

# AJASN Newsletter

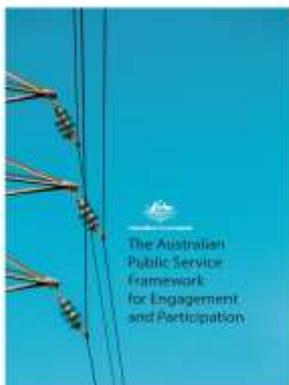
December 2019

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Thanks to Lesley Brown, Peter Black for their contributions to the newsletter.

Next Meeting **March 2020**



## The Public Sector

In a [paper](#) authors examine inaction in public policy. They present five types of inaction: calculated inaction, ideological inaction, imposed inaction, reluctant inaction and inadvertent inaction. They also explore the core drivers of inaction from the perspective of individuals, public organisations, governments and networks. (Related [article](#).)

In the United States [privatisation led to rapidly escalating costs](#), reduced productivity, and near catastrophic failures of the 2000 and 2010 **censuses**.

The final version of OPSI's AI primer was released: [Hello, World: Artificial Intelligence and its Use in the Public Sector](#). (See Science & Technology in this newsletter for more on AI.) Indonesian President Joko "Jokowi" Widodo has said the government will [replace some civil service positions with artificial intelligence](#), instructing ministers to remove two ranks of public servants (III and IV officials.) Deloitte [explains](#): The U.S. Office of Personal Management has already done the math. Machines powered by AI could: (1) Automate nearly 50% of government agency work and (2) Reduce two-thirds of federal employees' workloads by 30%.

This article discusses the '[new wave of contemporary deliberative democracy](#)' that is based on the premise that political decisions should be the result of reasonable discussion among citizens. Common attributes, skills, and strategies of policy entrepreneurs in this short [paper](#).

This [article](#) investigates whether Australian politicians adopt a fake news discourse. Australian politicians' use of fake news discourse is rare, but it is amplified by news media. In Australia fake news discourse is predominantly the domain of conservatives. Frequent users employ fake news discourse to delegitimise primarily the media, but also political opponents.

The Australian Prime Minister announced an [overhaul of the federal public service](#), cutting the number of departments (from 18 to 14) and creating several new mega ones, removing five secretaries ([here](#) too.) There were no changes to ministry or portfolio arrangements. This will take effect from February 2020. The Thodey Review of the Australian Public Service was released – read the [review](#), read the government [response](#) and read a related [open letter](#). There has only been two other independent reviews - Coombs (1970s) and Reid (1980s).The 2019 [Australian Election Study](#) (AES) published by ANU.

This [blog](#) post is a modified version of 'A primer on policy entrepreneurs' published on 6 March 2017 on the ANZSOG [Australia and New Zealand School of Government] [website](#).

Sanna Marin, Finland's 34-year-old Transportation Minister was [selected](#) Dec. 8 as the country's Prime Minister, making her the youngest leader to ever hold the job, and the world's youngest sitting PM. Will there be another [Scottish independence vote](#)? Marin floated the idea of a four-day, 24-hour work week [earlier](#) in 2019.

