



# APRIL newsletter

ISSUE 8

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## RESEARCH AND INNOVATION OFFICE

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## Could a computer ever create better art than a human? By Eleanor Lawrie: Technology of Business reporter



Last year a portrait of Edmond Belamy sold for \$432,000 (£337,000).

A bit steep, you might think, for a picture of someone you've never heard of. And you won't have heard of the artist either, as the picture was created by an algorithm drawing on a data set of 15,000 portraits painted between the 14th and 20th Centuries.

And to be honest, it's a bit rubbish.

The sale, which astonished auction house Christie's, raised many important questions. Can a computer, devoid of human emotion, ever be truly creative? Is this portrait really art? Does any of that matter if people

are prepared to pay for it?

And as artificial intelligence evolves and eventually perhaps reaches or surpasses human level intelligence, what will this mean for human artists and the creative industries in general?

Algorithms have already created artworks, poems, and pieces of music, but are they merely mimicking rather than creating?

Cognitive neuroscientist Romy Lorenz says a lot depends on how we define creativity.

If creativity means finding completely new ways to solve problems, then AI has already achieved that, she argues, citing Google's DeepMind subsidiary. In 2017, one of DeepMind's AI programmes beat the world's

ancient and highly complex Chinese board game, after apparently mastering creative new moves and innovative strategies within days. Games, particularly those which take place within virtual worlds, have been the perfect setting for AI to solve problems creatively.

But asking an algorithm to create without any human input at all actually yields quite boring results, argues New York-based professor of computer science, Julian Togelius. But is art more than just creative problem-solving?

To read more, access the following link: <https://www.bbc.com/news/business-47700701>

## Inside Story Headline

What do drones and GPS owe to a 1744 shipwreck?

By Tim Harford: BBC World Service, 50 Things That Made the Modern Economy

On 5 October 1744, a storm was brewing in the English Channel. With sails set for home after chasing a French fleet off the coast of Portugal, a squadron of British warships was in trouble.

The lead ship HMS Victory sank 100m to the seabed 50 miles (80km) south of Plymouth, taking with it 1,100 men and - so rumour had it - lots of Portuguese gold. The wreckage lay undisturbed until it

was located by a marine salvage company in 2009. Beyond the rumoured gold, there was something else on board which was arguably much more economically significant.

Also lost that day was the first known attempt to develop an idea that is now used to guide everything from submarines to satellites, from rovers on Mars to the phone in your pocket. When the Victory went down, it took with it John Serson's "whirling speculum",

forerunner to the gyroscope. Combine these instruments with others - accelerometers, magnetometers - and you get a good idea of which way up you are and in which direction you are heading. Feed these outputs into systems that can course-correct, and you have an aeroplane's autopilot, a ship's gyro-stabilizer, and navigation systems on spacecraft or missiles. Add in GPS, and you know where you are.

Read more at: <https://www.bbc.com/news/business-47161370>



## Climate change being fuelled by soil damage - Report by Roger Harrabin: BBC environment analyst

Climate change can't be halted if we carry on degrading the soil, a report will say. There's three times more carbon in the soil than in the atmosphere – but that carbon's being released by deforestation and poor farming. This is fuelling climate change – and compromising our attempts to feed a growing world population, the authors will say. Problems include soils being

eroded, compacted by machinery, built over, or harmed by over-watering. Hurting the soil affects the climate in two ways: it compromises the growth of plants taking in carbon from the atmosphere, and it releases soil carbon previously stored by worms taking leaf matter underground. The warning will come from the awkwardly-named IPBES – the Intergovernmental Science-Policy Platform on

Biodiversity and Ecosystem Services - a panel studying the benefits of nature to humans. The body, which is meeting this week, aims to get all the world's governments singing from the same sheet about the need to protect natural systems. IPBES will formally release its report on Monday 6 May. About 3.2 billion people worldwide are suffering from degraded soils, said IPBES chairman Prof Sir Bob Watson. "That's almost half of the world population." Governments have

Quote of the day

### *Nelson Mandela*

“ I learned that courage was not the absence of fear, but the triumph over it. The brave man is not he who does not feel afraid, but he who conquers that fear.”

