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engaging all Australians in creating a better future...

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FUTURE NEWS

TO CONNECT, TO INFORM AND TO INSPIRE

IN THIS EDITION

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TODAY: SCIENCE FICTION. TOMORROW: REALITY.

By Rickard Molander

For centuries mankind has dreamed about the future; dreamed, and speculated, and invented. Science fiction is the meeting between scientific reality and fictive speculation, but it has real value when it comes to understanding how people view, understand, and relate to their future. By now a venerable branch of literature after at least 200 years, the tricks and tools of the science fiction writer have become useful for more than just entertainment and diversion. These methods offer powerful ways of understanding the immediate and long-term future for a business or an organization.

In 1818, two hundred years ago, Mary Shelley's Frankenstein was first published in London. The novel reflected on scientific discoveries – that electricity was somehow tied to muscular movement – and speculated whether it might be possible to use electricity to create life. From there, the genre called "science fiction" took off. Future society would be marked by new technological innovations, from railroads to submarines to nuclear weapons to space shuttles, and science fiction authors were often among the first to make predictions about what consequences these innovations would have on human society, human relationships, perhaps even human nature itself.

So if science fiction has been a constant companion to technological development and scientific innovation, what can the science fiction of today teach us about the world of tomorrow? Naturally, science fiction writers are no oracles – they are frequently wrong in their predictions – but the methods they employ, and the questions they ask, are increasingly relevant for all kinds of organizations. Technological innovation moves at a breakneck pace and science fiction, even if it may not have the answers, can help us ask the right questions.

LIVING IN THE FUTURE, LIVING IN THE PRESENT?

What, then, is the "science fiction method"? Rather than imagining a future based in the present – one that starts in today, and then proceeds with some innovation or event in a linear fashion – the science fiction writer, by dint of writing fiction featuring characters, must instead imagine *a present*. That is to say, to imagine a future from the point of view of someone who lives in it. Just as we understand our world today, not by thinking of its history, but by interacting with technology in the context of our society, science fiction seeks to explore a

future from within. This is important, because it allows the author to consider the practical use of some new innovation, or the implications of some social change, on a wider scale that may be easily missed. For example, we today understand text messages as a mode of communication; they were originally developed as network notification systems, to be used exclusively by the network carrier. A linear reasoning would perhaps assume they would become more advanced and sophisticated notification systems; but it would hardly be able to predict that text messaging would shape the language of a generation.

"Being "reasonable" in imagining the future is often aiming too low!

SEVEN TIPS FOR THINKING LIKE A SCI-FI WRITER

1. THINK WIDER, NOT FARTHER

It is usually not helpful to continue down a pre-selected linear path; the future is seldom so obvious. Rather, try to understand the future in a broader context. When predicting a course of action for your organization, try to understand how it might interact with the world in the future – how your strategic choices fit into the context of your immediate surroundings.

2. LIVE IN THE "PRESENT"

We don't understand our own present by looking at a chain of historical events. We won't understand the future by doing so either. Instead, to understand some future scenario, try to imagine living in that present. How would you relate to this technology when it's "always been there"? What does your daily life look like? What new challenges have appeared that might not have been obvious in the past?

3. THINK WHAT, NOT HOW

Scientists and engineers need to worry about how a given innovation works. Leaders and science fiction writers alike need to worry more about what it means. A given story may be based on outdated or faulty premises, but that doesn't mean it can't be helpful in creating insight. Even if a given innovation doesn't exist in the market today, it might tomorrow. It pays off to speculate about what the consequences might be.

4. DARE UTOPIA

Being "reasonable" in imagining the future is often aiming too low! If we base our predictions on what seems reasonable today, we often make assumptions that might one day no longer be valid. Utopian scenarios allow us to account both for the reasonable and the unreasonable futures, and to remember that the unreasonable might not always stay that way. After all, today we carry powerful computers in our pockets!

