

FUTURE NEWS

TO CONNECT, TO INFORM AND TO INSPIRE

IN THIS EDITION

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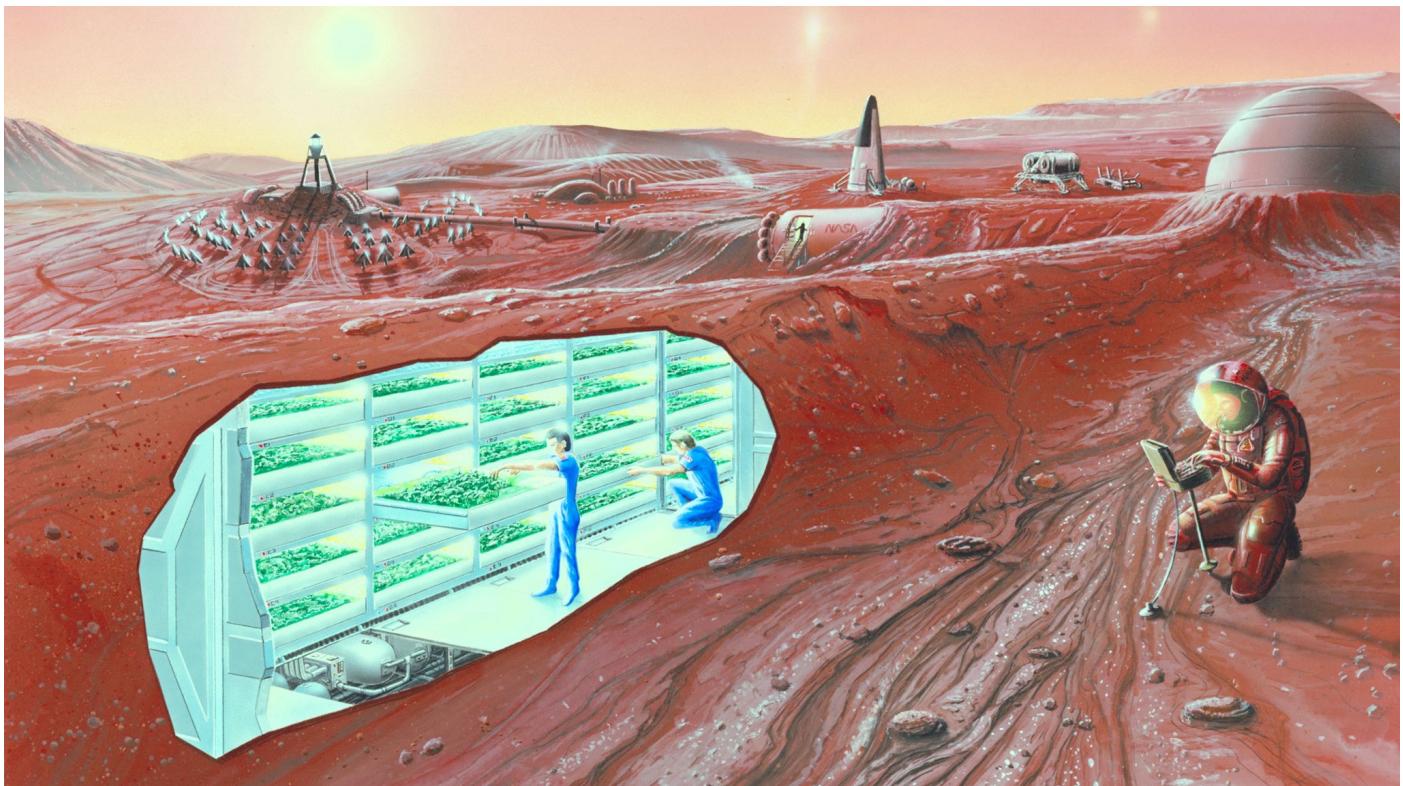
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BRIGHT FUTURE, DARK FUTURE?

by Klaus E. Mogensen



“The optimist proclaims that we live in the best of all possible worlds, and the pessimist fears that this is true.”

