Friday Thinking 25 Jan 2019 -
Hello all – Here's today's **Friday Thinking** - dedicated to illuminating tomorrow will be radically unlike yesterday.

If anyone should not want to receive these emails – please feel free to reply johnverdon@gmail.com and I will happily take you off the distribution list. Please feel free to share this with anyone you think would be interested,

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Many thanks to those who enjoy this. ☺

In the 21st Century curiosity will SKILL the cat.
Jobs are dying - Work is just beginning.
Work that engages our whole self becomes play that works.
Techne = Knowledge-as-Know-How ::
Technology = Embodied Know-How
In the 21st century - the planet is the little school house in the galaxy. Citizenship is the battlefield of the 21st Century

"Be careful what you 'insta-google-tweet-face'"
Woody Harrelson - Triple 9

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The algorithm was purely based on the sound recordings, without considering visual information from the videos. It also ignored the content of their conversations – the words themselves. Instead, the algorithm picked up on features like cadence, pitch and how long each participant talked for.

Amazingly, the algorithm also picked up on features of speech beyond human perception. These features are almost impossible to describe because we're not typically aware of them – such as spectral tilt, a complex mathematical function of speech.

"Using lots of data, we can find patterns that may be elusive to human eyes and ears," says Shri Narayanan, an engineer at the University of Southern California, who led the study.

After being trained on the couples' recordings, the algorithm became marginally better than the therapists at predicting whether or not couples would stay together. The algorithm was 79.3% accurate.

The therapists – who had the advantage of also being able to understand the content of the couples' speech and watching their body language – came in at 75.6% accurate.

How your voice hides clues about Love Life

http://www.bbc.com/future/story/20190111-artificial-intelligence-can-predict-a-relationships-future?utm_source=nextdraft&utm_medium=email

*I invoke the sublime because, in its Kantian genealogy, it's licensed a certain powerlessness (or abdication of responsibility, anyway): the sublime is specifically that upon which humans are powerless to act. But sublimity isn't the only approach to snow and storm, to waterfalls and mountains. At the risk of massive reductiveness, I want to imagine that one future aesthetic/ethical strand might be inspired by certain strands of indigeneity... the anthropologist Eduardo Vivieros de Castro has elaborated the concept of "multinaturism" from Amerindian cosmology: the notion that myriad forms and phenomena (game animals, crops, mountains and rivers, even the weather) are understood to have their own natures, within which they develop as communities, as societies—and the social obligations that emerge in those natures web out to touch on other natures, including the human. We humans seek to propitiate, to gift, to placate, communities of these other natures; we reach out to interact with them through dream and vision. This multinatural cosmology *works* to the extent it helps people think relations of obligation and interdependence among species and forces and things. It requires acknowledging that such entities have stakes in the cosmological game.*

That's great news from a New Dark perspective, though. It means we're on a much more level playing field with writers who don't publish in English — since we're all in the dark, and nobody's got a megaphone. So if you're looking for arcane, resolutely noncommercial literary fiction, how about some Finns or Latvians? Or you might try the Bangalore Literary Festival, where they all read English, yet they long to write and be heard in their 22 official Indian regional languages.

The imminent downfall of the Great American Novel might even raise hopes for creative expression from whales, gorillas, elephants and chess-playing neural nets, who have been all cruelly sidelined in
the sweepstakes for the Pulitzer.

I also think that Centaur Chess illustrates the big problem that any "new aesthetic" for algorithmic or device art tends to founder in a bad metaphysics. Especially, the bad metaphysics of AI, which has been a tarpit for decades.

Centaur Chess has the Walter Benjamin "aura" problem of "who" gets the credit credit for the game. If the artist is a mythological beast (and basically a figure of speech), rather than some metaphysically identifiable entity, that's gonna be major problem. You can see from the Wikipedia entry here that the problem of distributing credit is all over the map. The debating parties have no basic concurrence on what they're talking about.

An example; I had Christmas dinner this year with a guy who walked from Eritrea to Libya after the government burned his village, crossed to Italy in a wobbly boat captained by pirates, skipped trains and boats to get to Norway, got kicked out, and is now a pastry chef at the local boulangerie in my mother in law's village in France. The dude showed up to dinner on an electric bike, was happy as a clam, and couldn't stop laughing about the Gilets Jaunes. "Those guys have no idea how good they've got it. It's hilarious!"