> *"It's easy to think of the future as inhabited by people like us, but nothing could be further from the truth.*

5. UTOPIA CAN GO WRONG

Science fiction also allows us to see the downsides of new developments. Often, it can issue warnings about unintended consequences of some new innovation or change. Dystopias are not usually made on purpose, but come about as a result of lacking foresight. Here, by describing the worst of worlds, science fiction can help us avoid dangerous pitfalls that might turn our dream world into a nightmare.

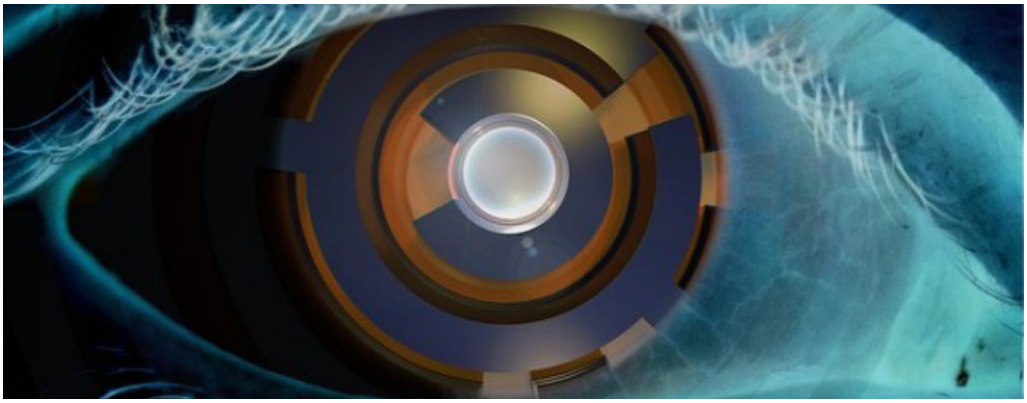
6. THE FUTURE IS A FOREIGN COUNTRY

It's easy to think of the future as inhabited by people like us, but nothing could be further from the truth. Societies and values change over time. In understanding the future, we need to use the same methods as we do to understand foreign cultures. Even the generation after us will not think and reason like we do. For people far into the future, we might need to step outside our own viewpoint and our own comfort zone even further.

7. THE FUTURE IS UNEVENLY DISTRIBUTED

The future is here tomorrow. Except not quite. Technology doesn't simply appear and then dominate the world – what's common in one area may be uncommon in another, and what's been around in labs for thirty years might suddenly become a commercial success overnight. By paying attention to the world around us, we may be able to discern parts of the future that have already arrived – just not yet on a big enough scale to be easily noticed.

CAN YOUR ORGANIZATION KEEP UP WITH THE FUTURE?



Your engineers and service designers can predict what an innovation will do, but they cannot predict how it will be received. By thinking like a science fiction writer, you can design and implement a broader strategy that isn't just hinged on a single linear change. By imagining the world as a "present future", organizations can get more holistic overviews over future situations – and by daring to rely on science fiction, they can be the first to question what seems "natural" or "immutable". Almost every part of our daily lives today has at one point been science fiction – mere fantasy, complete impossibilities.

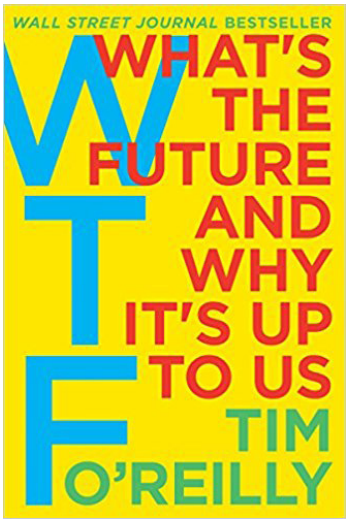
By combining science fiction with well-designed, flexible strategies, your organization can become better prepared for the (im)possibilities to come. How will you prepare your organization for the wonderful and terrifying world of tomorrow?

Rikard is an analyst with Kairos Future, about which more information can be found here: www.kairosfuture.com

WTF? What's the Future and Why It's Up to Us
Tim O'Reilly
Random House, 2017

Book Review

by Charles Brass – Chair, futures foundation



> *"There are many possible futures. The world as it is is not a given. We can reinvent it.*

Since the creation of Twitter and mobile phone messaging services it seems like more and more modern communication is being expressed in acronyms. Sometimes this is done to shorten a common expression, other times to disguise words that might otherwise be considered inappropriate. WTF falls into this latter category, although Tim O'Reilly wants to reclaim this phrase as "What's the Future?" the tile of his latest book.