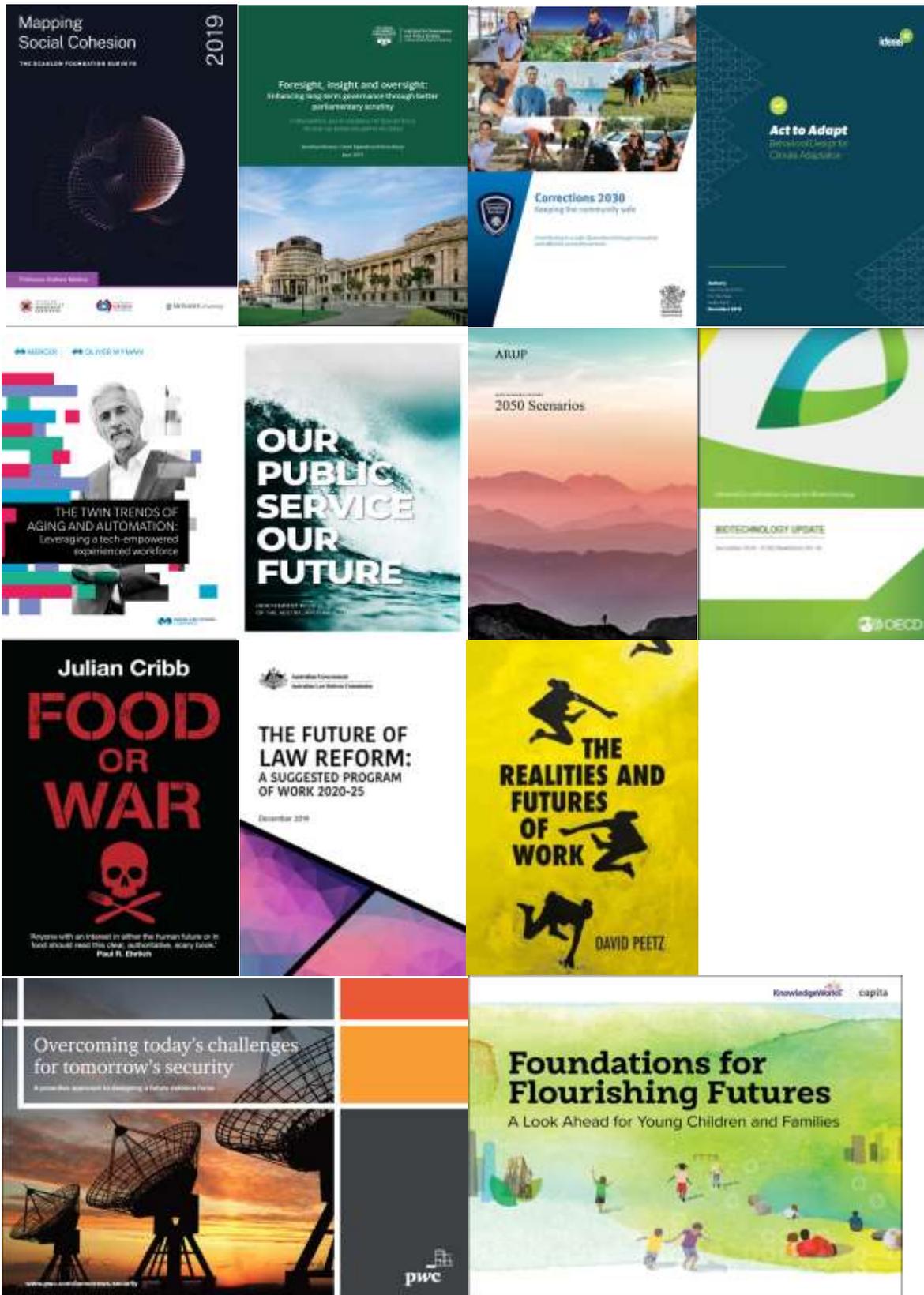
Here is a [summary](#) of the APS's 2018-19 State of the Service Report. The Australian Election [Study](#) (AES) was released, 2019.

Here is an announcement about a new [NSW Public Policy Institute](#).

### Please Note:

**In 2020, Kate Delaney and Brett Pepler will co-convene the Australian Joint Agencies Scanning Network (AJASN). Kate and Brett have collaborated on foresight projects for over ten years. Brett is the Managing Director of Intelligent Futures Pty Ltd, an independent consultancy providing intelligence-led approaches for managing uncertainty. Intelligent Futures is based in Sydney and over the last twenty years has undertaken professional engagements in the United States of America, United Kingdom,**

Read



\*Click on the image to be taken to the actual document or to access a related link

## Agriculture (& food)

This opinion piece says the national government and the peak agricultural bodies do not have the analytical capacity to develop a cross-jurisdiction, cross-discipline, cross-sector [national drought policy](#). And, it then says civil society (in partnership with the CSIRO and experienced farmers) are not funded to do so.