State of the World 2019

https://people.well.com/conf/inkwell.vue/topics/506/State-of-the-World-2019-page05.html

we need to rethink our fundamental beliefs about employment and jobs. In creative, knowledge-based work it is increasingly difficult to know the best mix of capabilities and work-to-be-done in advance. Recruiting is therefore becoming a matter of expensive guesswork. Matching the patterns of work with the capabilities of individuals beforehand is getting close to impossible.

What, then, is the use of the corporate theater as we know it now, when it is literally impossible to define the organization before we actually do something? What if the organization really should be a process of emergent self-organizing, and always changing when the context changes?

Instead of thinking about the organization let's think about organizing as an ongoing thing. Then the managerial task, but not necessarily a managers task, is to make possible very easy and very fast responsive interaction and formation of interdependent individuals into value creating groups.

It is a different logic of organizing, based on neither the traditional (job) market nor a process. Whereas processes involve relations based on dependence and markets involve transactions based on relative independence, here it is about dynamic interdependence.

Instead of the topology or organizational boxes that are often the visual representation of work, the picture of work is a live social graph.

It used to be argued that goods for which the marginal costs, the cost of producing one more unit of customer value were close to zero, were inherently public goods and should be made publicly available. Before the software era, roads and bridges were commonly used as examples of these platforms. The maximum societal benefit from the initial investment is gained only if the use

is as unrestricted as possible. Once the capital costs have been incurred, the more people there are sharing the benefits, the better it is for the whole value system and society at large.

This was the economic explanation for why roads were, and mostly still are, under public ownership. The same logic applied to public libraries: a book can be read repeatedly at almost no extra cost.

What if a post-industrial "company" could be, first and foremost, a set of interaction protocols, a shared and open resource, making interactive value creation possible through organizing and simplifying participation?

In the new commons, people with more potential ties become better informed and have more signalling power, while those outside and with fewer ties may be left behind. This is the new digital divide.

Network inequality creates and reinforces inequality of opportunity.

Esko Kilpi - The New Commons of Work
https://medium.com/@EskoKilpi/the-new-commons-of-work-39bdaa4d6796

Like a barstool, no society can balance itself on one leg—be that socialism, capitalism, or populism. And trying to do so on two legs leaves many societies swinging back and forth between left and right, while the power of government dissipates as that of business escalates. A third leg is necessary for balance. I call it the plural sector, rather than the more usual "civil society", so that it can be seen to take its place alongside the sectors called public and. private. It is largely community-based, comprising those associations that are owned by members (such as cooperatives) or by no-one (trusts, etc.). Here, in fact, is where we spend much of our personal lives, whether playing in a club, praying in a church, supporting an NGO, volunteering for a charity, or shopping in a co-op, not to mention marching in a protest.

Large as this sector is, there is no place for it in a world fixated on left and right, public and private. But here is where major social change has usually started—on the ground, in communities, these days networked through the social media. If this sounds like France of late, then let's hope it has started something.

What can be next for France…and the world
http://www.mintzberg.org/blog/what-can-be-next-for-franceand-the-world

Acquisition is the first half of the disorder. People fall in love with stuff they don't immediately need because it's free, or it reminds

them of a particular experience, or they might need it someday, or they could transform it in some cool way and increase its value. These objects accumulate, and people resist parting with them because of their perceived potential, or their sentimental significance, or their triggered memories, or because it's wasteful to pile up a landfill with some perfectly good object somebody might need someday. Or because the person who's hoarding simply doesn't like being told what to do with their stuff.

Even if they want to downsize (which is rare), there's the overwhelming difficulty of sorting through the mess. People with severe hoarding disorder tend to be easily distracted and have a hard time focusing and concentrating. Paradoxically, they also tend to be perfectionists, so they'll put off making decisions rather than risk being wrong. And when it comes to their own stuff, they don't categorize by type. Rather than see an object as a member of a large group (say, one of 42 black T-shirts), they see it as singular, unique, special. Each black T-shirt is perceived apart from the others and carries its own history, significance, and worth. It's not even categorized for storage (folded with other black T-shirts in a T-shirt drawer), but rather placed on a pile and retrieved spatially (that particular black T-shirt lives about four inches from the bottom of the corner stack). This leads to a deep aversion to someone touching the piles or sifting through them, unwittingly destroying the invisible ordering system.

