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# COVID WARNING

IF YOU PICK UP THE PAPER PLEASE TAKE IT AWAY WITH YOU



## Panopto crashes on the first day of term

**Nicolas Manrique** News reporter

Despite long preparations for the beginning of an online term, the lecture capture service Panopto went down early last week due to “higher than expected demand”. The outage was most severe on Monday 5th October, although some students reported experiencing difficulties for the following two days as well. The technical issues have raised questions over the feasibility of an entirely online term, and more particularly about the value to students of a virtual academic year, which is an already heated debate.

Affected students have responded to the outage with frustration. One student in the Physics department, who wished to remain anonymous, expressed



## Watch defending University Challenge champions, Imperial, battle Exeter on Monday to stay in the competition

**Calum Drysdale** Editor in Chief

Having lost their first match against Strathclyde, the Imperial College University Challenge team are making their next appearance on Monday 19<sup>th</sup> October against Exeter in an attempt to remain in the competition.

After their defeat in the first round

we spoke to the team’s captain Michael Kohn about how he got into quizzing and his hopes for the next rounds.

Even though the Imperial team had big shoes to fill, returning to the competition as defending champions the entire team was new, a rule of University Challenge being that you can’t be in the competition more than once. Michael admitted that despite the prac-

### AFROFUTURISM TAKING MUSIC BY STORM

READ ABOUT THE GENRE THAT IS TAKING OVER MUSIC

PAGE 25

### STARLINK IS HIDING THE STARS?

COMMERCIAL USE OF SPACE AND GRAND CONSTELLATIONS HAVE THE POWER TO BRING THE WORLD ONLINE. BUT THEY ARE ALSO BLOCKING TELESCOPES

PAGE 6

### ACTIVE VS PASSIVE EQUITY

ALL THE QUESTIONS THAT YOU WANTED TO ASK ABOUT INVESTMENT AND MONEY ANSWERED HERE FOR YOU

PAGE 36

## WHAT IS FELIX?

Felix is the newspaper of Imperial College Student Union. We provide entertainment, information, and news while also being a space that members of the Imperial College community can use to publish their views and respond to the views of others.

## CAN I WRITE FOR FELIX?

Yes. We welcome all submissions and aim to publish everything we are sent. An editor will work with you to make sure your article is in the best condition it can be for publication. We also produce video and audio content if that interests you more.

## HOW DO I SUBMIT AN ARTICLE TO FELIX?

- If you already have an article in mind or have written one already then send it to the section editors via email. These email addresses can be found at the top of each page in a section.
- If you want to write but don't have a topic in mind, check out or section specific writers Facebook groups that we update every week with topics we would like articles about or email the section editors

Send your article to us by 8 o'clock on Tuesday and we can then have it ready for publication that Friday!

*We are also always recruiting editors, copy editors, photographers, artists and more. If you would like to get involved in Felix in a regular capacity, email Felix@ic.ac.uk*

# SAGE called for online only teaching 4 weeks ago

Calum Drysdale Editor in Chief

The governmental Scientific Advisory Group for Emergencies (SAGE) body called for all university teaching to be fully online 4 weeks ago.

Minutes of the 21st September meeting of SAGE, released on Monday suggest "All university and college teaching to be online unless face to face teaching is absolutely essential"

Although this body only reports to the government and can make no policy and has no power beyond making suggestions, it is clear that the government was warned that student areas would be hotspots of COVID-19 as the large influx of students in close proximity lead to numerous transmission events.

The Times investigation into this has shown that SAGE's fears have been shown to be well founded with areas of Manchester and Nottingham, both which included large student populations, having 1 in 20 people infected. The national average at the time was 1 in 240 infected.

When queried about this, an Imperial College London spokesperson said: "Imperial's STEM focus requires in-person access to labs and specialist equipment. While we are moving much of our teaching and learning online, we have also developed COVID-safe forms of in-person teaching, which remain essential to an Imperial education."

"On-campus teaching - such as laboratory work - will be delivered in a COVID-secure way for as long as government guidance allows and virus transmission among our community remains within local public health thresholds."

