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# **Future Crunch: the world is a much better place than you think**

Presentation by

**Dr Angus Hervey and  
Tane Hunter**

Co-founders of Future Crunch

**Communities in Control Conference**

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## **About the presentation:**

Watching the news or reading the papers can leave you with an overwhelming feeling of pessimism. It's very easy to be concerned about our future. But is it warranted? The speakers explain why the world is much better than you think, showcasing the technologies that will leave you feeling optimistic about the future.

## **Denis Moriarty**

It's now time to invite our first guests today, Dr Angus Hervey and Tane Hunter. While they're making their way up here, let me tell you a bit about them. Angus and Tane are co-founders of Future Crunch, an organisation of scientists, artists, technologists, and entrepreneurs that believe science and technology are creating a world that is more peaceful, transparent and abundant - what a great way to start a conference. Angus is a political journalist specialising in the impact of disruptive technologies on society. He was the founding community manager of Random Hacks

of Kindness (I've judged that a couple of times), a global initiative from Google, IBM, NASA and the World Bank to create Open Source Technology Solutions to social challenges. Tane is a cancer researcher, bio researcher and science communicator. He holds Maser's in Bioinformatics from the University of Melbourne, and has worked for the Melbourne's Royal Children's Hospital in diagnosing rare genetic disease. Angus and Tane are here to talk on the topic, 'The World is not on Fire'. Please, welcome them.

**Dr Angus Hervey**

Good morning, everyone.

**Tane Hunter**

Hello. And Kia ora for the Kiwis. G'day, Australians. Howdy, for any Americans.

**Tane Hunter**

First of all, my name is Tane, and this is Gus. He's an economist, which means he can tell you tomorrow why the things you predicted yesterday didn't happen today.

**Dr Angus Hervey**

Thanks, Tane. Tane is a scientist who looks as if he's just walked out of the set of the Hangover.

**Tane Hunter**

I'm still recovering from Saturday night's election. I had to drink some sorrows away there.

**Dr Angus Hervey**

What we thought we'd do today, given that it's been a tough weekend, was start off with some shameless bribery. Anyone up for that? Does anyone like chocolate?

**Audience**

Yeah.

**Tane Hunter**

All right, cool. All right, you have to earn this chocolate, and the way you're going to do this is you're going to answer some questions. So, pair up with the person next to you. You're going to form a team. We want you to answer a simple question: what have been the biggest news stories of 2019? You can write them down on a piece of paper, or put it on your phone, but we want you to come up very quickly with ten of the biggest news stories of 2019.

Okay, let's wrap things up. We've got our ten news stories, and we're going to do a little game. I'll go through the top news stories of 2019 so far, and you get a point for each one that you get right – so keep score. If you chose the worst news story of 2019, you get a point for the Australian election. Tally a point if you got that. How about Notre Dame? Perhaps the Sri Lankan bombings, unfortunately. The terrible event in Christchurch, though Jacinda did a great job handling that (I think Jacinda is now the most trusted politician in Australia). Anyone go for the Brexit kerfuffle? Good work. There's got the horrible mess going on in Venezuela. And something close to home for me - I'm from New Mexico in the United States - Alabama making abortion illegal, making unborn babies great again. The fish die-offs in the Murray-Darling

Basin. Anything about plastic, you get a point for that. Climate change in general – melting of the ice caps, fires, extinction. And, of course, everything is overshadowed by he-who-shall-not-be-named.



**Dr Angus Hervey**

Go two points for that.

**Tane Hunter**

Get two points for that. All right, we're going to give chocolate to the top winners – the people who got ten out of ten, or even potentially eleven if you put Twittler or Donald Vader in there. All right, so who got seven out of ten? All right, two or three people. Who got eight out of ten? All right. Who got nine out of ten? Anyone get ten out of ten? Okay. 11 out of ten? We've still got heaps of chocolate, so let's go backwards. How about eighters? Sevens? See, this is why we wear bright-coloured jackets and give away chocolate. It's all flash and zero substance. Okay. And now Gus is going to play the next half of the game.

**Dr Angus Hervey**

All right, for this one you get two bars of chocolate if you get more than two out of ten.

At the UN last week 187 countries signed the strongest trade accord ever banning the sale of plastic waste across borders. Did anyone get that?

The number of incarcerated people in American prisons has declined again, to 1.48 million people, down from 1.61 million in 2009. Anyone? Did anyone get that?

A new Ebola vaccine is out. It's 97.5 percent effective. It's been administered to over 90,000 health workers on the frontlines for Ebola. Anyone? Put your hand up if you get any of these.

Malawi has just eliminated Trachoma. That's the leading infectious cause of blindness worldwide. It's actually the second African country to do that, after Ghana. Anyone get that one? The Philippines has just passed a universal health care act, entitling 107 million citizens to universal healthcare. Anybody get that one? Nope.

The Indigenous Waorani community of Ecuador has won a landmark case against oil companies, protecting 180,000 hectares of their land against exploitation in perpetuity. Anybody? Great, all right. Those people need some chocolate.

South Korea has just announced their latest food recycling statistics. They used to recycle two percent of food waste. They now recycle 95 percent.

## **Audience**

Wow.

## **Dr Angus Hervey**

Anybody? Anybody get that one?

Great. Germany's greenhouse gas emissions have declined by 4.2 percent in 2018.

That is the fourth largest economy on the planet, and the largest economy in Europe.

Anybody get that?

Chile has just taken over management of a 10-million-acre park following the largest land private donation in human history – 10 million hectares in Patagonia, also in perpetuity. That happened two weeks ago. Anybody get that? No.

Half of Costa Rica is now covered in forest. They've doubled forest cover in the last 30 years. That's a huge carbon sink and a massive draw for tourists. Did anybody get Costa Rica? That came out last week.



## **Dr Angus Hervey**

You got Costa Rica? All right, we'll see if we can get some chocolate to you.

Did anybody get nine out of nine? OK, did anybody get two out of nine? Great. Did anyone get one out of nine? Fantastic. Congratulations.

Okay, I think you've kind of seen our point. Why is it that we all know about those negative stories, but almost none of us have heard of these positive stories? That question hit me like a ton of bricks in 2013, after the last federal election. I'd just finished my PhD. I was an environmental economist looking at deforestation. After a decade spent in academia trying to understand why people cut down forests, I was broken. I'd spent so long looking at the problems that I had forgotten how to look at

the solutions. I felt like the world was a terrible place and I wanted to do something about it.

So I went out there to try and understand what's going on. And the problem was that because I was only looking at the problems, I'd forgotten what the solutions looked like, and I'd spiraled downwards into a really terrible depression. I didn't eat properly for months, I wasn't drinking properly. I wasn't speaking to my friends or my loved ones – which is really weird. Why is it that we shut ourselves off from the people that love us most just when we get depressed and really need them?