There might be another reason, though, for the general recoil. Several scholars have suggested that hoarding hits a little too close to home. We all do daily battle against an excess of stuff. It flows into our homes, brought by FedEx and the U.S. Postal Service, snagged on Amazon, Facebook Marketplace, Freecycle, or a yard sale, inherited or handed down. It piles up in closets, basements, and garages. Almost 10 percent of American households are renting at least one storage space, often for an overflow of stuff, according to a 2015-16 Self Storage Industry Fact Sheet. It is now possible for every American to stand comfortably, at the same time, under the total canopy of self-storage roofing.

What's Causing the Rise of Hoarding Disorder?
https://daily.jstor.org/whats-causing-the-rise-of-hoarding-disorder/

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*multinaturism" from Amerindian cosmology: the notion that myriad forms and phenomena (game animals, crops, mountains and rivers, even the weather) are understood to have their own natures, within which they develop as communities, as societies—and the social obligations that emerge in those natures web out to touch on other natures, including the human. We humans seek to propitiate, to gift, to placate, communities of these other natures; we reach out to interact with them through dream and vision. This multinatural cosmology *works* to the extent it helps people think relations of obligation and interdependence among species and forces and things. It requires acknowledging that such entities have stakes in the cosmological game.*

Many have written about connections between the "cannibal metaphysics" of Vivieros de Castro and a Gaian Anthropocene. We're a long way from elaborating such a metaphysics at scale (though the Water Protectors provide one example of a starting point). Is it crazy of me to wonder if we begin at some point to exercise cultic relations with algorithms—to entreat them through visions; to offer them votives? Maybe we're already engaged in such cult activities, and we don't recognize them as such?

had Christmas dinner this year with a guy who walked from Eritrea to Libya after the government burned his village, crossed to Italy in a wobbly boat captained by pirates, skipped trains and boats to get to Norway, got kicked out, and is now a pastry chef at the local boulangerie in my mother in law's village in France. The dude showed up to dinner on an electric bike, was happy as a clam, and couldn't stop laughing about the Gilets Jaunes. "Those guys have no idea how good they've got it. It's hilarious!"

Citizenship is the battlefield of the 21st Century

State of the World 2019
Matthew Battles Sun 6 Jan 19 21:31
https://people.well.com/conf/inkwell.vue/topics/506/State-of-the-World-2019-page05.html

This is a **must see** presentation for anyone interested in the digital environment as an emerging Hyperobject (so massive and distributed it's beyond the grasp of a human). ***The Stack: On Software and Sovereignty*** is a tome of a book examining the ever more complex and entangled global nervous system and multidimensional embodiments of new forms of collective

intelligences. It’s an onerous read - this presentation will expand your view of the digital world and makes the book more accessible.

The Stack: On Software and Sovereignty

https://www.youtube.com/watch?v=QuEO-iTf4C4&feature=youtu.be

Benjamin H. Bratton: "The whole age of computer has made it where nobody knows exactly what's going on": An Update on The Stack

Whither goes planetary-scale computation in this “new normal”? The rise of ethno-nationalist populism is a global phenomenon with global causes. Yet, in each case, locals either blame or congratulate themselves for their unique failures or accomplishments. From Manila to Milwaukee, we see the same voting patterns of urban, highly educated cosmopolitans versus rural, less educated monoculturalists wanting only to preserve their own national culture. Although globalization delinked sovereignty from geography in many capacities, we are still dealing with the vestiges of 18th-century phenomena at a time when city-states seem decisively detached from their national hosts. For those from “District 13” in our real-life Hunger Games, the city may be seen as a source of arbitrary power, and in this way, urbanization itself becomes a focus of populist backlash.

Is there a model that might clarify this noise? In this talk, writer Benjamin H. Bratton will provide a review of developments since the publication of his book The Stack: On Software and Sovereignty: planetary-scale computation beyond platform economics, the liquid boundaries of public data and private data, landfill mining and Earth system modeling, the futile complicity of utopian/dystopian narratives, urban culture after Peak Pitchfork, multipolar hemispherical stacks and their Potemkin ontologies, multi-scalar human exclusion zones, urban simulation models, synthetic voices, Kratt laws, fuzzy data subjects, and what counts, should be counted and be accountable as we slouch toward the post-Anthropocene.