A new [study](#) by the Australian Bureau of Agricultural and Resource Economics and Sciences quantifies the impacts of recent climate variability on the profits of Australian broadacre farms. The results show that changes in temperature and rainfall over the past 20 years have had a negative effect on average farm profits (cut about 22%) while also increasing risk. The [study](#) focuses on [particulate pollution](#), including PM 2.5, which the EPA has identified as the cause of 90 percent of the 100,000 annual premature deaths in the U.S. from air pollution.

U.S. payments to soybean growers (meant to buffer the downside of the trade war with China) may be over-compensating them according to this [report](#). Six academic studies have all concluded that the U.S. Department of Agriculture overestimated the negative impact of trade disruptions on soy purchases when it calculated bailout payments. U.S. farms cost the economy more in health and environmental damage than they contribute to the economy, according to a recent study.

The Federal Court of Australia ordered [a farmer in New South Wales](#) to pay \$290,000 (AU) to a blueberry-producing company because he had grown and sold a proprietary variety of the fruit without permission. The case may affect how we develop new varieties of plants. This in turn might influence food security and climate change adaptation.

[Coating seeds](#) in a combination of silk and bacteria may mean plants can create their own fertilizer and grow in places that otherwise couldn't support agriculture (e.g. salty soil.)

Researchers looking into *African swine fever* published early [results](#) for a promising, prototype vaccine for the disease.

From December, the greater New York City urban area (five boroughs) will begin observing [Meatless Mondays](#), having made a pledge to swap out all meat-based meals for a plant-based alternative. \*11 jails and correctional facilities in these areas.

Some U.S. farmers are making [more money from YouTube than crops](#). They're tapping into America's rosy view of agriculture. According to this [report](#), the U.S. will lose its place among the top five rice-exporting countries because of growers' inability to profitably expand acreage.

ATKearney looked into [meat alternatives that have the potential to disrupt](#) the multibillion-dollar global meat industry (food and agriculture.) They tried to answer essential questions: Which of the new products have the most disruption potential? What are the resulting shifts within the value chain, and who will benefit most? (There are some interesting infographics in the article – see [Figure 4 next page](#).) Dutch start-up [Meatable](#) is aiming to catch pork up to its bovine and avian counterparts (in terms of cultured meat. (A February 2019 [study](#) by the Animal Advocacy Research Fund found that just 30 percent of Americans would be extremely willing to buy cell-based meat on a regular basis.)

[Recent research](#) evaluated the simultaneous impacts of climate change on agriculture and marine fisheries globally. Climate change is altering conditions that sustain food production, with cascading consequences for food security and global economies.

A recent U.S. study looked at the impact of opening supermarkets in neighbourhoods around the country that previously had been [food deserts](#). While many people began shopping at the new local supermarket after it opened, they generally didn't buy healthier food. Statistically the effect on healthy eating from opening new supermarkets was negligible at best. Researchers calculated that local access to supermarkets explains no more than about 1.5% of the difference in healthy eating between low- and high-income households.

Labelling foods with how much physical activity it would take to burn the calories might lead people to make healthier choices. The findings of a [new analysis](#) suggest they may help. (Researchers looked at 15 studies.)

[Future food demand](#) is not only correlated to the size of the \*population\* but also to the \*size\* of the population. The authors warn that failure to meet the need for more calories could lead to greater global inequality.