Then, just when I felt I couldn't go on anymore, I read an article by the English journalist George Monbiot, and he said that if environmentalists had deliberately set out to alienate as many people as possible, we couldn't have done better if we had tried. For 50 years, we've been telling people stories of doom. That's been a really great way to get everyone's attention, but it's a terrible way to drive action. I decided that day that I would no longer give into stories of fear.

Around that time I met Tane, and together the two of us started Future Crunch, and what we did was ask, "If we change our radar and start looking for solutions, what kind of world can we see?" And the world suddenly started looking very different. So for the next 45 minutes we're going to show you what we found. Is everyone up for that?

**Audience**

Yep.

**Dr Angus Hervey**

Are you sure?

**Audience**

Yeah.

**Dr Angus Hervey**

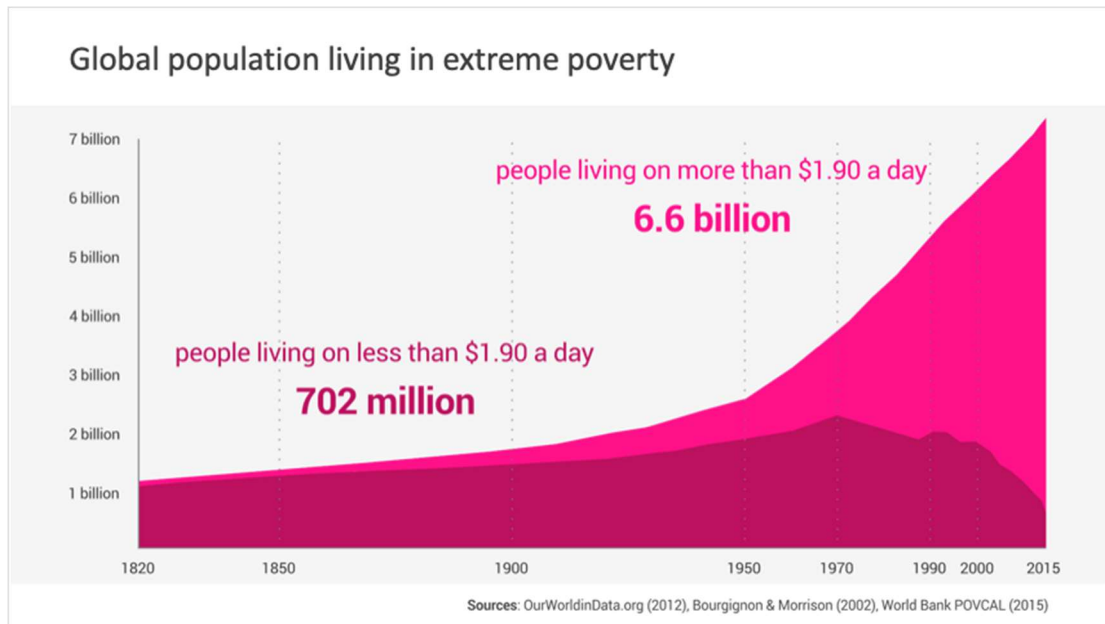
Okay, great. So, let's do it.

**Tane Hunter**

Yeah. There really is another story out there. One backed by evidence and science. It tells us something very different about the world.

Poverty, for example. Franklin Roosevelt once said that the test of our progress is not whether we add more to abundance for those who have much, it's whether we have enough for those who have too little. And if we use that as a mark of progress, the world looks like a very different place.





For example, the World Bank's newest figures on extreme poverty show that it's dropped to 8.6 percent of the global population – the lowest proportion, and the absolute number, in human history. On average, since yesterday, 130,000 people have been brought out of extreme poverty. Extreme poverty is soul-destroying: one meal a day, no dentist, no doctor – one accident, one illness, could end your life. If you get one meal, it's probably some grey porridge sludge, and if you're lucky enough to have clean water you probably have to walk miles every day to get it. Now 130,000 people every day don't have to do that. That should be one of the major news stories we read in the paper every single day.

### **Dr Angus Hervey**

Global inequality is decreasing as well. Many of you remember that when we grew up there was the first world and the third world. That world no longer exists anymore. There's now a massive chunk of people in the middle – the new global middle class. The Brookings Institute says that one in two people on the planet now are classed as middle class. That means they can afford a motorcycle, they can afford occasional healthcare, and they have enough money at the end of the week to go to the movies. Quality of life is improving too. 91 percent of the world's population now has access to an improved water source. Tane, it's up from 76 percent in the 1990s, right?

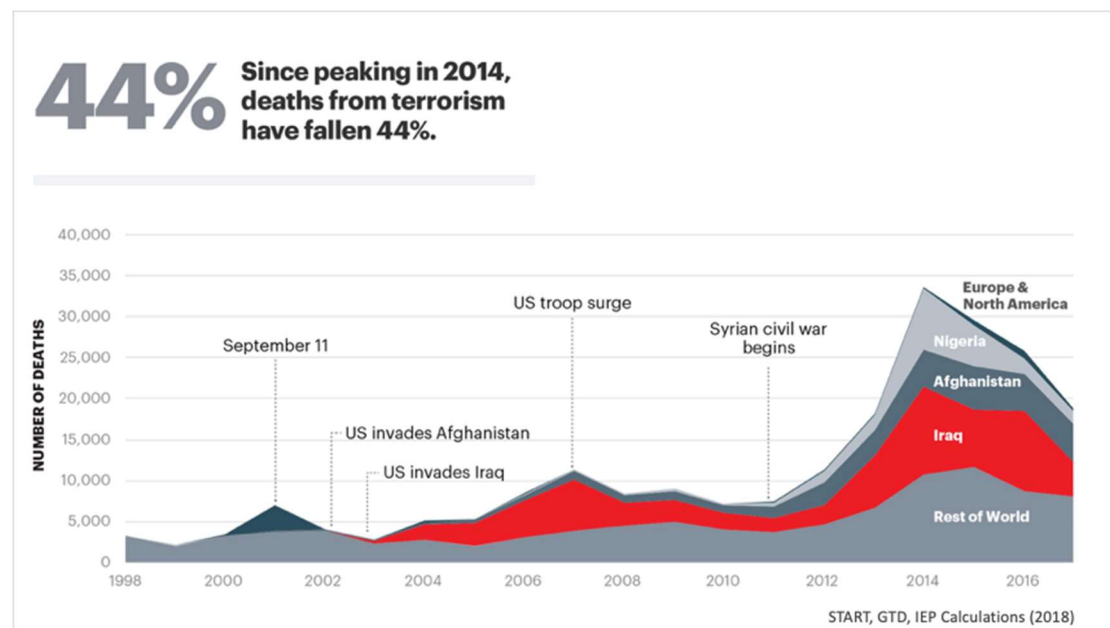
### **Tane Hunter**

Exactly. Quality of life is totally improving worldwide. In one major story, 500 million people in India – one of the greatest stories of sanitation of all time – don't have to defecate in the streets anymore. Since 2014 they've installed 90 million toilets. The vast majority of households now have access to a toilet, something that we often take for granted. Humanity is finally taking care of their shit. In the past 25 years, two billion people have gained access to electricity. In places like Bangladesh, it's gone in the last ten years from 20 percent having access to electricity up to 80 percent. That means you can do your homework at night. You can have a refrigerator, or watch the television (hopefully not elections, especially Australian ones). Electricity is something that we often take for granted.