- James Branch Cabell



Klaus E. Mogensen

Back in what is often called the Space Age, the future looked bright. We were heading for the stars, leaving the cradle of the Earth behind and establishing ourselves in the cosmos. Surely, before the turn of the millennium, we would have established permanent bases in space and on the Moon and would be well on our way to colonise Mars. Soon, manned spaceships would explore the farthest reaches of the solar system while the people back on our planet would live in tall, bright towers in clean cities powered by nuclear energy, and we would fly around in hovercars while robots took care of our homes and did all the tough and boring work. It would be a future where no-one lacked anything and where nationalism, racism, and religious extremism could only be found in history books. It was the bright future of Star Trek and The Jetsons, and everybody knew that we were headed there, if we just could get past the threat of nuclear annihilation — and surely, we would be intelligent and rational enough to avoid that grim fate, or, at worst, build a better future from the ruins of the old world.

“ We are far from having the technology of *Blade Runner*, with its flying cars, off-world colonies, and (mostly) obedient artificial people to do the hard work for us.

This bright vision of the future died in the 1970s. The oil crisis and the growing economic polarisation in its wake killed the dream of constant economic growth from which everyone would benefit. The president of the United States turned out to be a crook. The Three Mile Island incident and growing piles of nuclear waste made it clear that atomic power perhaps wasn't the safe and clean energy source it had promised to be. Massive pollution of air and water was a constant reminder of the deeper cost of growing consumption, and thousands of animal species became extinct every year. The world population was exploding, offering dire visions of starving masses in dirty, overcrowded cities. Suddenly, dark future visions like those of *Soylent Green* and *Blade Runner* seemed more believable than the brighter visions of the Space Age.



Blade Runner took place in November, 2019, which has come and passed, and fortunately, the world doesn't look quite as bleak as the vision of Los Angeles presented in the movie, and although *Soylent Green*'s 2022 is only two years away, it seems unlikely that we will have to resort to collective cannibalism by then. While we are still far from having clean and safe nuclear energy, sustainable wind and solar energy are on the rise, with Denmark now getting half its electricity from wind. On the other hand, we are far from having the technology of *Blade Runner*, with its flying cars, off-world colonies, and (mostly) obedient artificial people to do the hard work for us. And while things today aren't entirely bleak, we still struggle with global warming, plastic pollution, mass extinction, extreme polarisation, bigotry and extremism, and strong population growth that threatens to strain our planet's resources to the breaking point and past. Maybe we should call it a half win — or half loss, if you are the cup-half-empty type.

“ Hopes and fears about the future don’t matter at all unless they lead to action.

For better and worse, for good and bad, we are forced to live in whatever future comes our way — or choose the not very appealing option of *not* living in it. Fortunately, things aren’t all bad. While economic polarisation continues to increase, people living in extreme poverty (living on less than \$1.90 a day) has dropped from 28% of the world population in 2000 to 8.6% in 2018 (though, worryingly, this trend is slowing down and even reversing in some places). Global average life expectancy grew by 5.5 years between 2000 and 2016 to 72.0 years, according to the WHO. In 2000, one child out of eleven worldwide died before reaching the age of 5; in 2018, this number had declined to one in 26. Today, more than half the world’s countries are democracies, compared to about a third in the 1970s, and since the end of the Vietnam War, annual deaths from armed conflicts has declined sharply.



Things aren’t all good, either. According to the UN’s Sustainable Development Goals Report for 2019, global hunger is on the rise after decades of decline, the world is heating up, and increasing inequality requires urgent attention. Global wildfires are on the rise, contributing to the deforestation trend that aggravates global warming. The world population is still growing, and so is the global middle class, which among other things looks to increase global energy needs faster than the increase in sustainable energy production, leading to greater rather than reduced dependency on fossil fuels in all but the most optimistic scenarios.

The future, hence, looks both bright and dark. Optimists will latch onto the bright trends and proclaim that the future will be the best of all possible worlds, while pessimists will fear that things will never get better than they are today— that we are already living in the best of all possible worlds. However, hopes and fears about the future don’t matter at all unless they lead to action. If enough people take positive action, we can collectively create a brighter future like the one envisioned during the Space Age — or a completely different one that is even better. However, if most people take the fatalistic view and don’t act because everything seems hopeless, we will undoubtedly face very dark times ahead.