While the government did issue additional guidelines on the reopening of university buildings, the government has made a commitment to keeping educational facilities open, even in the case of a Tier 3 London-local lockdown.

The recent government update that places London into a Tier 2 local lockdown in response to elevated infection levels due to begin at midnight of 16<sup>th</sup> October will not affect teaching.

CONTINUED FROM PAGE 1

## Panopto crash

worry for the year to come, saying that the issues "added to the already stressful online university experience". Another noted that "the one thing you expect from this year is to be able to watch your lectures, so when even that breaks it's not a good sign". With support amongst the national student body for reduced fees in the face of the pandemic growing – one online petition has garnered almost 150,000 signatures – it's no surprise that many feel ripped off by the quality of the service.

In response to the technical difficulties, a spokesperson for Imperial College London said, "we are very sorry for the disruption students experienced in the first week of term and we share their frustration". They said that Panopto, which is

used as a lecture capture service by universities nationwide, experienced "capacity issues with their cloud infrastructure". The resulting outage affected Imperial and other universities across the country. Nevertheless, the College assures students that "Panopto have now fixed the issue after major upgrade work was brought forward from December and have apologised to their university clients and students affected."

"Given the importance of remote learning this academic year we will be keeping a close eye on the performance of our recommended digital learning platforms going forward."



**PANOPTO HAVE NOW FIXED THE ISSUE AFTER MAJOR UPGRADE WORK WAS BROUGHT FORWARD FROM DECEMBER**

# DO NOT ADJUST YOUR SET

## Imperial team battle to stay in University challenge



Pictured here are (hopefully) this year's winning team, Justin Wong (left), Katie Marrow (centre left), Michael Kohn (centre right), Imran Rahman (right) and Jeremy Paxman in the centre

### CONTINUED FROM PAGE 1

tice that Imperial had been doing and the fact that Strathclyde are not known as a university that typically performs well the competition, he and his team mates were shaken by being on camera. For the whole team it was the first time they had been on television and Michael admitted that it rattled them. Questions covered topics including river deltas, art, Atlanta based hip-hop and the bones of the human body.

The two teams started out equally, each team getting a starter question but Strathclyde soon pulled away, claiming starter question after question until they had an imposing lead of over 100 points.

# 1st

in the country last year. Imperial won University Challenge last year

A late rally by the Imperial team was not enough to close the gap however and the programme ended with the Imperial team on 155 and the Strathclyde team on 190.

The two teams had a major difference in ages. The average age of the Imperial

team was 19 and all the team were undergraduates while the Strathclyde team included three postgrads and had an average age of 29.

We then moved on to talking about how Michael had himself got into quizzing. Unlike what I expected, he was not a long term University Challenge fanatic but had instead joined the quiz society at the beginning of last year and having been selected for the team in November he and his fellow teams mates had 4 months to prepare for the filming of the first round which happened in February (and was broadcast in August). Although filming was planned to continue through March and April the COVID-19 pandemic put a stop to that meaning that numerous episodes of the competition remain un-filmed.

The other members of the Imperial

### Do you have what it takes?

In which US state are the Vermillion cliffs?

According to John Ruskin, no person who is not a great sculptor or painter can be a member of this profession?

For what do the letters 'su' stand for in groups subject to Lie algebra?

The plastic PET stands for polyethylene what?

### ANSWERS

Arizona  
Architect  
Special unitary  
Terephthalat

Kohn - literature and fine arts and Imran Rahman - social sciences, films, classical music.

Michael explained that the team trained hard for the competition by

trawling through Wikipedia, practising by watching old rounds and seeing if they could buzz in before the people on the screen and curating flashcard lists on Anki, an app often used by medics to remember drug names and anatomy. When I asked if he would be willing to share these lists with students, he politely refused saying that "curating and creating these lists is the most important part of the process".

The specialisations are as follows: Justin Wong - history & geography,

Katie Marrow - word-based questions, the natural world and what Michael referred to as "weird shit" (Katie being the only member of the team to get a question right in a round about the names of different types of windows), Michael

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Wagner - Music and Art, Literature and Film -  
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20th Century - Art from Impressionism to the Present  
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Neuroscience, Psychiatry and Psychology - Understanding Psychotherapy: A Social History

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\*T & Cs apply

## Autumn Events Term Card

At Imperial Enterprise Lab we're passionate about inspiring the next generation of innovators and entrepreneurs. Whether you want to test an idea, develop new skills, start a business or just meet interesting people we're here to help. From skills seminars to competitions and co-working space to expert mentors, we offer all the support you need, free of charge!