Read more at: [https://www.brainyquote.com/quotes/nelson\\_mandela\\_178789](https://www.brainyquote.com/quotes/nelson_mandela_178789)

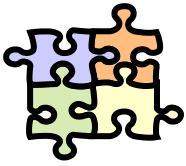


Prof Watson previously led the Inter-governmental Panel on Climate Change (IPCC). "Governments have focused on climate change far more than they have focused on loss of biodiversity or land degradation. All three are equally important to human wellbeing." Soil expert Prof Jane Rickson from Cranfield University, UK, added: "The thin layer of soil covering the Earth's surface represents the

difference between survival and extinction for most terrestrial life. "Only 3% of the planet's surface is suitable for arable production and 75 billion tonnes of fertile soil is lost to land degradation every year." She said soils form at a rate of 1cm in 300 years. There's uncertainty about the exact level of global soil degradation. But the major hotspots are reported to be in South America, where forests are

being felled; sub-Saharan Africa; India and China. Soil scientists in both the biggest Asian nations are worried that their ability to grow their own food may be compromised. Soils are "incredibly important" for our well-being, said Dr Joanna Clark from Reading University. "We all know that crops are grown in soil, but soils are important for climate change as well. There's three times more carbon stored in soil than there is in the atmosphere. So imagine if all that carbon was released, we'd get runaway climate change. So we need to keep the carbon in the soil."

For more information, visit: <https://www.bbc.com/news/science-environment-48043134>



National Conference on Advances in Energy  
Efficient Technologies  
3rd May 2019  
Thiruvananthapuram, India- National  
Conference on Advances in Energy Efficient  
Technologies

3rd May 2019  
Thiruvananthapuram, India  
4th International Hybrid Power Systems  
Workshop

22nd May 2019  
Crete, Greece 4th International Hybrid Power  
Systems Workshop

22nd May 2019  
Crete, Greece  
64th Annual CARPHA Health Research  
Conference

20th June 2019  
Port of Spain, Trinidad and Tobago 64th Annual  
CARPHA Health Research Conference

20th June 2019  
Port of Spain, Trinidad and Tobago  
5th IEEE International Engineering Conference  
(IEC2019)

23rd June 2019  
Erbil, Iraq 5th IEEE International Engineering  
Conference (IEC2019)

23rd June 2019  
Erbil, Iraq  
International Conference on Advanced Research  
in Renewable Energy (ICARRE 2019)

29th June 2019  
Kuala Lumpur, Malaysia- International  
Conference on Advanced Research in  
Renewable Energy (ICARRE 2019)

29th June 2019  
Kuala Lumpur, Malaysia  
13th Annual Baku Summer Energy School



## World Creativity and Innovation Day 21 April

World Creativity and Innovation Day  
(#WCID) is well positioned to encourage  
creative multidisciplinary thinking to help us as the UN  
achieve the sustainable future we want for all.

Creativity and innovation, at both the individual and  
group levels, have become the true wealth of nations in  
the 21st century, according to the findings of the special  
edition of the Creative Economy Report "Widening local  
development pathways", co-published by the United  
Nations Educational, Scientific and Cultural  
Organization (UNESCO) and the UN Development  
Programme (UNDP) through the UN Office for South-  
South Cooperation (UNOSSC).

The creative economy –which includes audiovisual  
products, design, new media, performing arts, publishing  
and visual arts– is a highly transformative sector of the  
world economy in terms of income generation, job  
creation and export earnings. Culture is an essential  
component of sustainable development and represents a  
source of identity, innovation and creativity for the  
individual and community. At the same time, creativity  
and culture have a significant non-monetary value that  
contributes to inclusive social development, to dialogue  
and understanding between peoples.

Cultural and creative industries should be part of  
economic growth strategies, according to the UNESCO  
report on culture and sustainable development. These  
industries are among the most dynamic sectors in the  
world economy, generating \$2.25 billion in revenue and  
29.5 million jobs worldwide. In that spirit, countries are  
harnessing the potential of high-growth areas of the  
market for economic returns and poverty alleviation.

On #WCID, the world is invited to embrace the idea that  
innovation is essential for harnessing the economic  
potential of nations. Innovation, creativity and mass  
entrepreneurship can provide new momentum for  
economic growth and job creation. It can expand  
opportunities for everyone, including women and youth.  
It can provide solutions to some of the most pressing  
problems such as poverty eradication and the elimination  
of hunger.

Source: <https://www.un.org/en/events/creativityday/>