Despite popular belief, thanks to better preparedness and early warning systems fewer people are dying from natural disasters than at any point in recorded human history.

### Dr Angus Hervey

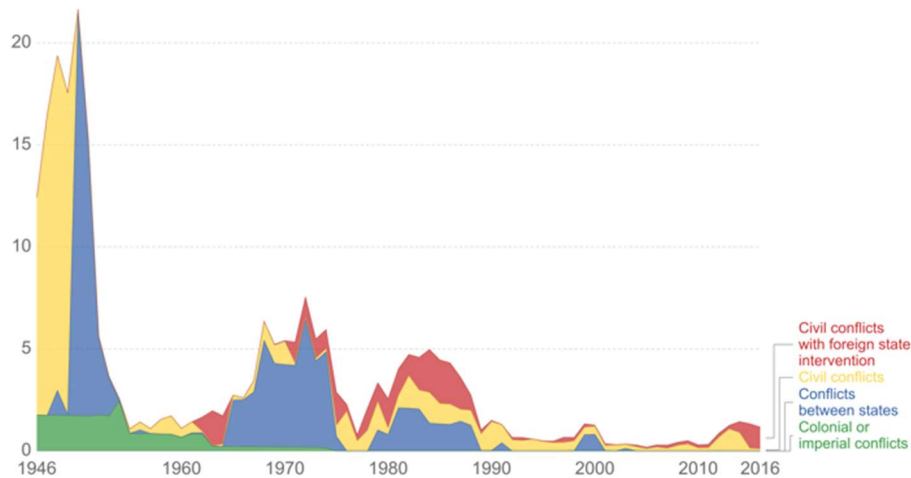
War and violence are also declining. In fact, in the majority of countries the global murder rate has declined for the last decade. There are 180,000 people walking around today who would have been murdered if murder rates globally had stayed the same as they were a decade ago. The world is becoming less violent. In places like the United States, the crime rate has come down by more than five percent every year in the last five years, and in Australia the murder rate has dropped to its lowest rate ever recorded. That made front page news in every Australian newspaper, right?



What about terrorism? Well, despite the fact that we see so much about terrorism in the main headline news, what most of us don't realise is that terrorism has declined markedly since its peak in 2014. Attacks from Daesh are down by 50 percent in the last year. Terrorist attacks are down by 33 percent in the last year. Fewer people are affected by terrorism in war-torn countries, which is where the majority of terrorism actually takes place. And the world is becoming more peaceful.

That sounds like fake news, right? But it turns out that following the peace accord between the government and the rebels in Columbia in 2016, all of the war in the world is now contained to an arc that stretches from Nigeria through to Pakistan, and that arc contains less than a sixth of the world's population. What that means is that war now affects fewer people than at any other point in human history. And within that arc, too, things are getting better.

## State-based battle-related deaths per 100,000 since 1946

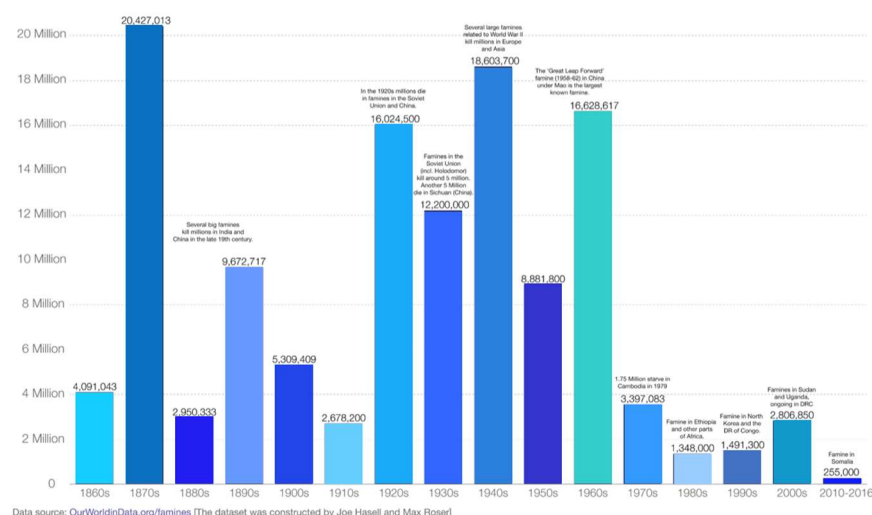


Boko Haram is on the retreat in many of its territories. The terrible violence in Pakistan in the last few years has abated significantly, and the carnage in the Middle East, despite how horrific it has become, has in some places started to get better as well. You'll often hear military leaders say that we live in the most dangerous times ever. Statistically speaking, that's the fake news. War now kills fewer people than at any other point in human history. It's just that our visibility on it has improved.

## Tane Hunter

All right, so that's war. What of War's fellow horseman of the apocalypse, Famine?

## Famine victims worldwide since the 1860s



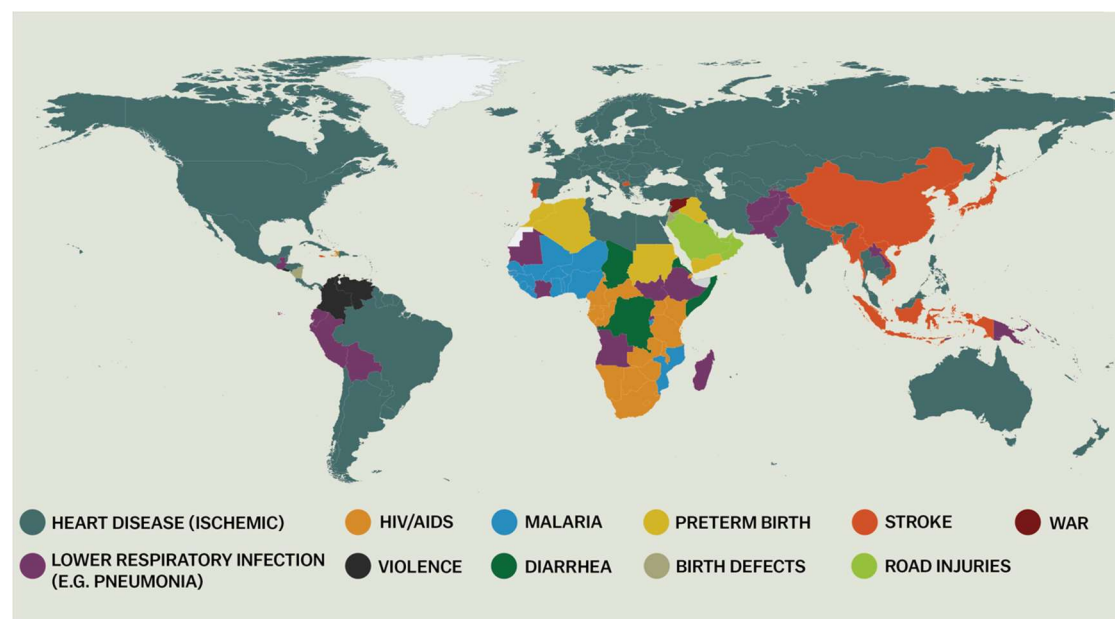
Well, the world population suffering from hunger is now at 11 percent, down from around 15 percent in 2010, and even those people who are hungry have less of a caloric deficit – down from 155 calories to 88 calories. Now 20 percent more food is produced per person than in 2006 – yes, some of our agricultural practices are unsustainable and questionable, but we're seeing the rise of regenerative agriculture