### October

- 14 / Idea Challenge
- 15 / How To...Do Customer Discovery on a Budget with Nana Parry
- 15 / Pitch 'n' Mix
- 20 / Innovation Pitch
- 21 / WE Inspire Conference
- 22 / How To...Visualise Data with David McCandless
- 28 / WE Innovate Final
- 29 / How To...Create an Inclusive Culture with Sonya Barlow

### November

- 4 / WE Activity Series: Climate Change & Sustainability Talk
- 5 / How To...Understand Investment with Yvonne Bajela
- 11 / WE Activity Series: Health & Medtech Talk
- 12 / How To...Do Good and Make Money with Vicki Saunders
- 12 / Pitch 'n' Mix
- 16 / Discovery Fund applications close
- 18 / WE Activity Series: Ideation Workshop
- 19 / Innovating Smart Cities Hackathon
- 19 / How To...Be Resilient with Giles Duley
- 25 / WE Activity Series: Future Forecast

### December

- 2 / WE Innovate application deadline
- 10 / Pitch 'n' Mix
- 15 / Innovation Pitch

**How To Talks** - Boost your entrepreneurial know-how with our 60-minute lunchtime expert talks.

**Idea Challenge** - Up for a challenge? Fancy meeting new people? Then join us for an afternoon of brainstorming, problem-solving fun. You might win a prize too!

**Innovation Pitch** - Pitching gets real! Come along to one of our Innovation Pitch evenings where our Imperial innovators showcase their latest projects. You'll also have the opportunity to ask questions and network with the teams.

**Pitch 'n' Mix** - Part networking evening, part pitching session, this is the place to meet future collaborators, get feedback on your pitch, and swap tips and tricks.

**WE Activity Series** - Panel discussions and workshops taking place every Wednesday throughout November for Imperial women.

**WE Inspire Conference** - Celebrating women entrepreneurs and leaders from Imperial and beyond.

**WE Innovate Final** - Watch the five finalists from our women's entrepreneurship programme pitch their idea to win part of the £30k prize fund.

**Discovery Fund** - Need a cash boost to see if your idea has potential? The Discovery Fund could provide just the support you're looking for.

**Innovating Smart Cities Hackathon** - Collaborate across borders to come up with innovative solutions to UN Sustainable Development Goal 11: Sustainable Cities and Communities. In partnership with Tsinghua University Beijing.

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## SCIENCE

# The three-tier lockdown system

► *With a second wave encroaching, Boris Johnson announced a new three-tier restriction system for England that came into force on Wednesday. Felix breaks it down.*

Photo credits: Election Maps UK

Ansh Bhatnagar Science Editor

There are three levels to the new system: medium, high, and very high.

Medium restrictions (colour coded yellow on the map) demand adherence to the rule of six (both indoors and outdoors) as well as the closure of pubs and restaurants at 10pm. The vast majority of the country, including London, is currently under this category.

High level restrictions (orange) ban all indoor household mixing with the rule of six still applying outdoors. This applies to areas in the North East and North West of England, such as the Manchester city region, Newcastle, and