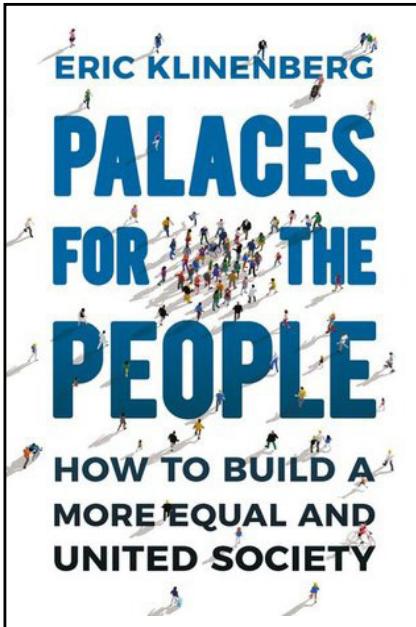
The author works within the Copenhagen Institute of Futures Studies.

Book Review

by Charles Brass – Chair, futures foundation

Palaces for the People: How To Build a More Equal and United Society

by Eric Klinenberg



Eric Klinenberg is a Professor of Sociology and in the tradition of Ray Oldenburg¹ and Jane Jacobs² has a long-held interest in what makes some parts of society work better than others.

Like Oldenburg and Jacobs he is interested in the way physical infrastructure changes the ways in which communities operate (the “Palaces” of his title), but he is much more interested in how social infrastructure can create more equal and united societies.

Like most academics he focuses heavily on empirical research (much of which he has personally

been involved with as the Director of Public Knowledge at New York University – part of which included helping President Obama decide how to rebuild after Superstorm Sandy hit New York in 2013). However, he is also an accomplished writer, so this book is both eminently readable and populated with many useful anecdotes.

Klinenberg is struck by the fact that seemingly similar socio-economic neighbourhoods respond very differently to the challenges they face, and has spent many years trying to understand why. This book is the result.

His premise is that a crucial difference is what he calls social infrastructure, by which he means: “public institutions, such as libraries, schools, playgrounds, parks, athletic fields and swimming pools.... sidewalks, courtyards, community gardens and other green spaces that invite people into the public realm [as well as] community organisations including churches and civic associations... and certain commercial establishments like cafes, diners, barbershops and bookstores” (p16), and much of the book is an elaboration on how these ‘palaces’ “help produce the material foundation for social life” (p16).

1. The Great Good Place - Cafes, Coffee Shops, Bookstores, Bars, Hair Salons and other Hangouts at the Heart of a Community”, by Ray Oldenburg- Marlow and Co., 1999
2. Cities and the Wealth of Nations – Principles of Economic Life”; by Jane Jacobs – Vintage Books, 1985

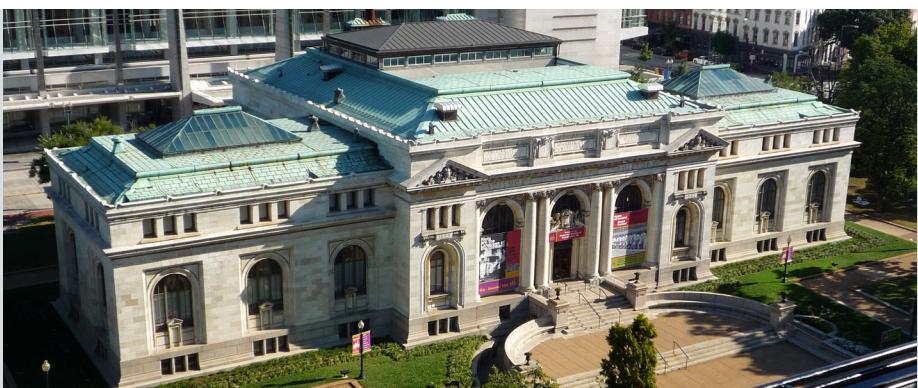
“ Building new social infrastructure is just as urgent as repairing our levees, airports and bridges.

Klinenberg contrasts his approach with the focus of much other contemporary thinking. “Besides economic growth, two ideas about how to rebuild society have dominated the conversation. One is technocratic, and involves engineering physical systems that enhance security and facilitate the circulation of people and goods. The other is civic, and involves promoting voluntary associations – the Masons, the National Association for the Advancement of Colored People, block clubs, gardening groups and bowling leagues – that bind people into communities. Both ideas are important, but they’re only partial solutions” (p11).