Benjamin H. Bratton is sociological, media, and design theorist. He is Associate Professor of Visual Arts at the University of California, San Diego, and Director of the Center for Design & Geopolitics at the California Institute of Telecommunications and Information Technology. His work sits at the intersections of contemporary social and political theory, computational media & infrastructure, and architectural & urban design problems and methodologies. He is Program Director of the Strelka Institute of Media, Architecture and Design in Moscow. He is also a Professor of Digital Design at The European Graduate School in Switzerland and Visiting Faculty at SCI-Arc (The Southern California Institute of Architecture).

This is a very important signal - despite its weakness - the inevitable known and unknown surprises that lurk in our future. The status quo is not safer than the explorations we engage in.

How Nearby Stellar Explosions Could Have Killed Off Large Animals

https://www.quantamagazine.org/did-supernovas-kill-off-the-monster-shark-megalodon-20190115/?mc_cid=592883b42c&mc_eid=af018688b8

A new study suggests that subatomic particles called muons streamed through the atmosphere and fatally irradiated megafauna like the monster shark megalodon.

Even though Earth is floating in the void, it does not exist in a vacuum. The planet is constantly bombarded by stuff from space, including a daily deluge of micrometeorites and a shower of radiation from the sun and more-distant stars. Sometimes, things from space can maim or kill us, like the gargantuan asteroid that wiped out the dinosaurs. More often, stellar smithereens make their way to Earth and the moon and then peacefully settle, remaining for eternity, or at least until scientists dig them up.

a question scientists have pondered since at least the 1950s: How might these supernovas affect Earth and its life? In the new paper, he describes how a supernova would produce a shower of subatomic particles called muons that could damage DNA, leading to widespread mutations in organisms, and even the extinction of species.

Muons are sort of like extra-heavy electrons. They can sail through Earth's atmosphere with greater ease than protons and electrons. "They get to the ground, they hit you, and some of them will interact with you, and damage your DNA, Melott said. "They are in a sweet spot for affecting ground-based life."

Melott hypothesized that a supernova around 2.6 million years ago would have increased the flow of muons streaming through the atmosphere several hundred times over. He and his coauthors estimated that cancer rates could have increased by 50 percent for an animal the size of a human. For a mammoth or a megalodon — which was the size of a school bus — the radiation dose would be even worse, Melott said.

This is a longish article - but provides an interesting signal about necessary bureaucracy in very large private organizations - new forms of institutions in the digital environment. For anyone interested in the inner working of Amazon's justice system - this is very interesting article.

Prime and Punishment

https://www.theverge.com/2018/12/19/18140799/amazon-marketplace-scams-seller-court-appeal-reinstatement

Dirty Dealings in the $175 Billion Amazon Marketplace

For sellers, Amazon is a quasi-state. They rely on its infrastructure — its warehouses, shipping network, financial systems, and portal to millions of customers — and pay taxes in the form of fees. They also live in terror of its rules, which often

change and are harshly enforced. A cryptic email like the one Plansky received can send a seller's business into bankruptcy, with few avenues for appeal.

Sellers are more worried about a case being opened on Amazon than in actual court, says Dave Bryant, an Amazon seller and blogger. Amazon's judgment is swifter and less predictable, and now that the company controls nearly half of the online retail market in the US, its rulings can instantly determine the success or failure of your business, he says. "Amazon is the judge, the jury, and the executioner."

This is a very interesting signal of history - of how Empires can end - of how the illusions of independent control dissolves with the realization of interdependence - that autonomy can only increase with the number of systems that are dependable for others and self.

The Malign Incompetence of the British Ruling Class

https://www.nytimes.com/2019/01/17/opinion/sunday/brexit-ireland-empire.html

With Brexit, the chumocrats who drew borders from India to Ireland are getting a taste of their own medicine.