combining modern and traditional techniques, and things such as vertical farming, popping up all over the world. And to be honest, there's plenty of food on the planet. There is no deficit. We just need to do much better about how we distribute it and to reduce our food wastage. Famine is on a decade-long decline. Admittedly, there's been a recent uptick thanks to political unrest and war in Yemen, but the trend is very clear. We're seeing fewer people affected by famine than at any other time in human history.

### Dr Angus Hervey

Okay, so what is it that actually does kill people? If war doesn't kill people, and famine doesn't kill people, then perhaps it's something else. Well, if you look at the leading causes of death globally you'll see that in general it's the other horseman of the apocalypse, Pestilence, who kills most human beings.



Interestingly, here you see there is one country where road injuries kill more than any other. Saudi Arabia. Any ideas why that might be the case?

### Tane Hunter

Not enough women drivers on the road.

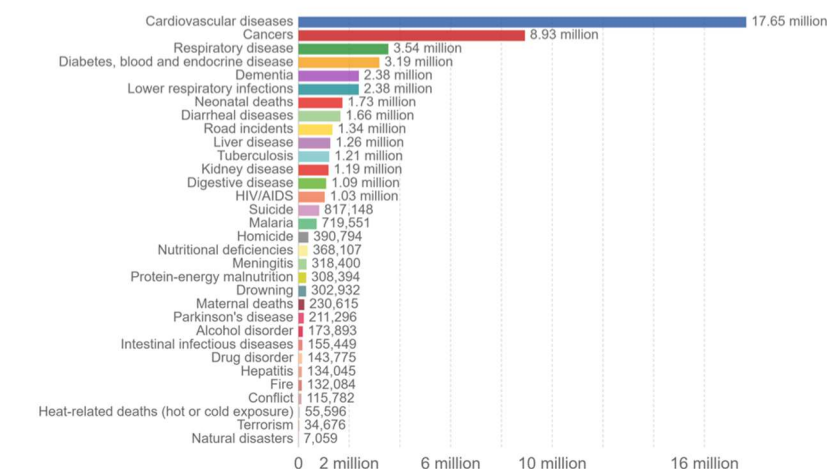
### Dr Angus Hervey

So, if we're all being killed by disease, how are we doing over there? What kind of diseases actually kill us?

### Tane Hunter

Well, the main ones are largely the non-communicable ones, the non-infectious ones. Cardiovascular disease takes the cake; cancer, respiratory disease and diabetes are the top four.

## Annual number of deaths by cause, World, 2016



Source: Institute for Health Metrics and Evaluation (IHME); Global Terrorism Database (GTD); Amnesty International  
OurWorldInData.org/causes-of-death/ • CC BY-SA

And if you look back at that graph, natural disasters are basically non-existent. Doctors' bad handwriting kills more people than natural disasters. Healthcare is amazing, too. I work down the road at Peter Mac. I'm a cancer researcher. I read the code of life – DNA – and figure out which particular changes are causing cancer. But cancer, and diabetes, and respiratory issues are all on a decline. Cancer, for example, is down by 22 percent here in Australia since the 1980s, thanks to the incredible minds of doctors, researchers, scientists, nurses, and volunteers. Keep in mind, too, that we're just getting started. Dementia is actually on the decline – down by 20 percent in the UK, for example, thanks to better diagnosis and better diet. We're feeding ourselves in better ways.

### Dr Angus Hervey

So what about infectious diseases? Well, we're on the verge of eradicating polio. That is a disease that used to kill, cripple, and maim hundreds of thousands of people within the memory of many people in this room. Polio cases in the wild are now down to 17 globally last year – in Afghanistan and Pakistan, the last two places where this terrible disease exists. At the beginning of this year the World Health Organisation announced that it now has a vaccine for cholera. Cholera is a disease that at various times in human history we called the great death. It's killed tens of millions of our fellow citizens. And we now have a new malaria vaccine that's just starting to be rolled out in Malawi. Ghana and Kenya are about to follow suit. At the moment, malaria is the deadliest infectious disease on the planet, and we've finally invented a vaccine that's cheap enough and effective enough to start fighting back against this deadly foe. And, as we mentioned in the beginning, there's a new Ebola vaccine now being trialled in the Democratic Republic of the Congo. That vaccine is still in its experimental stages, but it's been shown to be highly effective, and it's starting to be rolled out to all frontline health workers.

### Tane Hunter

Six billion people around the world are getting vaccinated, and it's largely due to volunteers helping out. 86 percent of children are now vaccinated for some of our age-old killers.

**Dr Angus Hervey**

In 2017, Mexico became the first country in the Americas to eliminate trachoma. In 2018 Ghana was the first African country to eliminate it, and, as we said before, Malawi has just become the second. That's the leading infectious cause of blindness worldwide. Again, this is thanks to the unprecedented concentration on healthcare by hundreds of health workers and clinics in a lot of African countries that are starting to prioritise this disease. Rwanda has just achieved universal eye care for all of its 12 million citizens. Rwanda has one of the leading healthcare systems on the African continent – 12,000 registered nurses all across the country, linked digitally by mobile phones, who are starting to take better care of its citizens. In South Africa – my home country – there's been a 44 percent drop in AIDS cases since 2012. That's in the country with more AIDS patients than anywhere else on the planet. UNAIDS is now saying that thanks to the rollout of RAVs and treatments we may be looking at the end of this disease by the 2030s. Malaria is the deadliest infectious disease on the planet, and we've managed to reduce malaria cases by more than half since 2000. Compared to just a generation ago, 440,000 people a year are now walking around who didn't die from malaria. That's an extraordinary global healthcare achievement, but it's just not something that we talk about.