Klinenberg believes that: “few modern social infrastructures are natural...and in densely populated areas even beaches and forests require careful engineering and management to meet human needs. This means all social infrastructure requires investment, whether for development or upkeep, and when we fail to build and maintain it, the material foundations of our social and civic life erode” (p21).

“My argument is neither that social infrastructure matters more than conventional hard infrastructure, nor that investing in social infrastructure is sufficient to solve the underlying problems of economic inequality and environmental degradation that makes this moment so dangerous. It’s that building new social infrastructure is just as urgent as repairing our levees, airports and bridges.

Klinenberg’s first chapter focuses on public libraries and the innovative ways these are responding to the digitisation of knowledge. He notes that “libraries are not the kinds of institutions that most social scientist, policy makers and community leaders usually bring up when they discuss social capital and how to build it. Since Tocqueville, most leading thinkers about social and civic life have extolled the value of voluntary associations like bowling leagues and gardening clubs without looking closely at the physical and material conditions that make people more or less likely to associate. But social infrastructure provides the setting and the context for social participation, and the library is among the most critical forms of social infrastructure that we have” (p32).



The Carnegie Library of Washington D.C

Photograph - Bobak Ha'Eri

Klinenberg points out that Andrew Carnegie, whose fortune was largely used to build a whole network of public libraries in the USA in the early twentieth century actually called these ‘palaces for the people’.

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Subsequent chapters examine community gardens and other green spaces, concluding that “people whose buildings are surrounded by vegetation feel less aggression and mental fatigue” (p80).

Klinenberg also critiques (not entirely favourably) the so-called ‘broken windows’ hypothesis which postulates that abandoned and graffitied buildings become magnets for crime and anti-social behaviour.

Another major focus of this chapter is the design and operation of learning environments – particularly schools. This is an area in which there has been much experimentation over perhaps 30 years, but also an area within which the inertia of the status quo (serried rows of silent students listening rapturously to their teachers) remains significant.

Chapter 4 focuses on health – including the impact of both legal and illegal drugs and the difficulty of securing healthy food in too many modern communities.

At the time of writing this review, the USA (and other parts of the world) are witnessing significant civic unrest following the death of yet another black man in police custody. This makes “Common Ground”, Klinenberg’s fifth chapter particularly compelling reading. In this context, Klinenberg uses public swimming pools as a case study. Not only were many pools initially segregated, but he points out that the rise of private backyard swimming pools was, at least in part, a reaction by wealthy white families to the desegregation of public pools.

Chapter 6 focuses on just why different communities respond differentially to natural disasters. Here the role of churches and faith communities enter the narrative for the first time.

Klineberg’s concluding chapter introduces modern tech giants such as Facebook, and the various ways in which these companies (and their inevitably wealthy founders) are attempting to shape social infrastructure. Appropriately it is titled “Before we lift the next shovel” and is a call for cautious thoughtful action rather than the ‘moonshots’ like “space colonisation and immortality” that today’s leading philanthropists...pursue with such passion” (p218). “In an era characterized by urgent social needs and gridlock stemming from political polarization, it is tempting to give up on government and reach almost desperately for new solution – many in our time tech-driven, experimental and privatized, based on faith that the market will deliver what we want and need” (p224).

Klinenberg ends by noting “our railroads, highways, parks, and power grids reveal who we were and what we aspired to become at the time that we built them. The systems we build in coming years will tell future generations who we are and how we see the world today. If we fail to bridge our gaping social divisions, they may even determine whether that ‘we’ continues to exist” (p232).

FUTURISTS IN ACTION

UNPACK THE CONTEST FOR THE FUTURE WITH THE FUTURES TRIANGLE 2.0

by Alex Fergnani



We look at trends to find the baseline trajectory of current developments into the future. But trends are often not so straightforward. Yes, advancements of bioengineering are steadfast, but the ethical dilemmas of