O'Reilly is the founder and CEO of technology media company O'Reilly Media, and has been researching, writing and publishing on technological developments for over 30 years. He describes this book as "an unusual combination of memoir, business book and polemic" (p373) which seems to be an excellent description.

The first three chapters of the book are a tour through the development and commercialisation of the internet and its associated technology told through the voice of someone who was there for the whole journey (albeit somewhat on the sidelines). Early in his career O'Reilly recognised the need for these technologies to be explained not just to a lay audience but also to the next generation of those who would use and further develop them, and his publishing empire flourished as he commissioned (and often wrote himself) guide books to using the hardware and software of the digital age.

He describes his work as mapmaking and sees this book as a map of how, and why, technology we currently take for granted developed; before in the last quarter of the book speculating on where it might go. He gives a strong pointer to the future in the second half of his book title "…it's up to us". While he does suggest that much of what has happened to communications technology over the past 35 years was predictable, he is also at pains to point out that the way this technology has been used is as a result of choices made by human beings; and to suggest that it is similar choices that will affect the future trajectory of this technology.

For those not immersed in the detail of programming languages, communications protocols and algorithms the first third of the book goes into more detail than initially seems necessary. However, O'Reilly's narrative is always less focused on the detail of any new development than the process through which it emerged, or by which it will be used. Since he was present for many of these developments the story is peppered with first person anecdotes and recollections. The reason he takes readers through this history is neatly summed up in the last sentence of part I of the book: "there are many possible futures. The world as it is is not a given. We can reinvent it" (p86).

This doesn't end the memoir phase of the book. The second part focuses just as precisely on the development of network platforms (ie the infrastructure on which internet services are built) because O'Reilly sees these as crucial to understanding the potential future roles technology may play.

Part III then focuses on algorithms – the programs that analyse and make use of the huge amounts of data collected on platforms. These include such things as the recommendation algorithms used by Airbnb and Amazon, the referrals used to design newsfeeds by Facebook, face recognition used in ever expanding ways as well as the learning algorithms that have helped software programs beat champion humans in games like Chess and Go, and on TV quiz shows.

Here O'Reilly pauses to evaluate these algorithms as well as to describe them. He points out why they are fundamentally flawed, how they can fail and how their speed and apparent efficiency have allowed them to increasingly take over from humans in making decisions. In particular he looks at media in the age of algorithms and points out that their unchecked use has contributed to the rise of fake news and to volume of data replacing quality of data in deciding just what is news. It is here that O'Reilly begins to move into the future, pointing out that much of the development of so-called Artificial Intelligence (AI) is being built on the back of algorithms that virtually nobody actually understands any more.

He is particularly scathing of the algorithms that are driving the financial sector, pointing out that they are systematically pushing wealth (and power) into the hands of a super elite who do not seem to be acting as though the rest of the population matters very much.

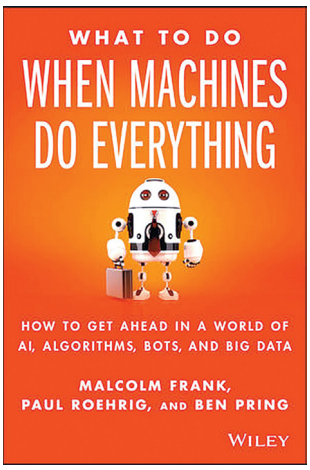
This leads to the final part of the book where O'Reilly argues that a world that doesn't work for the people who live in it isn't much of a world. He says: "The evidence is in. This rule doesn't work. It's time to rewrite the rules. We need to play the game of business as if people matter" (p273). Like many other authors he zeroes in on the way money (as a representation of value) is created and distributed as a key feature of the flawed current system. One chapter is headed: "We don't have to run out of jobs" and he describes how different policy settings (entirely within the control of those who govern) could lead to a vastly different world. He canvasses the so-called sharing economy (pointing out that viable not-for-profit alternatives to Ebay, Airbnb and Uber actually exist), guaranteed minimum incomes, and how easily human creativity is liberated once people's basic needs are met.