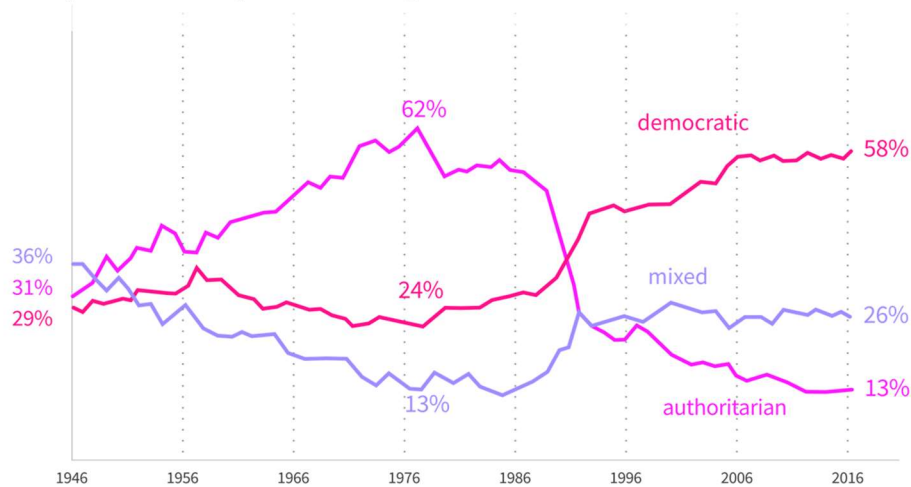
**Tane Hunter**

As a result of treating these preventable diseases, we've saved the lives of 122 million children since 1990. That's one of the greatest stories humanity has ever had to tell, yet we just don't hear about it. And the lives of those kids are improving, as well. New statistics from UNESCO say 94 percent of boys and girls around the world are learning to read and write. We're going to have a generation that's much more literate than the current one, and they'll be assisted by a lot of spell-checking apps. The International Labor Organisation announced at the end of last year that 98 million more children – and this is one of my favourite statistics – now actually get a childhood and aren't forced into slavery or sex work.

**Dr Angus Hervey**

What about political and civil discourse and tolerance? I mean, that's getting worse, isn't it? Well, depends on where you're looking. If you look at the historical trend, in fact, democracy globally has never really been healthier. We tend to concentrate on the minute ups and downs of the last few years – to forget that globally, democracy is now by far the most popular choice for most countries and authoritarian regimes are largely in decline. This year, 1.9 billion voters will vote around the world in countries like Nigeria, India, South Africa, and Indonesia - countries with hundreds of millions of people. This is the largest number of voters in human history.

## Proportion of political regimes since World War 2



Sources: Centre for Systemic Peace (2017); Pew Research Centre (2018)

Never before have so many people had the democratic right to choose their leaders. You've all heard stories from the Philippines or Brazil about the decline of democracy, but you probably didn't hear about the election of Abiy Ahmed, Ethiopia's new prime minister and a democratic superstar. He's said "From this time on, war is not an option for the people of Eritrea and Ethiopia. What we need now is love." See – it's not *just* Jacinda Ardern.

We're also starting to see better female representation – 23.9 percent of women in parliaments around the world. That's still a shockingly low number, but it's up from 11 or 12 percent at the beginning of this century. That's a doubling of women in parliaments around the world, and as more voices start to get heard, we start to get better policies for a wider proportion of our populations. Morocco has just passed a new law making violence against women illegal. There are strong new controls against domestic violence. In Nepal they've banned the practice of chhaupadi, which separates menstruating women from the community. That practice is now banned and is punishable by jail time. Female genital mutilation is down to eight percent in East Africa – still a shocking proportion, but a generation ago it used to be 71 percent.

### Tane Hunter

That's huge.

### Dr Angus Hervey

In North Africa, East Africa, and West Africa, we've seen a dramatic decline in FGM practices in just one generation

On International Women's Day in 2016 India made it compulsory for all women working in public and private establishment to get 26 weeks of maternity leave. That's a country of 1.2 billion people. Think about the change that that single regulation will cause.

### Tane Hunter

Denmark just became the first country to take transgenderism off the mental illness list. Canada recently made it illegal to discriminate against transgender people. Nicola Sturgeon, Scotland's first Minister, has made it compulsory for the state school

curriculum to include information about LGBTQI rights and sexual health. Germany just became the eighth country to add a third gender option (i.e., 'other') to its passport applications, after Canada (seventh) – and the sixth was Pakistan. In Serbia, Ana Brnabić was the first openly gay woman prime minister, and even the fighting Irish, Leo Varadkar –

**Dr Angus Hervey**  
Varadkar.

**Tane Hunter**

Yeah, I always get the name wrong – he's the first gay prime minister of the typically male-dominated fighting Irish. Taiwan became the 25th nation in the world to make gay marriage legal, the first in Asia – and before Australia – and they did it four days before making it illegal to eat cats and dogs. This stuff can actually be quantified in terms of saving human lives. Since same-sex marriage was legalised in the United States we've seen a 14 percent increase in suicides in the LGBTQI community. This stuff is important.

**Dr Angus Hervey**  
Here's an incredible story: global suicide rates have declined by 38 percent since 1994.

**Tane Hunter**  
Sounds like fake news.

**Dr Angus Hervey**  
That doesn't sound correct, because so many of us are concentrating on mental health issues in our own communities, but for most of the world life has gotten better in the last generation. The reason these suicide rates have declined so drastically is because young women, mostly in India and China, are no longer forced to marry young and forced into situations where they feel as if they have no hope. In the Global World Values survey, 85 percent of the countries surveyed said that happiness has increased in the last decade. Seven in ten people said they experience enjoyment, felt well-rested, and smiled and laughed a lot on the day before the survey. And 87 percent of people on the planet now say they are treated with respect.

**Tane Hunter**  
That was the largest survey ever conducted, right?

**Dr Angus Hervey**  
Absolutely.

**Tane Hunter**  
A lot of these statistics and understanding come from science, and science can give us insight into why we find these stories are so surprising. For example, I'm a science nerd, a biology nerd, and I've had a love affair with the study of life since I can remember. That wasn't my first career, actually. My first career was actually mountain biker. I got a US national title, and everything was looking pretty sweet – until I broke my back, and then that all fell away. My reason for being, the reason I got up in the morning, was taken away. After a bit of healing and a lot of reflection, I

decided to go sailing. I ended up sailing from the Galapagos to New Zealand, where I lived for a couple of years. Yeah, kia ora - go Kiwis. And halfway through the Cook Islands, as serendipity would have it, I ran into a whale dissection, and I got interested and went to have a look, and so I was fascinated. My sailing across the ocean made me fall in love with all marine creatures. They're so alien, and interesting, and beautiful, and a lot of people know dolphins and whales show human anthropomorphic emotions. I really wanted to be a marine biologist. So I went to this whale dissection. It was hot, disgusting, stinky, volunteer-led work, and a lot of the volunteers gave up, so I put my hand up. For three days I helped dissect a whale for scientific research understand why it has beached itself, because we're seeing that around the world and it's important work. The project was being run by this woman from Harvard Medical School, Darlene Kenton, and to her I professed my love of marine biology. She told me, "That's great, but it's a saturated field. All the cool animals are taken. You're going to do your PhD on a sea sponge or something like that – why not learn something like genetics? The code of life? Because if you learn to understand that, you can apply it to all facets within biology."