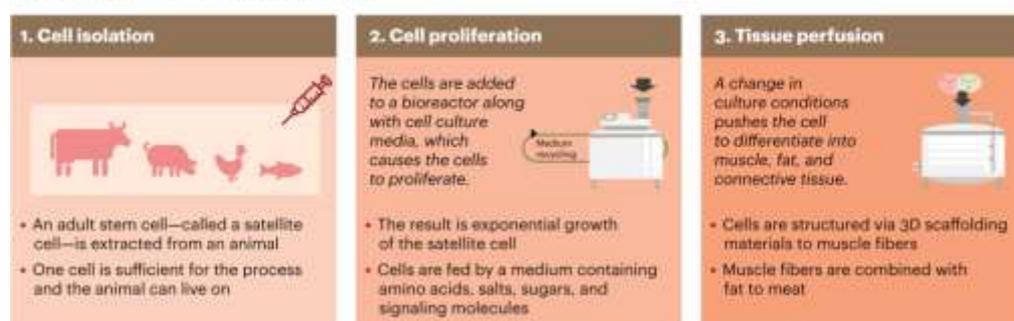
Figure 4

## The production processes for novel vegan meat replacement and cultured meat are quite different

### Process to create novel vegan meat replacement



### Process to create cultured meat



Sources: Good Food Institute; Impossible Foods; A.T. Kearney analysis

## Defence, Geopolitics, Police, Emergency Services & related

[A study](#) found that every \$1 spent acquiring undeveloped properties in the 100-year floodplain — which have a 1% chance of flooding in any given year — returns \$5 that would be spent on emergency services, flood insurance claims and other flood damage costs if those properties became developed.

The Lowy [2019 Global Diplomacy Index](#) looks at how the world's diplomatic networks are expanding and shrinking. Of the 61 countries covered in the Index – among them all OECD, G20, and most Asian countries – 34 grew their networks between 2017 and 2019. China has overtaken the United States to have the largest diplomatic network (with 276 posts +3 more than the United States' network.)

Disinformation has mostly been a weapon of nation states. But cyber criminals have now started touting similar capabilities more broadly (on the Dark Web.) It's believed to be the first time underground forums have been found to be [offering commercial disinformation services](#).

Ear, eye, brain and muscular enhancement is 'technically feasible by 2050 or earlier,' according to a [study](#) released by the U.S. Army's Combat Capabilities Development Command.

Report: 'Forecasting and Foresight: [Methods for Anticipating Governance Breakdown and Violent Conflict](#),' with a focus on Europe.

The Pentagon is concerned about [home DNA kits](#), citing concerns that 'outside parties are exploiting the use of genetic materials for questionable purposes,' including mass surveillance & unauthorised tracking.

## Economy

We are entering a world with [unenforceable trade rules](#). In the World Trade Organization the terms of two of the remaining three members of its Appellate Body expire in December. It is meant to have seven. Appointments to the Appellate Body can be blocked by any one of the WTO's 164 members. The United States has blocked every proposed appointment and reappointment since June 2017. The Appellate Body will be unable to hear new appeals, as the minimum requirement for any decision is [three](#). The Appellate

Body hears appeals from WTO adjudications. If it can't function, and if there is an appeal, those adjudications have no force. The WTO dispute settlement system is vitally important for countries which rely heavily on exports for their economic well-being. ([Related](#)) The EU will draw up plans for a [carbon border adjustment](#) - a levy on imports from countries not doing their bit.

This report says the tax cut had zero impact on aggregate consumer spending. This was despite the anticipated benefit of recent Commonwealth government tax cuts in boosting disposable income and stimulating more spending. [Needle in a Haystack: Searching for the Impact of Tax Cuts on Consumer Spending and Economic Growth](#). ([Here](#) too.) December data from the ABS on [Australian employment conditions shows](#) once again full-time permanent jobs with normal entitlements (paid holidays, sick leave) make up under 1/2 of total employment.

This [study](#) indicates is that border walls reduce legal trade as well as illicit activity, with reductions in median imports and exports of as much as 31%.

Better educated, better paid white collar workers will be the most affected by artificial intelligence (AI), according to a [report](#) by the Brookings Institution. New [data](#) from ABS on Australian employment conditions shows (again) full-time permanent jobs with normal entitlements (paid holidays, sick leave) make up under one-half of total employment. Two global mega-trends — automation and aging — are coming together to upend the [future of work](#) according to this U.S. report. Here is an [article](#) on 'How to redesign government work for the future.' And [Law & AI](#) examines the impact of AI solutions on the legal world. (See also a think tank report on: The [U.S.] Department of [Defense Posture for Artificial Intelligence](#))

This [study](#) points to the possibility of using data shared on social media to match an individual to a suitable job (using a tool available through IBM's cloud-based artificial intelligence engine Watson, and its Personality Insights service.)

Anthony Albanese (and others) called for tax breaks and special leave payments for [volunteer firefighters](#) battling a record fire season.