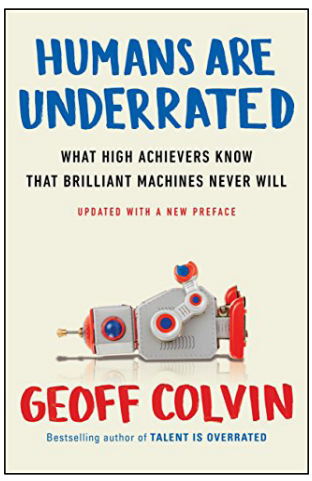
Like the two other books whose covers end this review, O'Reilly believes that the 'proper' role of AI is to augment not replace people, and he devotes many pages (p320-356) to explaining just what this might mean and how it might happen.

In his final pages O'Reilly talks much like a futurist; pointing out that foresight practitioners have long encouraged their clients to create multiple possible future scenarios before deciding which one they will choose to pursue. He passionately believes there are viable future scenarios in which the technologies he has devoted his adult live to explaining can be used to the benefit of everyone on planet Earth.

As he pleads towards the end of the book: "We need to think about the long now and the big here, or one day our society will enjoy neither" (p356).

Two other recent books that canvas the same territory as the last third of "What's the Future – and why it's up to us":





FUTURISTS IN ACTION

THE FUTURE ACCORDING TO WOMEN

What can we learn from female futurists about the world ahead?

by Tracy Follows

In 1972, Alvin Tofler published his collection of essay called *The Futurists*. His twenty-two futurists included only one women, Margaret Mead. He even omitted his own wife, Heidi. She had co-authored much of his work throughout their married life but she was never credited. Years later, he conceded the significance of Heidi's contributions and she was eventually credited as co-author.

Today, many women are contributing to the discourse of future studies but also pioneering academic research, shaping public policy and creating businesses with the future in mind. Here's how their contributions are shaping the world ahead.

Cindy Frewen
Architect and urban futurist

Frewen is an urban futurist, working on 100-year scenarios. A long view is critical in urban planning especially for her, as she advises communities on how to build in resilience with the likes of solar power, wind power and sustainable agriculture. With regard to the cityscapes depicted on screen, she says they are not a true reflection of future cities: "*Blade Runner 2049* shows cartoon cities, pretty flat, bleak, a view of the worst way we can destroy our urban settings. Actually, when you quit maintaining things, it all goes back to nature. It becomes very beautiful and growing, cities become very biodegradable. It's the humans who are at risk, not the environment."

Jennifer Gidley
Adjunct professor, Institute for Sustainable Futures, University of Sydney

Three years ago, Gidley created a collaborative research paper entitled *Women Sharing Australian Futures*. She works hard to ensure that women are not being 'screened out' of futures studies, science and technology media stories, challenging the vested interests that are keeping women out of the futures limelight. For her, the problems that need fixing are in education, as extolled in her book *Post-Formal Education*. "It's of interest to women in particular because it offers a blueprint for the transformation of education so it better suits the 21st Century". Her approach eschews the current factory model of schooling, in favour of an integrated approach that prepares young people for a life of uncertainty, complexity and accelerated change.

THE FUTURE ACCORDING TO WOMEN

What can we learn from female futurists about the world ahead?

Yvette Montero Salvatico
Co-founder, Kedge LLC

Montero Salvatico is one half of Kedge, a foresight consultancy. Previously, the futurist at Disney, she has trained people all around the world in foresight practices. She sees the future through the lens of HR and organisational learning: “The job is to help other people understand the assumptions and biases they hold, to give individuals a new perspective and show them that the future is something they can control and direct”. She liberates people to realise their own futures, like the Disney employee who, after taking the course, went on to research the future of food and has now started up an urban food planning business, with the mission to reimagine the future of food in India.

