you can see patterns in it.

You can see the Virgin Mary in a glass window in São Paulo

Now let's take a look at the image of the Virgin Mary on the surface of the actual cheese sandwich I had at the Las Vegas casino, and of course it's made in America.

(Laughter) This casino paid $28,500 to eBay for a cheese sandwich.

(Laughter) But who really resembles the Virgin Mary?

(Laughter) This one has what looks like a 1940s puckered lip.

Virgin Mary of Clearwater, Florida

i actually went to see this

There were a lot of people there, people in wheelchairs,

There were religious people, some on crutches.

we went there and checked

Let me explain the sizes. Dawkins, me, and the great Randy, next to the two.

Tens of millions of candles were lit to this Virgin Mary

Then we went around the back to see what was going on there.

And it turned out that there were sprinkler heads and palm trees, and that was the effect.

It's the Virgin Mary on the back, though it's fading away.

I think there can only be one miracle per building.

(Laughter) Is this really the miracle of Mary or the miracle of Margarine?

(Laughter) So I'd like to end with another example of audio illusion.

It's "Silent Noise," a movie about the dead talking to us, starring Michael Keaton.

Talking to the dead is not a big deal here.

Anyone can do it, so you'll know right away I'm going to die to answer it too.It's difficult.

(laughter)

In this case perhaps these messages are hidden in electronic phenomena

I downloaded this from a webpage called ReverseSpeech.com

This is the normal regeneration of one of the most famous electronic phenomena.

Normal playback of a very famous song (music)

I could listen to it all day (laughter)

Now let's play it backwards Let's see if we can find the hidden message there (music)

What did you hear?

Audience: Devil

Michael Shermer: Devil? Yes, at least we heard the word devil.

(Laughter) (Applause) You don't miss it when you're told in advance what's there.

(Laughter) So let's finish with a positive and nice little story.

Skeptics is a non-profit educational organization

We are always looking for nice little things people do

There's a pop singer in England

Britain's Most Popular Singer and Alone Says Katie Moore