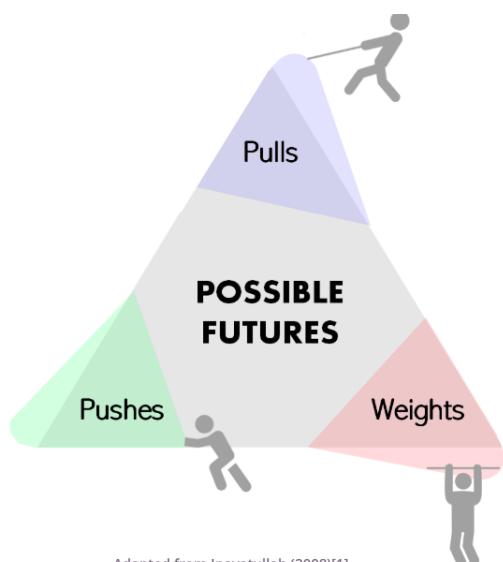
tinkering with human nature have stirred up a long-lasting debate. The empowerment of women is an increasingly sensitive issue, but some suggest that the gender pay gap is driven by evolutionary differences that are likely not going away soon.

The same could be said for visions of the future, which, like trends, are an equally powerful force affecting change. Visions – collective, organizational and individual alike – are counterbalanced by barriers and obstacles. The rise of veganism is fought by celebrity chefs, who promote fine dining cuisine irrespective of the origin of ingredients. A new machinery might be available to optimize a manufacturer's product line, but the owner is still

living under the shadow of huge sunk costs that stray him away from investing further. An engineer, inspired by the prospect of the technological singularity, researches brain-machine interfaces, but is discouraged by research retrenchment measures during an economic recession, or by an ideology strongly against trans-humanism in her proximal social environment.



All driving forces, trends and visions alike, have a weight, literally. They are not unidirectional forces, their direction into the future is contested. That is why, when we analyze driving forces, the *futures triangle* [1] is so powerful. The futures triangle [1] is a foresight mapping tool that allows us to take into account not only the primary directions of trends and visions moving us towards the future, but also the counter-forces of the past, the barriers to change. These three dimensions, visions, trends, and barriers/obstacles, are represented by the three angles of the triangle: *Pulls of the future*, *pushes of the present*, and *weights of the past*, respectively, as in the figure below, where the three forces interact, figuratively in the middle of the triangle, to create different possible futures:



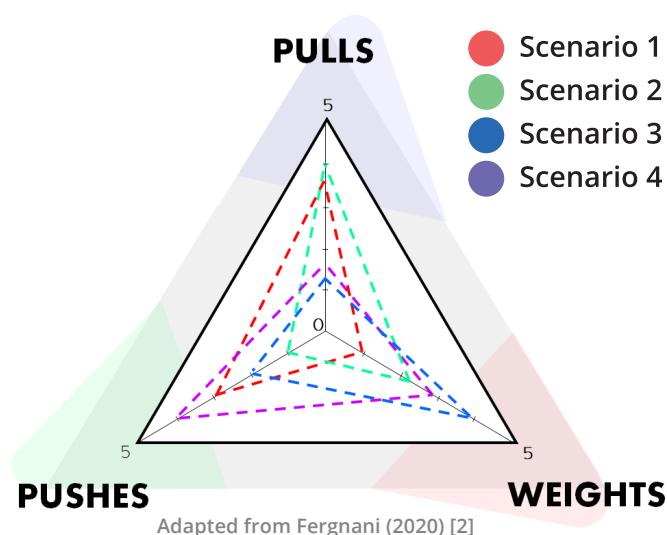
Adapted from Inayatullah (2008)[1]

When we do foresight, we start by mapping the driving forces of change. If we do this with the futures triangle, we make sure to capture these three dimensions. The futures triangle is therefore superior to traditional trend analysis, e.g. using PESTEL, STEEP, STEBNDILE, etc., because it takes into account the important tensions between pushes and pulls on one hand,

and weights on the other hand, not just the topics represented by the letters of such acronyms (social, economic, environmental, technological, etc.) which can in fact be easily integrated into the triangle. The futures triangle is superior because it analyzes what we can call the *contest for the future*.

But mapping forces of change is just the starting point of foresight practice. The next step is creating future scenarios. Then, how do we make sure that the insightful and valuable contest for the future represented in the triangle is retained in our scenarios, so that these will be plausible and realistic narratives? Indeed, a scenario of the future of the medical profession, for instance, will sound more interesting and real if it unpacks the conflict between doctor's vested interests in and reactions to automatic diagnosis apps, rather than offhandedly stating that 30% of doctors are sacked due to automation.