Terry Grim
Partner, Foresight Alliance

As an ex-IBM employee, Terry blends engineering, analytics and intuition in her work. She encourages women to be more technology orientated, and embrace the STEM field. She wants to see more women writing science fiction too. She advises on social change and calls on institutions and organisations to embrace a more feminine culture: “Instead of masculine values of win-lose, we need to focus on win-win, to have more women visible in leadership positions, and in many ways make the organisation more relationship-orientated”. She challenges us all to move ‘beyond pink’ and build a culture that prioritises feminine values.

Cindy Gallop
Founder, Make Love Not Porn

Gallop set up All Sky Holdings, the sex tech fund. She raises money to invest in innovative sex tech ventures founded by women to support “the enormous market that is women’s needs, wants and desires that are historically deemed too embarrassing, shameful and taboo to address in business”. She is busy incubating gaming, dating and messaging ideas whilst running her own startup MakeLoveNotPorn. Her vision for the future is clear: “Fund women. Fund female founders at the same rate as male and you manage sexual harassment out instantly. Because sexual harassment stops in a gender-equal environment.”

Signals in the Noise

30 CRAZIEST PREDICTIONS ABOUT THE FUTURE EXPERTS SAY ARE GOING TO HAPPEN

by Bob Larkin

The future! It's either going to be really, really amazing, or really, really awful. Will we be commuting to work on flying bicycles on air-conditioned highways, or replaced by robots and hiding in our homes because antibiotics have stopped working? Will cancer be cured? Will there be Internet on Mars? Will the letter Q still exist? We have so many questions, and luckily the experts have answers. Here are 30 predictions about the future that may surprise or even shock you—but one thing is certain: They're backed by some pretty smart people. So will they come true? Are they getting closer to reality even as you read this? Who knows!

1. YOU'LL COMMUNICATE WITH DEAD RELATIVES VIA VIRTUAL REALITY.

Ray Kurzweil, a futurist and director of engineering at Google, doesn't like the idea of people he loves dying any more than you do. We can't stop them from dying, but we can preserve their memories a little better than just fading photographs. He thinks we're heading towards an age when we'll be able to create virtual reality avatars of our deceased loved ones, realistic enough that we can interact with them. "This will be a way to bring him back," he says, referring to his father. "Even if it isn't fully realistic to bring these people back in A.I., it'll be close."

2. YOUR KITCHEN WILL RESTOCK ITSELF.

Amazon is already launching drone delivery, but if even that sounds like too much effort, the kitchen of tomorrow won't need you to notice that your milk is running low or you're almost out of beer. Containers will send out alerts, on their own, when they're in need of replenishing.

3. YOU'LL CHECK EMAIL WITH YOUR CONTACT LENSES.

Engineers at Samsung are hard at work trying to develop a pair of contact lenses that let you go online and read your favourite websites without lifting a finger. How does it work? Well, it involves a "light-emitting diode on an off-the-shelf soft contact lens, using a material the researchers developed:

a transparent, highly conductive, and stretchy mix of graphene and silver nanowires." They've already tested it on rabbits, who apparently have been tweeting lots of mean comments from their eyes all year. (No, that's a joke. But the contact lenses are entirely real!)

4. MARS WILL GET RINGS LIKE SATURN.

Saturn's rings always made it the most recognizable planet in our solar system, but it may lose those bragging rights in another 20 to 40 million years. Mars could one day get its own outer ring. It all depends on its moon, Phobos, which is getting closer and closer to the red planet's surface. If it doesn't crash into Mars, it will break apart into countless tiny bits, which will continue to orbit the planet. Pretty cool, right?

5. WE'LL BE COMMUNICATING WITH THOUGHTS.

The BBC is pretty confident we can make this happen in the not-so-distant future. "Picking up thoughts and relaying them to another brain will not be much harder than storing them on the net," claims futurologist Ian Pearson. Oh great, so now even our own thoughts have to be politically correct all the time? We are in so much trouble.