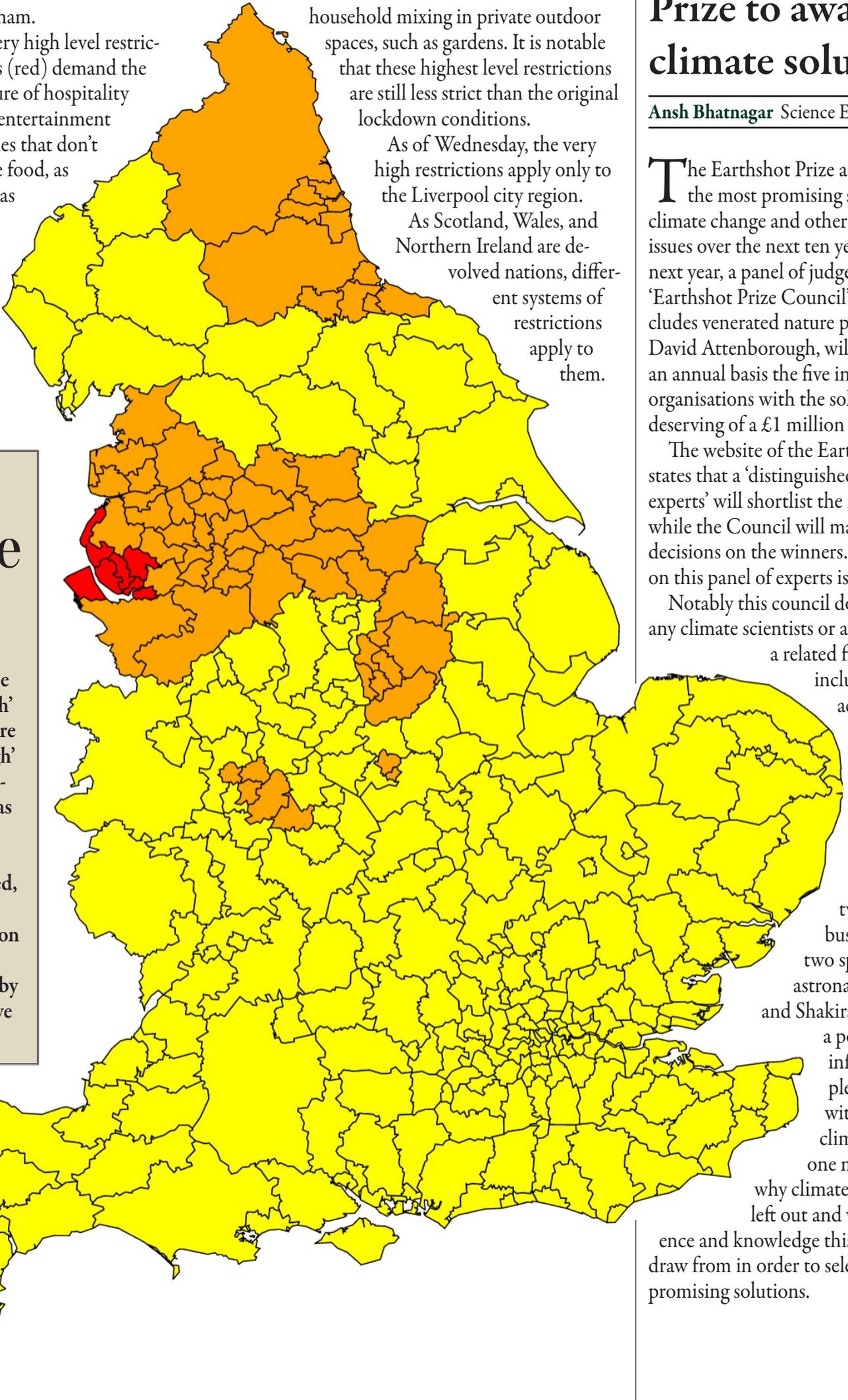
Durham.

Very high level restrictions (red) demand the closure of hospitality and entertainment venues that don't serve food, as well as

household mixing in private outdoor spaces, such as gardens. It is notable that these highest level restrictions are still less strict than the original lockdown conditions.

As of Wednesday, the very high restrictions apply only to the Liverpool city region.

As Scotland, Wales, and Northern Ireland are devolved nations, different systems of restrictions apply to them.



## Last minute London update

On Wednesday morning it was announced that local leaders of Greater Manchester and Lancashire were in talks with the Government that may see those regions move up to the 'Very high' restrictions, while London and Essex are confirmed to be moving up to the 'High' restrictions. The decision to move London to the higher tier of restrictions was supported by Mayor Sadiq Khan.

The new restrictions in London will see all indoor household mixing banned, as explained above. These restrictions officially come into effect at midnight on Friday.

Please stay safe and follow the rules by avoiding meeting people you do not live with.