There is a way to do that. That's where futures triangle 2.0 comes in handy. This variation of the traditional futures triangle method allows us to deliberately engage in a discussion on whether the contest for the future is retained in scenario narratives. This is done with the avail of the futures triangle 2.0 figure below:



The whole process involves 4 easy steps:

1. First, the three dimensions affecting the future, that is, pushes, pulls, and weights, are mapped using the traditional futures triangle method. In the example of the futures of the medical profession, we would probably identify automation as a push, the resistance to it as a weight, and the idea of doctors morphing into nanomedicine technicians as a vision.
2. Then, we create scenario narratives with a foresight method of choice, e.g 2X2, 4 generic futures, Shell, etc.
3. Next, we rank each scenario, on a scale from 0 to 5, according to the degree to which it is dominant in the pushes, pulls, and weights dimensions of the futures triangle (0 = not dominant at all, 5 = completely dominant), and fill the futures triangle 2.0 figure with the resulting scores. This allows us to track each scenario's configuration of the three measures and compare them to one another in a single figure. This process works at best in a team of foresight practitioners/scenario planners. Each individual will score each scenario against the three dimensions independently. The 3 scores will then be averaged, decreasing bias.
4. Finally is iteration. If the configurations are not diverse enough, which is clear when lines of different colors are close or even coinciding in the futures triangle 2.0 figure, then the scenario narratives need to be changed. The narratives are tweaked and the figure is redrawn until the scenarios' configurations are different enough. This iterative process encourages, even forces us, to deliberately integrate the contest for the future into our scenario narratives.

References & notes

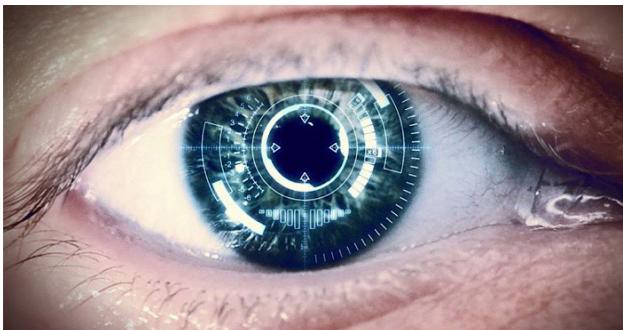
- [1] Inayatullah, S. (2008). Six Pillars: Futures Thinking for Transforming. *Foresight*, 10(1): 4–21.
- [2] Fergnani, A. (2020). Futures triangle 2.0: integrating the Futures Triangle with Scenario Planning. *Foresight*, 22(2): 178–188.

Signals in the Noise

INCREDIBLE TECH TO EXPECT IN THE NEAR FUTURE

by Thomas Frey

IT ONLY SOUNDS LIKE SCIENCE FICTION



Artist depiction of what electronic contact lenses of the future could look like.

Moore's law famously says that computer power doubles every eighteen months or so. This is evidenced clearly when graphing computer chip prices and their relative processing speed, power, and memory. In fact, Moore's law is true even if one includes technology from as far back as 100 years. This means that every year, video games are twice as powerful as those from the year before. The chip in your birthday cards would have been

remarkable to Hitler or Churchill in the 1940's and yet it's so common to us that we simply throw it away when we're done with it. A military supercomputer of 1997, worth millions of dollars, has the same power as your Playstation 3 that runs for \$130. NASA placed mankind on the moon in 1969 with less computing power than you have in your cellphone.

These chips are transformative. They greatly empower anything that they touch, like some divine force. When they touched phones we got cellphones in return. Cameras became digital cameras, phonograms became iPods, paper money became credit cards, arcade machines became video games, and airplanes became war drones. Yet their potential still hasn't been reached. These chips can be integrated into everything from clothes to your toilet and even your brain.

Here I'm going to be taking a look at technology you can expect to see in the next 10 to 50 years.

GLASSES AND CONTACT LENSES

Visiting a foreign country will be a far less anxious endeavor when you realize that languages and conversations will be translated in real-time for you with subtitles appearing as a person speaks. Or, if you're there as a tourist, you can use your augmented reality to turn the ruins of the Roman Empire into reconstructions of the real thing. You'll see Julius Cesar and Mark Antony or the pharaohs instructing for the pyramids to be built. History coming back to life before your eyes. And it extends even further back, allowing you to explore and survive among the dinosaurs.