6. CHINA WILL UNDERGO A REVOLUTION.

At least according to George Friedman, author of The Next 100 Years: A Forecast for the 21st Century. One out of seven exports from China go to Walmart, he says, and even Warren Buffett doesn't believe Walmart has a future. "All of the prosperity of China is built on the willingness of the U.S. and Europe to buy its products," he says, and that time is coming to an end. When that time comes, he doesn't think the current version of China will be able to survive "a billion [angry] peasants."

7. WE'LL HAVE DINOSAUR ZOOS WITH REAL WOOLLY MAMMOTHS.

Thanks to advances in cloning technology, we might be able to bring back animals like the woolly mammoths. But according to Akira Iritani, a professor at Kyoto University, "Now the technical problems have been overcome, all we need is a good sample of soft tissue from a frozen mammoth." Russian scientists are working on doing just that, and the big question in the medical community isn't "is it possible," but "should we do it?"

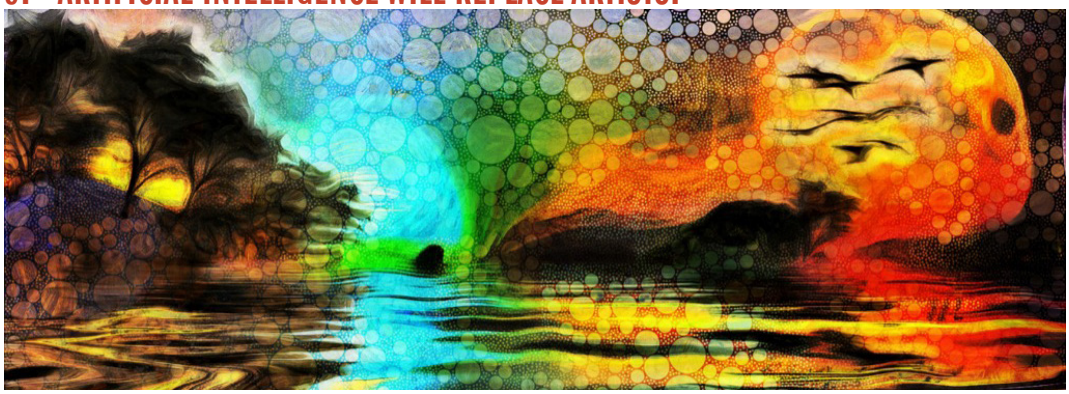
8. CGI WILL REPLACE ACTORS ENTIRELY.

CGI has been used for everything from creating new scenes of actors in their youth to replacing actors who've died. How long before it just replaces them completely? Brad Pitt and Tom Cruise can relax for now, but according to Nadia Magnenat Thalmann, a computer graphics scientist and founder and head of MIRALab at the University of Geneva, as the technology improves, anyone who isn't an A-list actor will likely be done "more and more by computer."

Signals in the Noise

30 CRAZIEST PREDICTIONS ABOUT THE FUTURE EXPERTS SAY ARE GOING TO HAPPEN

9. ARTIFICIAL INTELLIGENCE WILL REPLACE ARTISTS.



Also according to futurist Ray Kurzweil, computers will be able paint, write, and compose far better than humans ever will.

10. THE DAYS WILL GET A LOT LONGER.

We're not talking about the summer solstice, where it just feels like the days are longer because there's more sunlight. We mean literally longer. Granted, you'd need to live a long, long time to experience it, as we're only gaining about 1.7 milliseconds every 100 years. But it's still amazing to think that one of the things we consider absolute can actually be altered. It won't affect you, but your great-great-great-great grandkids are going to have a little more time in their day to get everything done.

11. YOU'LL BE EATING SWAMP SCUM.

Sean Raspet, a former flavorist-in-residence at Soylent, recently launched a new company called Nonfood that makes food entirely out of algae. As in, the gross slime that floats on the top of swamps. Pretty soon we'll all be eating food that isn't really food, some of which tastes (according to one early review) like "vinyl, and latex, and the dust of my grandfather's ashes." Yum!

12. PILLS WILL BE ABLE TO DETECT CANCER.

Google's X Lab announced in 2014 that they're working on a pill that'll send microscopic particles into your bloodstream, capable of identifying cancers and even future heart attacks long before they become deadly. We'd prefer a cancer cure, but knowing about cancer years before it's diagnosed could save millions of lives.