## Prince William launches £50 million Earthshot Prize to award climate solutions

Ansh Bhatnagar Science Editor

The Earthshot Prize aims to award the most promising solutions to climate change and other environmental issues over the next ten years. Starting next year, a panel of judges, called the 'Earthshot Prize Council' which includes venerated nature presenter Sir David Attenborough, will decide on an annual basis the five individuals or organisations with the solutions most deserving of a £1 million prize.

The website of the Earthshot Prize states that a 'distinguished panel of experts' will shortlist the nominations, while the Council will make the final decisions on the winners. Further detail on this panel of experts is not given.

Notably this council does not include any climate scientists or academics of a related field. While it

includes a climate activist, a nature presenter, and two people with climate-related NGO experience, it also includes two royals, two business leaders, two sportsmen, an astronaut, an actress, and Shakira. While it is a positive that influential people are on board with finding climate solutions, one may wonder why climate scientists were left out and what experience and knowledge this panel will draw from in order to select the most promising solutions.

# Why RNA may be the answer to curing genetic (and other) diseases

Photo credits: Flickr.

**Julia Dabrowska** Science Editor

Genetically driven diseases encompass a wide variety of illnesses and, in addition to genetic disorders, include some of the world's most lethal killers, such as diabetes or cancer. These occur when a specific region of DNA is deleted, replicated, or exchanged, leading to mutations and faulty protein production. While these mutations are frequently inherited, they can also arise spontaneously later in life, such as in most types of cancer.

Advanced therapies, including gene therapies, aim to treat or prevent genetic diseases by addressing the underlying cause: faulty DNA code. For example, gene-based therapeutics can be introduced to inactivate or 'silence' faulty genes, or conversely to stimulate expression of correctly functioning ones to amplify their effect. Genes can also be modified or reprogrammed, either within the patient or in vitro, to provide correctly functioning proteins.

The type of appropriate therapy will depend on the individual's genetic composition and stage at which the genetic mutation occurs, and so is highly tailored to the patient. This illustrates the concept of personalised medicine - and signals a move away from the current, more generalised, medication approach.

RNA, despite being known primarily for its role in protein synthesis, is a particularly effective gene therapeutic. Due to its diverse biological functions, if engineered correctly, it encounters significantly less obstacles when entering our cells than synthetic drugs, and has less potential for toxic side-effects than, for example, viral vectors, which can risk unwanted mutations or immune hyper-reactions. Moreover, small nucleotide changes can be easily made to adjust the RNA's functions within the cell, simultaneously achieving a more targeted and versatile mode of action than currently used treatments. It is also increasingly easier and cost-effective to manufacture than more complicated alternatives, such as immunotherapies.

A currently popular method which employs RNA is CRISPR-Cas9, where a pre-designed targeting guide RNA (gRNA) sequence is embedded within a longer RNA strand (yes, it is this mechanism which was the basis of this year's Nobel Prize in Chemistry!). The CRISPR-Cas9 complex, guided by the gRNA, binds to a specific DNA sequence inside the patient's cells, and the Cas 9 enzyme acts to cut the DNA at this location. This triggers the cell to recognise that DNA damage has occurred and activate its own repair machinery to add, replace, or delete a

gene fragment - such as a piece of faulty genetic code. CRISPR itself is extremely versatile and has high potential for

“

## RNA THERAPIES SIMULTANEOUSLY ACHIEVE A MORE TARGETED AND VERSATILE MODE OF ACTION THAN CURRENTLY-USED TREATMENTS

a plethora of genetic diseases, but it is not yet widespread for human use, as off-target effects and other limitations are still being eliminated via early-stage studies. However, one current experimental focus is attempting to cure Huntington's disease in humans, a genetic disease classified by additional, repeated segments of genetic code that cause deformation of the subsequently generated protein, which disrupts the functioning of neuron cells. Use of CRISPR gene editing tools aim to remove the surplus repeats to prevent escalation of the disease.