Each \$1 of Bitcoin value created in 2018 was responsible for \$0.49 in health and climate damages in the U.S. and \$0.37 in China, researchers report in a [study](#). The reason is that cryptocurrency mining uses a lot of electricity. (Note that the electricity requirements are constantly increasing, along with the associated damages.)

This [article](#) discusses structural upheaval in New Zealand's broadcasting sector, both public and commercial. The NZ Government is thinking about disestablishing/replacing both the public interest radio broadcaster RNZ (Radio New Zealand) and the commercially funded television broadcaster TVNZ to create an entirely new public media entity.

A study by the Responsible Investment Association Australasia (RIAA) [Responsible Investment Super Study 2019](#) was published. The report found 13 funds, considered leaders in the responsible investing space, outperformed 41 other funds over one, three and five-year time frames.

A community of [fifty 3D printed homes](#) is going up in Mexico's southern state of Tabasco (the first two took about 24 hours each to print.)

Insurance companies, banks, and health-care organisations can dramatically improve their risk models [by analyzing images of policyholders' houses](#). Here's a [report](#) by Australia's largest general insurer IAG and the US National Center for Atmospheric Research (NCAR) on climate change.



Further privatisation of government services in Australia: 'New [aged care assessment arrangements](#) will provide streamlined consumer assessment for access to aged care services from April 2021.'

## Education

These are some of the [results](#) from the OECD's 2018 Program for International Student Assessment (PISA) which tested the performance of education systems across 79 countries and economies.

In New Zealand, after a trial period, micro-credentials can now be [approved by NZQA](#) as part of New Zealand's regulated education and training system.

Here is [research](#) on the four-day school week (mainly U.S. related.)

The UNESCO General Conference adopted the [Global Convention on the Recognition of Qualifications concerning Higher Education](#), which aims to improve student mobility and access to higher education across regions and continents and will be the first United Nations treaty on higher education with a global scope.

When the school year begins in Italy in September 2020, students in all grades will learn about climate change in civics classes—and the subject will also begin to be part of the curriculum in classes such as math and physics. The country is the first to make [climate change a mandatory part of education](#).

## Environment

The Oxford Word of the Year 2019 is [climate emergency](#). Climate emergency is defined as 'a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.'

This pay-walled [paper](#) addresses how the big global environmental problems of today interconnected.

The Indian Supreme Court has declared that state governments will have to pay their citizens compensation if they fail to provide [clean air and water](#). The US government has for the first time authorized funding to research [geoengineering](#).

A [report](#) from the Environmental Investigation Agency (EIA) and Greenpeace looking at grocery stores in the UK suggests that the plastic bags for life failed to do the one thing they were meant to do – in 2019, the top 10 UK grocery stores reported selling 1.5 billion of these bags (about 54 bags for life per household in the UK.)

The collision of rapid population growth and global urbanisation is straining a crucial, often overlooked material: [sand](#).

NZ created a [Climate Change Commission](#) – an independent, non-political body to monitor and advise on how governments can meet New Zealand's climate change targets. [New Zealand's retreating southern glaciers are facing a new threat](#): clouds of orange soot from bushfires in Australia. Scientists said that the ash which fell on the pristine snow this week from 1,200 miles away across the Tasman Sea could absorb more heat and melt snow faster this summer, as one climate disaster accelerates another.

Australia ranked last in global [assessment](#) on climate action. An EU Green deal related [document](#): Should differences in levels of ambition worldwide persist, as the EU increases its climate ambition, the Commission will propose a carbon border adjustment mechanism [a 'Carbon Border Tax'], for selected sectors, to reduce the risk of carbon leakage [i.e. displacing production.] This will likely hit Australia.

The world may already have crossed a series of [climate tipping points](#), according to a stark warning from scientists. This risk is 'an existential threat to civilisation' and 'we are in a state of planetary emergency.' (Here is a related [article](#) and [another](#).) The articles indicate the changes come in three forms: the runaway loss of ice sheets, changes to forests and other natural carbon stores, and the disabling of the ocean circulation system. [Recent research](#) evaluated the simultaneous impacts of climate change on agriculture and marine fisheries globally. Climate change is altering conditions that sustain food production, with cascading consequences for food security and global economies. [Greenland is losing ice](#) seven times faster than in the 1990s and is tracking the Intergovernmental Panel on Climate Change's high-end climate warming scenario, which would see 400 million people exposed to coastal flooding by 2100.