13. YOU'LL FLY IN PLANES THAT ARE LITERALLY ALL WINDOW.

If companies like Technicon Design in France and the UK's Center for Process Innovation have their way, everybody will get a window seat in the plane of tomorrow, which will offer panoramic views of the sky as you fly towards your destination. Relax, the windows aren't technically real, they're just cameras mounted on the plane's exterior. Still terrifying, though.

Signals in the Noise

30 CRAZIEST PREDICTIONS ABOUT THE FUTURE EXPERTS SAY ARE GOING TO HAPPEN

14. BATHROOM MIRRORS WILL INSPECT YOUR MOLES.

Worried about sun damage or the possibility of skin cancer? Ian Pearson, a senior futurologist at the U.K.-based company Futurizon, claims we'll soon have bathroom mirrors with LED displays and high-resolution cameras. "They'll be connected to the Internet so you could have a video check-up with your dermatologist," he says.

15. WE'LL DISCOVER ANOTHER 2,000 PLANETS THIS YEAR.

We've already identified 2,341 planets outside our solar system, but thanks to a collaboration between NASA and Google, that number is projected to jump to 4,496 in the near future. Will there be life in any of those planets? We'll find out soon enough.

16. NO, YOU WON'T HAVE A ROBOT BUTLER.

Weren't we all supposed to have robot butlers or maids by now? Even David Eagleman, the neuroscientist and writer, is disappointed. "I predicted that 20 years ago, when I was a sanguine boy loving Star Wars, and the smartest robot we have now is the Roomba vacuum cleaner," he says. Even though he's holding out for robot assistants, "I won't be surprised if I'm wrong in another 25 years. Artificial intelligence has proved itself an unexpectedly difficult problem."
As for fears that robots will soon steal all our jobs, Wired magazine isn't too concerned. As they reported last year, "the problem we're facing isn't that the robots are coming. It's that they aren't." Unless…

17. THE ROBOTS ARE INDEED COMING.

Only not as personal assistants and vacuum cleaners. Ask any smart person and they'll tell you, "Oh yeah, we're making robots that are way too smart. We're all doomed." Sam Altman, president of Y Combinator, a Silicon Valley startup, believes that "we will be the first species ever to design our own descendants." Dr. Nayef Al-Rodhan, a Neuroscientist and Geostrategist—which are two occupations that almost sound like fake jobs from a science-fiction movie—says that it's only a matter of time before human beings create "transhumans," which are just "improved versions of themselves that will eventually pose a threat to non-enhanced humans."

18. YOUR EVERY MOVE WILL BE MONITORED BY DUST SPIES.

Kris Pister, a computing professor at the University of California, Berkeley, came up with the idea for "smart dust" particles in the 90s, which were basically tiny sensors, almost undetectable to the human eye, which would record everything that happened in the world. From big cities to small towns, billionaires to working class citizens, everything humans do will be recorded. "It's finally here," Pister told CNN in 2010. Except not really. We don't think so anyway. Hmm. Maybe we should all vacuum our homes again, just to be on the safe side.

19. DRIVING YOURSELF WILL BE PASSÉ—AND CONSIDERED UNSAFE.

In 2020, which is just two years away, automated cars will start to become something most people take for granted. By some projections, there'll be nearly 10 million cars on the road with self-driving features. The thing that seems so weird and futuristic now will, by the next presidential election, become something that annoys you if you don't have it. You know how angry you get when you rent a car and it's an older model without satellite radio? In the next five years, cars that don't drive themselves will be the hand-me-downs that nobody wants.

20. TERRORISTS WILL BE CAPABLE OF CREATING THEIR OWN PANDEMIC.

Think terrorism is scary now? Just wait till they're making their own diseases. In 2016, Oxford's Global Priorities Project curated a list of potential future catastrophes that could kill off 10 percent or more of the human population. A man-made pandemic was probably the scariest of the bunch, not just because of the death toll but because of the human evil necessary to create it. (Sorry, every prediction about the future can't be rosy.)