After that I gallivanted around New Zealand for a while, doing some hospitality and some winemaking, but my mind was atrophying and that love of biology was always there, so I came to Melbourne to learn to study genetics and the code of life. And now at Peter Mac I write machine-learning AI algorithms that read DNA and figure out the changes that cause particular cancers. We follow patients' treatments and figure out where resistant strains are emerging so that we can change track and hopefully improve patient outcomes.

But science is much more than medical advancement. For example, the wise Carl Sagan once said "Science isn't just a body of knowledge; it's a way of thinking, and it's a way of skeptically interrogating the universe with a fine understanding of human frailty." It's the best method that we all have to make sense of this world around us. Unlike ideology, science allows for correction, so it constantly evolves, and given just a single piece of contrary evidence it insists that we rethink everything that we once knew. As scientists, we actually get excited when we get it wrong, because that means we've learned something. That's why science is fucking amazing. Any science fans out there?

### **Dr Angus Hervey**

So, what does any of this have to do with this talk?

### **Tane Hunter**

Science, and in particular neuroscience, can give us great insight into why some of these incredible news stories seem so surprising to us. Inside my brain, inside Gus' brain, inside all of your brains, is an alarm bell. It's a small almond-shaped set of neurons called the amygdala, and when we see something dangerous or scary or we read those bad headlines and watch the Australian election on TV, it overrides all the higher-functioning parts of the brain. It's what's called the amygdala hijack. We stop thinking rationally. In evolution, it's part of the reason your feet are moving even before you realise it's a crocodile jumping out of the water at you. To make things even worse, we have what's called negativity bias, which is the psychological phenomenon by which bad news, bad emotions, and bad experiences go straight into long-term memory, but the good stuff takes much longer to sink in. All of our brains, in effect, work like Velcro for the bad stuff and Teflon for the good.



**Dr Angus Hervey**

The problem in today's world the biggest threat isn't predators with teeth. It's predators with cameras, because the media knows you're primed to look for negative stimuli and they use that to sell you stuff. A 2015 study at the University of Michigan showed that we tend to linger about 30 percent longer on bad news stories than when we're looking at good news, and when we read bad news it actually has a physiological effect. Our heartrate goes up and our sweat output increases. Humans are empathy machines.

**Tane Hunter**

We're pretty good at taking other people's emotions and feeling them ourselves. Anyone got sweaty palms?

**Dr Angus Hervey**

What we're doing when we see those things going on in the world is that we actually take on board those emotions ourselves.

**Tane Hunter**

And to make things even more complex, we have what's known as confirmation bias, and it's incredibly powerful. It won Daniel Kahneman a Nobel prize in 2002. It's our tendency to actively seek out information that confirms our pre-existing notions, and it's part of the reasons we've all woken up in our bad-news-filter bubbles pointing at each other and saying, "You're the ones with the fake news."

Then we have the availability heuristic, which is that we give more importance to the news we've heard most recently. It's easily accessible in the brain, and it's often negative. And we've got the backfire effect: when we form really strong views about the world we really dig in when they're challenged, and we fight even harder just to stay with those beliefs. Everyone has felt that, right? When you're challenged, you get defensive.

**Dr Angus Hervey**

When you combine all these things together you get simply horrible feedback loops. The media pushes bad news at you, because they know that's what gets your attention, it's what sells. When we read bad news we feel bad about the world. Then we go out looking for more news that confirms our belief that the world is bad, and there's plenty of that available out there. It's available on all the channels on your phone screens and on your Facebook feed, and so the whole cycle starts again. You've heard the expression, 'if it bleeds, it leads.' That's not a colloquialism coined by some cut-throat tabloid editor. That's a potent evolutionary truth that lies at the heart of the modern-day media machine. The media doesn't tell you what's going on in the world, the news doesn't tell you what's happening; the news tells you what's rare. There's another aphorism in news rooms – "We never write stories about planes that land." So when you are reading the news, it's not keeping you informed. The news is giving you a negative image of the world, both tonally and photographically, and that tends to warp our view of what's going on. And the problem is, because we're all on social media, we're now sharing that news. These are the two most shared news stories on Facebook in 2019.

## The most widely shared stories on Facebook in 2019



Norman Lab (2019)

### Tane Hunter

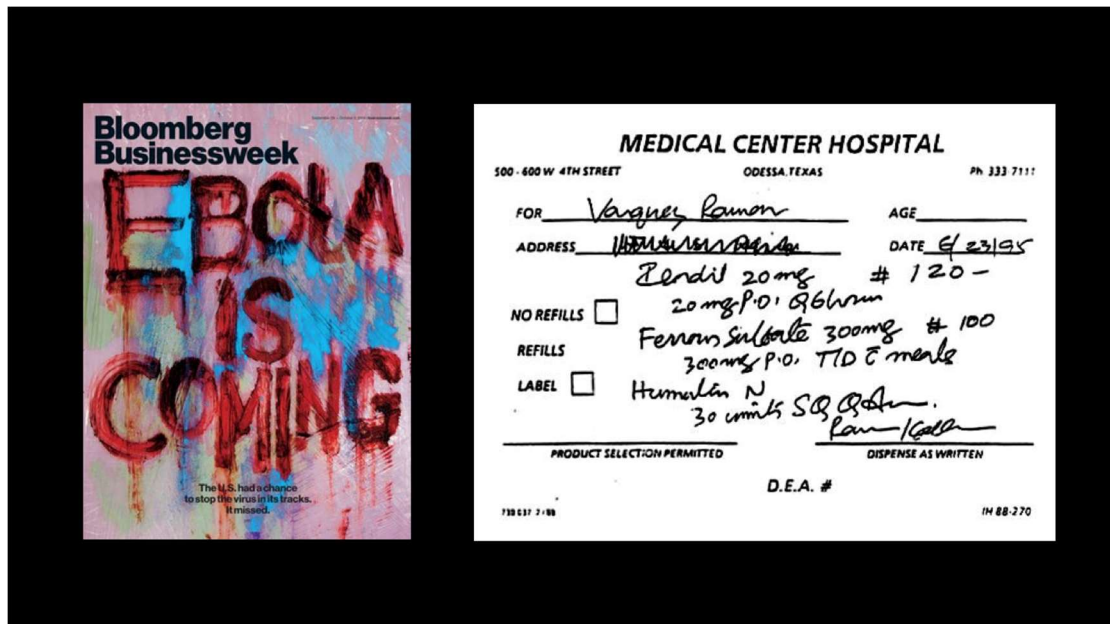
Which one is fake, Gus?