The [climate services industry](#) is fast growing in the United States. Rather than focus broadly on the regional, national or global impacts of rising temperatures, providers of climate services create data tailored to specific decision-makers: the mayor of a coastal city, say, or the CEO of an energy utility. There is potential for massive profits by selling customized data to clients who want to learn in explicit financial detail where and

how much climate change will affect them. This article asks: 'How do we avoid a future in which the best data for saving lives and property from climate destruction are only available to those who can afford it?'

The [Emission Gap Report 2019](#) is the 10th edition of the UN Environment Programme report.

This article discusses [wildfire modelling](#) in the United States and the need to update the 47-year-old standard for predicting what fires will do (points to other resources to explore.)

Canadian food retailer, Sobeys Inc., has opened a new store with one of Canada's first [parking lots to be paved entirely with post-consumer plastics](#). More than 6 million plastic checkout bags were diverted from local landfills to become part of the mixture.

This [opinion](#) piece says that North American ski industry could collapse due to climate change. 'The future of our multi-billion dollar ski industry depends on our climate choices.'

## Foresight

What will humans look like in 100 years? [A TED Talk](#).

If you want to read a European paper on the **future of the family** ask Kate for a copy. Also see another (subject related) [report](#) 'Foundations for Flourishing Futures A Look Ahead for Young Children and Families.'

This [paper](#) looks at what happens when you combine simulation (gaming) with other futures methods to explore new ways to organise an urban food system.

Deloitte has written about the [future of law enforcement](#).

Here are Bank of America's top 10 [investing themes](#) to watch over the next decade.

Twelve themes experts predict [what will shape the world in 50](#) years: AI, algae, implantables, climate change, cryptocurrency, empathy, genetics, lab-grown meat, surveillance, universal basic income, VR/XR, water.

This 'Future of Retail' [blog](#) discusses how 3D printing will change the way our clothes (and most consumer goods) are made. Dubai unveiled the [largest 3D printed](#) building on the planet.

This ARUP [report](#) explores four plausible future scenarios based on the intersection between our planet's health and societal conditions. The four divergent futures – Humans Inc., Extinction Express, Greentocracy and Post Anthropocene – range from the collapse of our society and natural systems, to the two living in sustainable harmony.

Here is an [article](#) on the post-apocalyptic underground future.

## Health

Children were exposed to higher air pollutant levels during a California [wildfire](#) than during a similar-sized controlled burn, and the difference was reflected by changes in immune markers in their blood, a new study from the Stanford University School of Medicine has found.

An NGO which supports older people and their carers has [called for a new type of leave](#) – similar to paid parental leave – to ease the burden on carers and help them stay in the workforce. (Related [study](#) on costs of informal care in Australia.)

Here is a [study](#) about a once a month birth control pill Proof-of-concept experiments were conducted late last year. Since then, the long-lasting contraceptive has begun to be commercially developed by a U.S. company (with \$13 million start-up funding from the Gates Foundation.)

A new U.S. report [Regulating Medicines in a Globalized World: The Need for Increased Reliance Among Regulators](#) contains recommendations to promote information sharing among RAs with the aim of protecting public health, ensuring faster access to critical medicines, and encouraging innovation in medicine and technology.

A world-first (CSIRO) computational model that accurately predicts the spread of infectious diseases carried by air passengers, such as dengue fever, could help prevent future outbreaks. The model was recently published in PLOS ONE and can be downloaded [here](#).

A species of bacteria commonly found in our gut seems to have been [turned infectious](#) by antibiotic use.

A trial vaccine was able to successfully wipe out [breast cancer](#) in a Florida patient.

Researchers reported on a 'solid-state neuron' that accurately models the behavior of biological nerve cells. In a [paper](#) the team says the devices could be plugged into biological neural circuits to repair damage or disease.