21. NANOBOTS IN YOUR BLOODSTREAM WILL PROTECT YOU FROM GETTING SICK.

Okay, we're all on board with the "not getting sick" part. But tiny robots in our bloodstream, that might also be transmitting our personal thoughts to a data-mining cloud? That sounds downright Orwellian. But we like the idea of not getting cancer because of our robot protectors. Hmm. Well, if it won't be a reality until at least 2030, according to some predictions, we still have time to think about it and not seriously ponder the ethical dilemma until it's too late.

22. AN ASTEROID "MIGHT" DESTROY US IN 862 YEARS.

Wait, did we say might? That's right, based on NASA calculations, there's a less than 1% chance that a mile-long asteroid will collide with Earth, wiping out all human life, on March 16, 2880. Of course, that means there's a 99% chance humanity won't be wiped out. And as NASA is the first to admit, "the upper limit could increase or decrease as we learn more about the asteroid in the years ahead." Also, relax, you'll be dead many centuries before that happens.

23. ANTIBIOTICS WILL STOP WORKING.

We've come to depend on antibiotics as a quick fix for so many medical ailments. But what if the medicine just stopped working? What if you got pneumonia and doctors just shrugged and said, "There's not much we can do, sorry?" That time may be coming sooner than we think. In fact, a 2016 report found that the new era of "antimicrobial resistance" could kill up to 10 million people each year by 2050.

24. ROBOTIC EARTHWORMS WILL GOBBLE UP OUR GARBAGE

That's according to an issue of The Futurist magazine. Do you want to know what any of that means? Or is it enough just to know that "tiny, agile robot teams will go through mines and landfills to extract anything of value"? It's possible that the less you know about your robotic earthworm garbage men, the better.

25. YOU'LL HAVE EASY ACCESS TO ALL OF THE WORLD'S KNOWLEDGE.

That's what Google's Eric Schmidt was promising in 2005, saying that the company would eventually "organize the world's information and make it universally accessible and useful." It would take 300 years to make it happen, but it'd be worth the wait. Imagine having the ultimate Wikipedia at your disposal, but filled with all human knowledge, and none of it fabricated by trolls!

26. WE'LL HAVE PROSTHETIC BRAINS

They were first announced in 2003, but we're still years away from a commercially available "neural prosthetic." Bryan Johnson, who launched a startup called Kernel, is making strides to be the first to produce a brain implant. "Just like we've had civil rights, human rights, abortion rights, marriage rights, the next big debate to consume our society will be evolution rights," he says.

27. WE'LL HAVE INTERPLANETARY INTERNET.

We take it for granted that there'll be colonies on Mars someday. But will the red planet get any Internet access? We can't be expected to survive without social media in deep space, can we? Where will we upload all our Mars selfies? Well relax, an interplanetary Internet has been in the planning stages since 1998. When we finally make it to Mars—which could be by the early 2030s—you won't have to give up your Twitter account.

28. YOU'LL BE ABLE TO SMELL YOUR FAVORITE TV SHOWS.

Have you ever watched your latest episode of the Walking Dead and thought, "That would've been so much better if I could smell the zombies?" You may be in luck. Nicholas Negroponte, a former director of M.I.T.'s Media Lab, predicted back in 1992 that we'd soon be getting "full-color, large-scale, holographic TV with force feedback and olfactory output." It sounds exciting and troubling at the same time.

29. MOST OFFICE WORKERS WILL BE TAKING DRUGS TO WORK HARDER AND LONGER.

70% of people surveyed across the globe claim they'd let medical science mess with their brains or bodies if it helped their career prospects. And they might be in luck! Some have predicted that "smart drugs" will soon become commonplace at offices. And a 2017 report from professional services firm PricewaterhouseCoopers found that "medically-enhanced workers" will be a reality soon enough.

30. WE'LL NEED TO LEAVE EARTH.

Stephen Hawking, the world famous physicist and cosmologist, isn't very hopeful about the future of our planet. Thanks to dangers like climate change, epidemics, population growth and even direct hits by asteroid, he believes we'll need to find a way to leave Earth in the next hundred years.