You can imagine what this means for exams in school. They will have to focus far less on memorization and more on skills, ideas, and creative thinking. Which, wouldn't that be an improvement on our educational system? There would be no reason for memorization when you have access to any information you might need, and indeed the future sees us relying less and less on memory.

All of this is possible because images from the glasses will be flashed directly onto your retina at a quality similar to the screens at movie theaters. Contact lenses with cameras have already been patented by Samsung and you could, in the future, film live streams where people see exactly what you see, all day long.

Signals in the Noise

INCREDIBLE TECH TO EXPECT IN THE NEAR FUTURE

SCREENS

The video you can view here: <https://youtu.be/OptqxagZDfM> illustrates just how screen-centric our future lives will be.

Needless to say, having this amount of power available with small lenses alone, we will see people using computers and cellphones far less. Cellphones and laptops will now have flexible screens that you can roll up or fold and take with you.

There's no reason your entire house won't be intelligent as well. Wallpaper itself will be internet enabled so that you can change your design and color with the push of a few buttons. Even better, you'll have cyber-dogs and personal secretaries that appear on screen. They'll help you set dates, search the web, or even find a date with the exact traits you're looking for. Your assistant will cross reference your date's information with a deep profile and background check to make sure all the information is true. Of course you'll be able to watch room size movies as well as video chatting with loved ones in a different part of the world.

Chips will be so inexpensive to make at this point that they'll be worth about 1 cent. The price of scrap paper. The scrap paper of the future will have word processing, graphing, and internet capabilities that you'll throw away when you're done.

TRANSPORTATION



Self driving cars are here. And while just recently Uber faced a dilemma involving one of their self driving cars, they are still seen as far safer than human drivers. We are integrating them so much into our world that it will at some point seem absurd for anyone to own a car since automated vehicles will be readily available to take you wherever you need to go.

Remember those contacts we spoke about earlier? They'll sync with your vehicle to give you information about speed, how much gas you have, and where the nearest dealerships and gas stations are.

In case of an accident the car will be able to upload your location and medical history to the nearest hospital. Your clothes, which will then be integrated with chips themselves and therefore intelligent, will be able to monitor your heart rate, breathing, and even your brain waves. So what happens when you do get to the doctor?

Signals in the Noise

INCREDIBLE TECH TO EXPECT IN THE NEAR FUTURE

HEALTH



The Toshiba Smart Mirror will display fitness information overlaid on your reflection.

Monitoring your health will start in the home with smart toilets. Entire smart bathrooms, actually. The toilet will monitor your fluids to detect harmful cancer proteins or signs of other diseases. And because this will be a very early detection, cancer itself could be eradicated from our species. Currently, when one feels something strange and goes to the doctor to get it checked out, there are already billions of cancer cells in the body and it's really too late. But if your toilet can alert you when you have only a hundred cancer cells inside you then there's a much bigger possibility of survival.

Smart toilets might also get annoying, though. For those of you with bad diets your toilet will tell you you're eating too much sugar, fats, salts, or maybe that you're not getting enough water.

These smart bathrooms will have chips that analyze DNA, giving you access to vital information about your individual genes. A full gene reading now will cost in the ballpark of \$50k. Within a few years it'll be \$1k and within a decade it could be as low as \$100.

This genetic information will be available to your doctor who at this point will be able to monitor your health around the clock. If you were to need a new organ, one can be lab grown for you. The process of lab growing an ear consists of first having a spongy, biodegradable plastic base over which the cells taken from your body will multiply. Over time the plastic dissolves, leaving just the flesh and cartilage that the original ear would have. Currently we can regrow bones, blood, skin, cartilage, noses, ears, blood vessels, heart valves, bladders, and windpipes. More sophisticated organs such as livers and hearts are expected to be lab grown in the next few years.

Signals in the Noise

INCREDIBLE TECH TO EXPECT IN THE NEAR FUTURE

AI AND ROBOTS

While it is frightening to contemplate what kind of power and intelligence our future robots will have, scientists believe we will have plenty of warning before artificial intelligence reaches the level of a dog or a monkey. At that point, some argue, we might not want to let machine intelligence develop much further.