A significant link between the [spatial distribution of urban greenspace](#) and mortality risk has been established in a new study.

French phone and internet provider Orange has been found guilty of 'moral harassment' that resulted in a string of [employee suicides](#) during the late 2000s, a Paris court has ruled.

## **Innovation**

KPMG has written on '[The future of automotive innovation](#): transitioning from the Internal Combustion Engine to the Internal Computing Engine.'

One finding of a [study](#) of public sector innovations labs: 'Secondly, the struggle to pierce through the 'permafrost' of middle management raises questions about the hierarchical structure and perverse performance measures of the public sector, which may be preventing more innovative and collaborative approaches from gaining traction.'

A [study](#) provides managers with a framework to help their companies intentionally discard obsolete, or soon-to-be obsolete, knowledge and processes, and introduce a 'stop-doing' culture.

**ICYMI:** this 2018 research [reviewed](#) 145 empirical studies on the effects of constraints on creativity and innovation, and found that individuals, teams, and organizations benefit from a healthy dose of constraints. It is only when the constraints become too high that they stifle creativity and innovation.

## **Nudges (Behavioural Science)**

Some [projects](#) on how behavioural science changed lives in 2019 from Ideas42: fewer school absences, more respectful maternal care, additional evidence that work requirements for public programs don't work, etc.

## **Rural**

The Select Committee on [Jobs for the Future in Regional Areas](#) which was established on 31 July 2019 issued its report.

The low birth rate and Spain's ageing society – as well as poor infrastructure – have hit Galicia hard (a region in Spain). It has 3,562 abandoned villages and that number rises by one every week, according to Spain's national statistics body. So an entrepreneurial couple have established a business that aims to help tackle the problem: they [sell entire villages](#) to buyers.

A recent report [Rural Development Hubs: Strengthening America's Rural Innovation Infrastructure](#) focuses on actions that could build capacity to advance rural community and economic development to improve equity, health and prosperity for future generations in rural America. The report presents 10 routes for strengthening rural development in three main categories: shifting mindsets; constructing or revising systems and policies; and building capacity.

## **Science & Technology**

A new \$31.8 million [ARC Centre of Excellence for Automated Decision-Making and Society](#) will investigate how rapidly emerging autonomous decision-making technologies, already replacing human judgement in health, social services, transport, and the media, are impacting on society.

This article shows how [misinformation about AI is common](#) – prominent media outlets often misrepresent results, corporate interests contribute to the problem and so on. 'The overall tendency towards interpreting each incremental advance as revolutionary is widespread, because it fits a happy narrative of human triumph. The net consequences could, in the end, debilitate the field, paradoxically inducing an AI winter.' Facebook's head of AI [said](#) deep learning has a lot of limitations, and we may never achieve general AI. There's little scientific basis to emotion recognition technology, so it should be banned from use in decisions that affect people's lives, says research institute AI Now in its [annual report](#). Despite the lack of evidence that

machines can work out how we're feeling, emotion recognition is estimated to be at least a \$20 billion market, and it's [growing rapidly](#). The technology is currently being used to [assess job applicants](#) and people suspected of crimes. RAND, an American think tank, wrote [The Department of Defense Posture for Artificial Intelligence](#). This [opinion](#) piece says – 'The discourse of ethical AI was aligned strategically with a Silicon Valley effort seeking to avoid legally enforceable restrictions of controversial technologies.'

This [article](#) addresses the growth (beyond gaming), development and use of extended reality, or XR — an umbrella term that encompasses virtual reality, augmented reality, and other technologies that blur the line between the real world and simulated worlds.

This [article](#) discusses how a rapidly changing media landscape and polarisation that pose serious challenges to science communication on health and climate issues. It looks at the reception to the EAT-Lancet Commission report. This was one of the first attempts to summarise and communicate the best available science on what constitutes a healthy diet within environmental targets. The report stimulated highly polarised debates online including misinformation, conspiracy theories, and personal attacks along with the hashtag #yes2meat.