Describing Britain's calamitous exit from its Indian empire in 1947, the novelist Paul Scott wrote that in India the British "came to the end of themselves as they were" — that is, to the end of their exalted idea about themselves. Scott was among those shocked by how hastily and ruthlessly the British, who had ruled India for more than a century, condemned it to fragmentation and anarchy; how Louis Mountbatten, accurately described by the right-wing historian Andrew Roberts as a "mendacious, intellectually limited hustler," came to preside, as the last British viceroy of India, over the destiny of some 400 million people.

Britain's rupture with the European Union is proving to be another act of moral dereliction by the country's rulers. The Brexiteers, pursuing a fantasy of imperial-era strength and self-sufficiency, have repeatedly revealed their hubris, mulishness and ineptitude over the past two years. Though originally a "Remainer," Prime Minister Theresa May has matched their arrogant obduracy, imposing a patently unworkable timetable of two years on Brexit and laying down red lines that undermined negotiations with Brussels and doomed her deal to resoundingly bipartisan rejection this week in Parliament.

Such a pattern of egotistic and destructive behavior by the British elite flabbergasts many people today. But it was already manifest seven decades ago during Britain's rash exit from India.

Any working scientist should resonate with these thoughts.

Reflections from a Nobel winner: Scientists need time to make discoveries

https://theconversation.com/reflections-from-a-nobel-winner-scientists-need-time-to-make-discoveries-109554?utm_source=Nature+Briefing&utm_campaign=28a179c0f5-briefing-dy-20190114&utm_medium=email&utm_term=0_c9dfd39373-28a179c0f5-43585533

Since the announcement that I won the Nobel Prize in physics for chirped pulse amplification, or CPA, there has been a lot of attention on its practical applications.

It is understandable that people want to know how it affects them. But as a scientist, I would hope society would be equally interested in fundamental science. After all, you can't have the applications without the curiosity-driven research behind it. Learning more about science — science for science's sake — is worth supporting.

Gérard Mourou, my co-recipient of the Nobel Prize, and I developed CPA in the mid-1980s. It all started when he wondered if we could increase laser intensity by orders of magnitude — or by factors of a thousand. He was my doctoral supervisor at the University of Rochester back then. Mourou suggested stretching an ultrashort pulse of light of low energy, amplifying it and then compressing it. As the graduate student, I had to handle the details.

Albert Einstein created the equations for the laser in 1917, but wasn't until 1960 that Theodore Maiman first demonstrated the laser. Isidor Rabi first measured nuclear magnetic resonance in 1938. He received the Nobel Prize for Physics in 1944 for his research, which led to the invention of magnetic resonance imaging, or MRI. The first MRI exam on a human patient took place in 1977.

Perhaps even more important for both our ability to harness all the creative potential of our intellectuals to do pure research and applied work.

An academic mother's wish list: 12 things universities need

https://www.nature.com/articles/d41586-019-00019-x?utm_source=Nature+Briefing&utm_campaign=28a179c0f5-briefing-dy-20190114&utm_medium=email&utm_term=0_c9dfd39373-28a179c0f5-43585533

There are many ways to create an inclusive workplace, say Julia Leventon, Katy Roelich and Lucie Middlemiss.

We co-host a blog called Mama is an Academic, which deals with the challenges of maintaining an academic career while raising children. Inspired by our own experiences as academic mums, we aimed to share the trials, tribulations and, of course, successes that come with balancing parenting and work. Being a mother poses very specific challenges to maintaining an academic career, which tends to require complete immersion in ideas, and rewards obsessive and relentless hard work. It often entails international travel and success rests in the balance of securing

that all important permanent position. Combining these demands with the all-consuming role of motherhood can seem overwhelming.
So what can workplaces do to ease this burden and promote inclusion of academic mums?

We asked our blog community, and have used the responses to come up with this wish list. We hope this becomes a useful resource to help academia create 'family friendly' spaces.

What employers can do
Here are 12 things employers should do. Managing maternity leave is the first step to an inclusive working environment, and it is important to consider effective strategies.

This is a longish article (typical of Quanta) but fascinating in its implication that a grid code in the brain provides the fundamental conceptual metaphor with with we map our experiences. This is very much in support of George Lakoff's work - that metaphors structure how we think and reason. Is our perceptions of Time and Space a 'reflection' of reality - or is it how our brains-minds structures our experiences of reality? Well worth the read and thought.