### Dr Angus Hervey

What's going on is when you give four billion apes the ability to share news with each other, it turns out the thing we like doing most is sharing news about tigers and bushes. That's how we operate. We're in the middle of a kind of fear virus outbreak. Every time something bad happens on the planet it sweeps through the global community like wildfire, leaving us all paralysed. And because we've trained our brains to seek out those stories, we actually re-wire them. Neuroplasticity kicks in, which means that we actively start seeking out the information that confirms that bias. You know how it's harder to read at nighttime now, to pick up a book? The reason for that is that you've changed your brain by looking at too many news stories on your phone.

### Tane Hunter

That's why things like Ebola make headlines, but the incredible new vaccine for Ebola didn't make any magazine cover. Speaking of vaccines, I'm very sorry if there are any anti-vaxxers here, but I do want to point out that the doctor who originally published that anti-vaccination study in 2006 has since lost his medical license and had the article retracted. Most of the information about anti-vaxxers was actually pushed by Russian artificial intelligence bots to disseminate misinformation to divide communities; just keep that in mind.



Things like Ebola make headlines as a big epidemic, but bad doctors' handwriting didn't, even though they kill more people than natural disasters and Ebola. It's why we celebrate things that are dangerous and scary – professions like fireman –



We had to work out a lot for that photo.

**Dr Angus Hervey**

You had to work out a lot for that.

**Tane Hunter**

But we don't celebrate professions like nursing, and nurses actually save more lives than firefighters. The reason why they save more lives? Well, they can read the bad handwriting of doctors.

**Dr Angus Hervey**

Then you've got the predators in front of the cameras. Not only does the media know you're primed to look for negative stimuli, so do the politicians, and they also use negative stimuli and bad news to sell you stuff. On the right they tell us that crime, terrorism, and immigration are coming. On the left, we say that bankers are the devil and that capitalism is a predatory system. The environmentalists tell us that water wars are on the horizon, that forests are dying, the oceans are dying, and we're all on a collision course with a climate-change time bomb.

**Tane Hunter**

Now, regardless of what side of the aisle you're on – and I'm pretty sure most of us in this room are on the same side of the aisle – and regardless of what your political beliefs are or what your ideology is, the problem with this fear-based rhetoric that dominates modern-day media and politics is that while it may galvanise a few people into action, for the vast majority of humanity it breeds cynicism, apathy, hopelessness and hate. And those emotions don't create solutions.

**Dr Angus Hervey**

We should be preparing for a world in which things are getting better. Optimism doesn't have to be a reaction to the world around you; it's a choice by which you can navigate the world around you. Once you make that choice the world starts to look very differently. And so we'd like to spend these last ten minutes to talk about the thing that we're probably most passionate about, which is what's going on in the environment globally. Is everyone up for that?

**Audience**

Yeah.

**Dr Angus Hervey**

We want to show you what happens when you switch that filter and start looking for the solutions rather than the problems.

**Tane Hunter**

Thanks to science, we're going to be digging a lot less black rocks and dinosaur juice oil out of the ground. We're going to be getting it from the sun – the most sustainable resource on the planet – our winds, our tides, and our molten core. Our screens are filled daily with trouser-thrusting politicians. Ignore them, because there's a quiet revolution going on in the background. It's not being driven by politics or environmentalism or altruism – it's being driven by the bloodless logic of the marketplace. Worldwide, we're well past the cusp; we're already spending more on renewable energy than dirty energy. In fact, we spend more than twice the amount on clean energy as we do on dirty energy. In almost every country in the world it's cheaper to build new solar and wind than it is to build more coal plants. That's already happened. In many countries now it's actually cheaper to build new solar and wind farms than it is to continue running our existing coal infrastructure. This stuff is starting to bite. For example, in the UK, the country that started the first industrial revolution, they just went a week without burning coal, for the first time since they started igniting those black rocks in 1882. Coal plants like this are long gone. Let's be honest, they've been replaced by penthouses for rich Russian oligarchs, but a few kilometres down the Thames the iconic Blackfriars Bridge is covered in super-sexy

solar panels. Did you know that Saudi Arabia, the largest producer and exporter of oil in the world, has now announced a solar plant so big it's going to power the entire country by 2030?

**Dr Angus Hervey**

The United States - here's a figure for you - three quarters. That's the proportion of coal plants on the United States that are now more expensive to run than it would be to build new local renewable energy. They're actually calling this the 'coal-cost crossover' in the US, and last month, for the first time in US history, the country generated more electricity from renewable sources than it did from coal. Now, climate change might be controversial in the United States, but do you know what isn't controversial? Clean energy. Three quarters – that's the proportion of US wind farms that have been built in states that voted republican in 2016.

**Tane Hunter**

Yee-haw.

**Dr Angus Hervey**

The reason clean energy is popular in the United States? Jobs. There are three million jobs in the clean energy sector in the United States compared to 50,000 coal jobs. The media loves reporting on the loss of coal jobs, because that's bad news, but no-one ever goes and interviews the people who are installing solar panels on the roof in the Bronx. In the first two years of this administration, the United States closed more coal plants than during the entire eight years of the Obama administration. It turns out that he-who-shall-not-be-named truly is making America great again. Three quarters in India, that's the percentage of new electricity added to the grid from wind and solar in 2018.

**Tane Hunter**

And India is one of the great last hopes of the coal barons. In fact, their energy minister, Piyush Goyal, has publicly stated that coal is too expensive and too risky, and they want to stop imports as soon as possible. Sorry, Adani.

**Dr Angus Hervey**

Three quarters - that's the percentage of public electricity that was generated from renewable energy in Germany on Easter Monday this year. You need nuclear and coal for baseload power, right? Wrong. Because, in a figure that should strike fear into the heart of every fossil-fuel dinosaur on the planet, three quarters – that's the percentage price drop in batteries since 2012. You'll hear cynics say that wind and solar can't ever meet the demand, but they're looking at the wrong indicators. The last few years have been about getting the prices down. The question now is "How fast can we deploy?" And the good news here is that we can deploy pretty rapidly.

**Tane Hunter**

And the technology is improving all the time. Modern wind turbines are marvels of human ingenuity and engineering savvy. They have twice the capacity, and generate four times the amount of electricity, than their predecessors of just a few years ago. We're taking their ginormous blades offshore to harness the power of gales. In our deserts we're seeing huge fields of gleaming glass which harness energy from the sun through pillars of molten salt. Gigafactories are popping up in the deserts of Nevada,

Mongolia, and Spain, churning out the batteries for the future generation of this energy revolution.