Hackers have created malware that's designed to kill people. <https://t.co/0iRe5na2tn>

[Plastics production](#) is predicted to double in the next 20 years.

Older people in Japan are strapping on [exoskeletons](#) to help meet the physical demands of their jobs and remain in the workforce longer.

#### Journal articles:

A paper, '[Science Audiences, Misinformation, and Fake News](#),' published in April 2019 highlights some of the biggest challenges in science communication, including declining public trust in the news media.

#### Society

Under changes introduced by the Victorian state government, [surrogate mothers](#) can now claim loss of income capped at two months from the baby's intended parents.

Uber's [US Safety Report](#), the first comprehensive publication of its kind, shares details on Uber's safety progress, its processes, and data related to the reports of the most serious safety incidents occurring on our platform. (Related [story](#))

'[Media forensics](#)' will become a profession, perhaps even an industry, in which attention is paid to content that not only is consumed but is used to advise and decide, and ultimately on which we come to trust.

New research reveals Australia's civil society is under increasing threat. Media raids and the introduction of data surveillance laws have seen Australia's civic rating downgraded, with a [new report](#) raising serious concerns the government is trying to 'muzzle criticism.' The downgrade means that while Australia still allows individuals and civil society organisations to exercise freedom of association, peaceful assembly, and expression, violations of these rights is also happening. (New Zealand remains 'open.')

Australia's social security system is increasing, rather than decreasing, the risk of homelessness for welfare recipients, according to this [new report](#). Out of 153 countries Australia now ranks #44 in the global rankings for [gender equality](#). (In 2006 it was #15)

A new charity, *Inclusive Australia*, found (the [index](#)) that one in four Australians had experienced a major form of discrimination, such as being overlooked for a job or discouraged from continuing education within the last two years. A crackdown on advocacy charities in Germany is part of a disturbing trend happening globally ([story](#).)

## A map of Britain's housing crisis



### Learning resources (& professional development)

**Tipping point analysis:** Bain and Company uses four forecasting tools, together, to help predict whether a new technology will take off, when the tipping point will arrive and what the speed of market adoption will be. 'The four are: experience curves (e-curves), which show how unit costs decline relative to increased production volume; Elements of Value® analysis, to identify attributes customers value most in a product, such as reduced cost or saving time; adoption curves (s-curves), which forecast the likely pace of adoption and saturation point; and analysis of barriers and accelerators, such as government policy, technology or consumer attitudes that could slow or speed the arrival and penetration of an innovation.'

The BBC opened up their insane archive of over 16,000 [sound effects](#), which you can now download in WAV format free of charge.

The Open Data Institute (ODI) developed [a Data Skills Framework](#) that breaks down exactly what skills are needed, and how to go about getting them.

**Fugitive libraries** are an 'undercommons,' a place allowing for ongoing experiments with informal ways of learning together, of building futures together.

### Toolkits

A free toolkit of 25 methods for creative problem solving, all well explained & organised by objectives: <https://t.co/I71cLKFU4h>

A scenario planning toolkit for security and law enforcement: <https://crestresearch.ac.uk/resources/imaginative-scenario-planning-toolkit/>

For a more in-depth understanding of the research and subject, a report can be found here: <https://crestresearch.ac.uk/resources/imaginative-scenario-planning-report/>

A tool for reflecting on research stances to support sustainability transitions <https://prodirna.inra.fr/ft?id=C8968866-EE83-4402-868A-4ED18B8E09A5>

**Journal articles**

Wylie, C. D. (2019). 'Socialization through stories of disaster in engineering laboratories.' *Social Studies of Science* **49**(6): 817-838.

The study author investigated how engineers socialise future engineers. They found that a key method of conveying knowledge about social behaviour and technical practices is the narration of the experience of mistakes and failures ('disaster stories.') Stories promote collaboration, a sense of belonging and the value of continuous learning for all the community's members. They demonstrate the power of storytelling in the acquisition of tacit social and technical knowledge.

Media bias chart

<https://www.adfontesmedia.com/the-chart-version-3-0-what-exactly-are-we-reading/?v=402f03a963ba>