> *"It seems to be quite arbitrary, what dimensions it can map," Bellmund said. "What's interesting is that it seems to be so general across domains, but the mechanism seems to be preserved."*

The Brain Maps Out Ideas and Memories Like Spaces

https://www.quantamagazine.org/the-brain-maps-out-ideas-and-memories-like-spaces-20190114/?mc_cid=cd6e6f6b03&mc_eid=af018688b8

Emerging evidence suggests that the brain encodes abstract knowledge in the same way that it represents positions in space, which hints at a more universal theory of cognition.

The finding suggested that the brain processes trajectories through physical spaces and conceptual spaces in much the same way. Now, researchers including Behrens, Bellmund and neuroscientist Christian Doeller **propose that all knowledge can be plotted this way**, in terms of features of interest — that different objects, different experiences and different memories can be organized and traversed with the grid code.

This work, added Thomas Wolbers, a cognitive neuroscientist at the German Center for Neurodegenerative Diseases, calls into question the idea that grid cells simply constitute "a pure location signal" — hardwired and specialized. "So far, we'd only seen it in space because we'd only looked at navigation tasks and paradigms," he said. "It may be much more ubiquitous."

One area that's seen some intriguing preliminary results is in social behavior. We think of society in spatial terms all the time: There are social ladders to climb,

networks to build and expand, people we consider “close” or “distant.” Now, some research groups are probing social relationships for evidence of the grid code.

boundary cell activity has been reported for not just the borders of a physical space but also the borders between separate events in a temporal sequence. Could these neurons also play a role in forming borders between concepts, in creating distinct domains of knowledge in the brain? Or could head direction cells help one orient oneself within a given topic? The potential for such analogies is enormous.

This is a great 40 min video presentation exploring the implications of complexity and complex systems. There is no leader in a complex system and predicting the future requires less information than predicting the past.
The 21st Century is the Century of Complexity - Stephen Hawkins.

The Simplicity of Complexity with Peter Sloot

https://www.youtube.com/watch?v=wMiVneDhLqg

This is a strong signal of the emerging role of AI in augmenting humans in the care of humans.

> *Ms. Liu, a resident living in Wuzhen, said, “The weather has been cold recently and my child got sick, so I tried the one-minute clinic. The online doctors are very thorough, and they save a lot of registration and queuing time. Besides, the One-minute Clinics are open 24 hours and it is convenient to buy medicine at night. If such services can be popularised, it will make life more convenient.”*

Ping An Good Doctor launches commercial operation of One-minute Clinics in China

https://www.mobihealthnews.com/content/ping-good-doctor-launches-commercial-operation-one-minute-clinics-china?utm_campaign=Abundance%20Insider&utm_source=hs_email&utm_medium=email&utm_content=69129102&_hsenc=p2ANqtz-_XSTqVDFivjsOt3CmT5zlxzw0NqmjDNGk0Uwf2I9Ou46AFN-31akGKYz937O3qQvn8EUSQyaxKpU7wfCjoX2Lgjq8hUg&_hsmi=69129102

The company announced last week then it had placed its One-minute Clinics across 8 provinces and cities in China and signed service contracts for nearly 1,000 units.

Last year, Ping An Good Doctor, a one-stop healthcare ecosystem platform from China, piloted unstaffed clinics that employ artificial intelligence called “One-minute Clinics” in the Wuzhen Scenic Area outside of Shanghai, which connect patients with a clinician on Ping An Good Doctor’s in-house medical team. Just last week, the company announced that it had placed its One-minute Clinics across 8 provinces and cities in China and signed service contracts for nearly 1,000 units, providing healthcare services to more than 3 million users.

The clinics currently provide online consultations for more than 2,000 common diseases, and can immediately answer tens of thousands of medical and health queries for users, with an international standard accuracy level.

Every One-minute Clinic has more than 100 categories of common drugs, all of which are cryogenically refrigerated to ensure their quality. If a user needs a drug that is not stored at the booth, they can purchase it online through the Ping An Good Doctor App and enjoy the one-hour drug delivery services provided by nearby cooperative pharmacies.