Currently we are looking at an era where machines replace human workers across many fields — factory work, transportation, outside labor, market investment, medicine, etc. I think there is cause for concern about what this will mean for unemployment rates not only in the US, but across the world. When choosing between machines and humans, companies whose only focus is to make bigger profits will have to go with our machine counterparts. Why? Because they can work 24 hours a day, don't need breaks or insurance or paid time off, can do the work much more efficiently, and don't require any salary. When a large enough portion of the workforce has become automated, we may have to think of implementing a universal basic income, or perhaps rethinking our economic system altogether.

Most importantly, I believe, AI will teach us what it means to be human and what it truly means to create new life.

VIRTUAL REALITY



How many of you have seen Ready Player One? While it's classified as a science fiction film, it really isn't as fictional or as far away as it might seem. Better virtual reality in the near future will allow you to explore distant worlds and become any character you want. You could even make money in your digital life that can transfer into real world income (this is something that's already possible and which I'll cover in my next article). While virtual reality was first developed to train soldiers and pilots in the 1960's, it has now found its entertainment value.

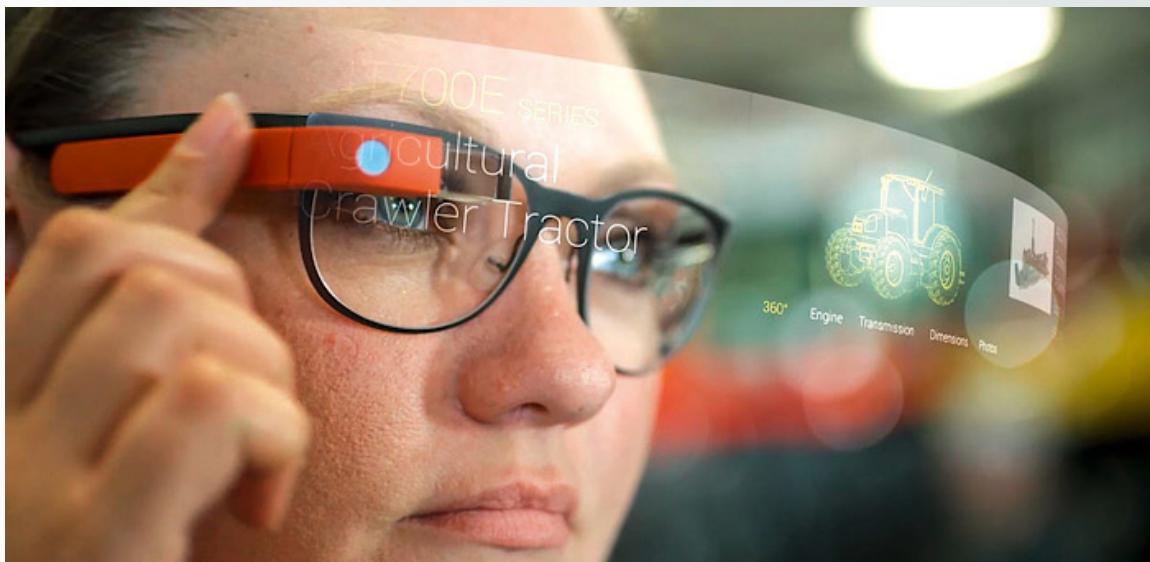
Haptic technology will even allow you to "feel" the things that you're seeing in your virtual world. Devices attached to springs and gears will push back when you press forward to give you the sensation of pressure. This will be a great way to train new surgeons since they need a very good sense of pressure to do their jobs.

Signals in the Noise

INCREDIBLE TECH TO EXPECT IN THE NEAR FUTURE

CONCLUSION

However futuristic these might seem, they're not much compared to what could come 50 to 100 years from now. Technology from that era will make much of the Harry Potter universe possible for us muggles. We could be entering a wizard-like world soon enough. Which innovation are you most looking forward to?



As we're already seeing with projects like Google Glass, tech of the future aims to be more and more within our line of sight. Glasses and electronic contact lenses will be enabled with full internet connectivity, allowing you to answer emails, watch movies, listen to music, and explore websites without the need of a computer.

Like a feature out of a Sci-Fi film, face recognition will prompt people's names and a short biography to come up on screen when you're meeting someone. There will no longer exist any reason not to remember Jeniffer from the apartment downstairs.