**Dr Angus Hervey**

And that revolution isn't just about wind, solar and batteries; it's about artificial intelligence for grid management, it's about blockchain for energy distribution, it's about a new decentralised grid that's fit for the 21st Century, it's about solar floating farms that are being floated out over old coal quarries, it's about a new hydrogen economy that's emerging, and a new lithium mining boom. We're talking vertical farming, precision agriculture; we're talking zero carbon building materials.

**Tane Hunter**

And we're even installing solar into clear glass, thanks to a father/son team in Perth. Check it out.

**Speaker**

It's another Australian first, and we're really getting ourselves out there in terms of thinking about the next phase of our integrated energy and solar rollout. There's lots of roof space, and we'll eventually take all that up, and then we'll take a functional form that sits around us here in Chadstone - for example, windows and glass atriums – and turn that into clean energy for our centres.

**Tane Hunter**

Imagine a city like Melbourne when every high-rise window, every car windscreen, and our smartphone screens are energy-producing cells, and you begin to realise that cities, towns, communities can be their own energy-producing power plants.

**Dr Angus Hervey**

Okay, so that's energy. What about the environment?

**Tane Hunter**

I'm glad you asked, because there's some good news there as well. Forests are regenerating in Europe, China, and the United States and Canada. Over the last 18 years China has spent 21 billion dollars on the largest and most successful conservation effort of all time, resulting in a forest the size of Victoria. Last year they deployed 60,000 soldiers to plant a forest the size of Ireland. They're making trees; not war. India broke a record in 2017 by planting 66 million trees by volunteers in a community-led effort. That's pretty cool, but, not to be outdone by their fierce rival, Pakistan have announced the billion-tree tsunami. They've already planted a billion trees, and they want to get to ten billion in the next five years. Led by an Australian conservationist, they've planted 200 million trees since 1980. They're calling it the Great Green Wall. Not only does it stop desertification, it brings the temperature down, allows for regenerative agriculture and better cropping community (that's why you haven't heard much about famines in that area) and has created thousands of jobs for the local. This is a satellite image from NASA culminating all the reforestation tree cover around the world since 2000, and it turns out that despite losses in the Amazon and some of Africa, forest cover has increased by five percent since 2000. We've got a long way to go, but it's not all bad news, and it's largely thanks to India and China, though Australia's not too bad.



**Dr Angus Hervey**

The last three years have been absolutely fantastic globally for the oceans. We created the largest ocean reserve in human history (1.5 million square kilometres) off the coast of Antarctica. In Canada, they've created a new area called the Serengeti of the Arctic. It's the largest park in Canadian history, and it was signed in partnership with their indigenous communities in a full treaty between their sovereign nations and the Canadian government. In Argentina they've created two new marine national parks, Burdwood II and Yaganes, home to some of the most diverse and abundant marine life on the planet. Tuna stocks are recovering in the Eastern Atlantic thanks to better regulation from European regulators to stop over-fishing. The Belize reef, the second largest barrier reef on the planet, has been taken off the endangered list in the last year following, according to UNESCO, visionary steps by the Belize Government. And Belize has also doubled the amount of ocean conservation that it's doing – 12 percent of its waters are now protected, up from six percent. That happened about a month ago. What about the global fight against plastic? Well, here in Australia plastic bag usage is down by 80 percent since we saw Coles and Woolworths stop distributing plastic bags. Since the beginning of this year we've seen 11 countries implement plastic bans across the world. The 12th country actually just joined in, and that's Tanzania. They announced that last week. Interestingly, a lot of these efforts to ban plastic are being led by local communities. The plastic ban in Bali was led by two teenage sisters who mobilised the community to get those regulations passed.

**Tane Hunter**

In another amazing community-led initiative, in Mumbai a 32-year-old accountant decided he was sick of seeing Versova Beach like that and decided to pick up trash for an hour a day. People started joining him. In over a year and a half they turned the beach from what it looked like before to this. It's the largest beach clean-up in the world, and now, 127 weeks after the clean-up, turtles are returning for the first time in 20 years.

**Dr Angus Hervey**

In 2017 137 countries signed up to the strongest-ever controls on trade in endangered animals. Elephant poaching is down by more than half in Kenya following the ban on ivory trading in China. Gorilla populations have almost doubled in the last ten years in the forests of Central and Eastern Africa, and in the last decade the brown bear, the sea turtle, the manatee, the Peregrine falcon, the panda and the humpback whale have all been taken off the endangered list.

**Tane Hunter**

We still have a long way to go, but these are some of the great unsung environmental stories of our time, and we really should be celebrating them.

**Dr Angus Hervey**

So let's wrap this up. We thank you very much for your patience, and for sticking with us through a couple of these issues into your tea break. Why did we come here today to tell you these stories? Well, we want to be clear, we get it. We know that the world is not a perfect place, and that many of you on the front lines are witnessing that. We understand that this incredible surge in progress hasn't reached everybody and we also understand that we face incredible issues – climate change, environmental destruction, radical political beliefs, religious extremism, inequality,

and intolerance. Five million children still die unnecessarily every year of preventable diseases. Hundreds of millions of people cannot access the basic freedoms that we all take for granted.

But in order to be strong enough to get through the next three years, in order to take this fight back, to get organised, to get angry, you have to be able to hold two ideas in your head at once: the world is getting better, and the world is not yet good enough. And what that means is that our successes in the past should give us confidence, as communities, as we move forward into the future. Ask yourself; for the next three years, can you bring your own weather to the picnic? Can you change your mindset and start to look for the solutions in an effort to see if we can hack this terrible negativity bias that all of us seem to have when we talk about social and environmental change?

### **Tane Hunter**

And let's change our information diet. Understand that the information that comes towards us affects how we feel about the world and stops the way we can engage within it. We understand that the Internet, where we got all this information from, is a dark and scary place full of ghosts and ghouls, Trump's trolls, and rabbit holes of cat videos. So if you're looking for a good place to start, we have a newsletter. It's free. It comes out fortnightly. It will win you chocolate at our next event.

We don't do anything with your data – just 'like' what you click on – and we curate stories of good news that's outside the main headlines, about stories of science and technology and the hundreds of millions of people on our planet that are working together to make the world a better place. And we'd like to leave you with this: remember that we should cultivate an attitude of optimism, because cynicism is easy. You're never wrong or surprised or disappointed when things go bad. By contrast, if we describe the way a better future can be built we redraw the boundaries of what's possible and show that it could include paths, for instance, that lead to the end of climate change, war, disease, and asshole politicians. And we can freely admit that there are big challenges.

### **Dr Angus Hervey**

We can admit the difficulty of what we face, but we can also believe that our best hope lies in an intelligent and creative optimism, and if we combine that with science and technology and a common belief and love for each other, then that will give us superpowers as we move forward into the next phase of this fight. Thank you very much for having us, and we wish you all the best of luck for the next three years, because they're going to be tricky.

### **Tane Hunter**

Continue the good fight.

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