Ping An Good Doctor's world-leading technology, plays a key role. 'AI Doctor' was developed by the R&D team with over 200 world-class AI experts and has accumulated more than 300 million pieces of consultation data. When patients use the consultation service in One-minute Clinics, 'AI Doctor' acts like a real doctor and collects the users' symptoms and illness history before providing a preliminary diagnostic suggestion. The experienced real doctor then joins the consultation with supplementary recommendations to ensure the accuracy of the whole consultation process."

While level three type self-driving cars are beginning to come through the door and level four type will begin to appear in the next five years - this is another good signal of just how disruptive AI driven transportation will be. The notion of a 'flying car' implies that flying is so safe and easy - any one who can legally own a car will be able to own a flying car. The Future of the 1950s may be just around the corner.

Boeing's Flying Car Has Taken Off

https://www.bloomberg.com/hyperdrive

A Boeing Co. flying car designed to whisk passengers over congested city streets and dodge skyscrapers completed its first test flight on Tuesday, offering a peek into the future of urban transportation the aerospace giant and others are seeking to reshape.

A prototype of its autonomous passenger air vehicle completed a controlled takeoff, hover and landing during the test conducted in Manassas, Virginia, the maker of military and commercial jets said in a statement Wednesday. Propelled by electricity, the model is designed for fully autonomous flight, with a range of as much as 50 miles, Boeing said.

This is the strong signal of the imminent emergence of self-driving cars.

Waymo plans to open the world's first self-driving-car factory this year

https://www.technologyreview.com/the-download/612819/waymo-plans-to-open-the-worlds-first-self-driving-car-factory-this-year/?utm_campaign=the_downl

oad.unpaid.engagement&utm_source=hs_email&utm_medium=email&utm_content=69225908&_hsenc=p2ANqtz--Ep-371BJTsoAoN9lEViz2I7KrkbT8ZuKvG0cVXi9PznSjxeps8bZwoLNthNFu165LX76SPIR0_2vsFRW8O0hviYmtJA&_hsmi=69225908

Waymo, Google's self-driving spinoff, has said it will spend $13.6 million to retrofit an as-yet-unspecified factory in Detroit, hiring up to 400 people, according to the Associated Press. State authorities will hand the company a grant worth $8 million if it fulfills its job pledges.

A first: The plant will be dedicated to building "Level 4" autonomous cars, which means the vehicle can do all the driving within specific geofenced areas and under certain conditions. Workers there will build driverless versions of the electric Jaguar I-PACE and Chrysler's Pacifica hybrid minivan, as part of Waymo's partnership with the two companies. Waymo builds the software and hardware, and then integrates it into certain models of its vehicles.

An eye on expansion: The announcement is a sign of Waymo's growing ambitions. It launched its first (small-scale) commercial robotaxi service in Phoenix in December. It is ramping up testing efforts to prove that its technology is safe. And it opened a small outpost in Shanghai last year.

This is a good signal of the emerging world of AI-ssistants embodied in robots - for example imagine a bookstore not only with computer terminals - but friendly robots to lead you to the item you want (it seems like 30% of large books internal real estate is now dedicated to non-books).

Giant Food Stores rolling out googly-eyed helper robots nationwide

https://www.cnet.com/news/giant-food-stores-rolling-out-googly-eyed-helper-robots-nationwide/

"Cleanup on aisle 5."

Employees at Giant Food Stores will soon have a new googly-eyed robot coworker. Marty, a tall grey robot assistant, will take on the aisles of all of Giant Food Stores' 172 locations, the company said Monday. The robot can identify and report spills to customers and employees.

Marty roams the store unassisted to flag spills and other hazards using image capturing technology, according to The Washington Post. When it finds them, the robot will reportedly alert customers by saying "caution, hazard detected." It'll also announce the incident through the store's public address system to notify employees, the Post said.

Here's another emerging signal of the smart kitchen - or at least one version for people who want to cook without cooking.

This new smart oven can identify the food you put inside and automatically cook it just right

https://www.cnbc.com/2019/01/14/whirlpool-wlabs-oven-detects-food.html

Whirlpool's WLabs is launching a $799 oven this spring that can automatically detect and cook the food you place in it.
If you place salmon inside, for example, it sees that you're cooking fish and knows the right temperature and length to cook it.
The oven also works with an app that lets you look inside while it's cooking.

The oven can identify 50 different types of food using infrared sensors in the oven. For meat, a user inserts a probe into the filet so that the oven can cook it to your liking.
Users aren't limited to just baking, either. It has other functions like slow cooking, air frying and roasting. It's large enough to fit a full 12-inch pizza or a full chicken.

A key aspect to the domestication of DNA is the domestication of bacteria and viruses as methods of manufacturing many sorts of useful products and metabolize other products.

> *Scientists have found other insect-killing compounds made by other bacteria in the same genus, but this is the first time bacterial compounds have been shown to ward off adult mosquitoes.*

Bacterial compounds may be as good as DEET at repelling mosquitoes

https://www.sciencenews.org/article/bacteria-compounds-may-be-good-deet-repelling-mosquitoes?utm_source=email&utm_medium=email&utm_campaign=latest-newsletter-v2

The bacterium that produces these molecules lives in symbiosis with soil nematodes

Molecules made by bacteria keep mosquitoes at bay. The compounds are a newfound potential stand-in for DEET, a ubiquitous chemical used in most commercially available mosquito repellents in the United States.

In lab tests, the molecules were as effective as DEET in stopping Aedes aegypti mosquitoes, which can carry Zika, dengue and yellow fever, from snacking on artificial blood, researchers report January 16 in *Science Advances*. Tests suggest the compounds also deter two other mosquito species: Anopheles gambiae, a major malaria carrier, and Culex pipiens, which can carry the West Nile virus.

Though DEET is considered safe for human use and effective against mosquitoes, it doesn’t hurt to have more lines of defense against the disease-transmitting insects, says coauthor Susan Paskewitz, an entomologist at the University of Wisconsin–Madison.

The molecules in question are metabolic by-products of *Xenorhabdus budapestensis*, a bacterium that has a symbiotic relationship with a species of soil nematode. When the nematode finds an insect host such as a caterpillar, it burrows in and defecates the bacteria into its host's bloodstream. The bacteria weaken the host's immune system and turn its insides to mush — a sort of "bacteria-insect milkshake" — which rapidly kills the host, says Adler Dillman, a nematologist at the University of California, Riverside who wasn't part of the study.

We have known for quite awhile that an ecology is composed of more than the assemblages of living entities - for example fire is often a requisite condition without exposure to, some seeds will not sprout and grow. This is another signal of how other elements are implicated in an ecology. Fire may be a requisite mechanism of ecological metabolism.

> *"We're beginning to parse out the ecological drivers of response to fire," says study co-author Thea Whitman, a soil ecologist at the University of Wisconsin–Madison.*
> *Microbes help to maintain ecosystem health by decomposing organic matter and readying nutrients for plants to absorb. Some types of bacterium break down nitrogen and carbon, and some fungal species live on the root ends of plants, helping their hosts soak up nutrients and water from surrounding soils.*

Severe wildfires spark population boom in fungi and bacteria

https://www.nature.com/articles/d41586-019-00151-8?utm_source=Nature+Briefing&utm_campaign=9097384158-briefing-dy-20190117&utm_medium=email&utm_term=0_c9dfd39373-9097384158-43585533

Understanding how microbial communities change after a fire can help researchers to predict how an ecosystem will recover.

Wildfires are getting larger, burning hotter and becoming increasingly unpredictable, devastating plant and animal species. Now, researchers are studying how these blazes affect the tiniest of forest organisms — including bacteria and fungi — and finding that some microbes thrive after an intense wildfire.

A study posted last week on the preprint server bioRxiv reports that populations of several bacterial and fungal species increased after severe wildfires in the boreal forests of the Northwest Territories and Alberta in Canada. These kinds of studies, as well as others on how fire characteristics such as smoke affect the distribution of microbes, give researchers a clearer picture of how wildfires change microbial communities. This could help them to predict how ecosystems will recover after a conflagration.

"Fires typically don't destroy a microbial community — they change its composition," says Jessica Miesel, an ecosystem ecologist at Michigan State University in East Lansing. Some bacteria and fungi have a symbiotic relationship with plants, and this often dictates which nutrients will be available to vegetation in an area. If fires

destroy certain microbial communities, then the plants that rely on them might not be able to re-establish themselves in that ecosystem.