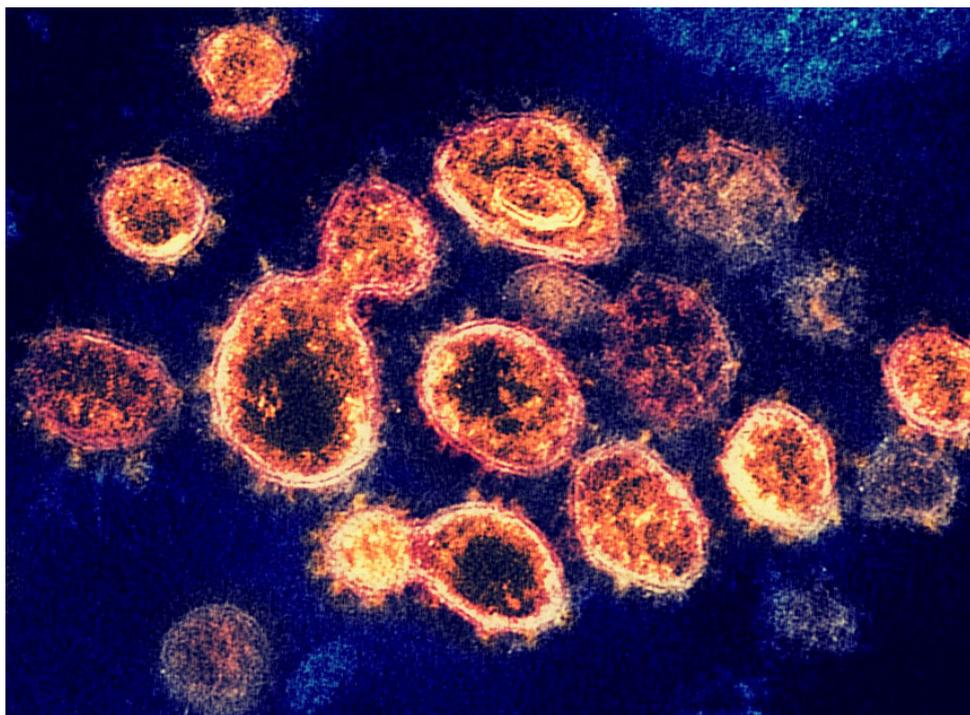
Although the most high-profile, RNA gene therapies are not limited to CRISPR tools. A type of RNA known as mRNA (messenger RNA) can be used, focusing on replacing a patient's faulty mRNA, such as in cystic fibrosis, a disease that occurs as a result of the mutated CFTR protein. mRNA is a form of RNA which acts as the connection between protein expression and raw DNA code, and so delivering healthy mRNA to the patient could correct an underlying genetic disorder. Candidate drugs of this type involving inhalation of nanoparticles containing healthy mRNA to help replace the faulty CFTR protein are currently being developed by TranslateBio and Moderna Therapeutics, among others.

peutics, among others.

mRNA can also be used to develop vaccines; one of the leading vaccines being developed against COVID-19 is of this type and is being developed by Moderna Therapeutics. Injected mRNA can be translated into proteins by our own cell machinery to stimulate the immune system to produce a specific response against a pathogen such as the flu, Zika or rabies viruses. Specific cancer biomarkers, called neoepitopes, can also be targeted using mRNA, such as for melanoma treatment.

Finally, an RNA therapy focused on degrading faulty proteins, termed antisense therapy, is on the rise and is currently more prominent than mRNA due to its ease of manufacture. This primarily uses a type of RNA known as interfering RNA (RNAi, or siRNA - short interfering RNA), and was the basis of the 2006 Nobel Prize in Physiology/Medicine. These short RNAs carry instructions for the cell to destroy particular malfunctioning mRNAs within itself. Again, this is gaining traction with therapies to treat haemophilia and improve kidney transplant outcomes, which are already being used, while multiple others are in clinical trials. In 2018, Alnylam Pharmaceuticals launched the first approved siRNA drug to treat a rare degenerative disorder called hereditary ATTR amyloidosis. Their drug, patisiran, is either injected or administered intravenously, and exhibits its effects in the liver; as do most candidate drugs at this point in time. Since then, however, only one other siRNA drug has been approved; but several others are showing promise in late-stage clinical trials.

RNA-based therapies hold immense potential, but the answer to the key limitation - the lack of efficient drug delivery systems which can target organs other than the liver - is the primary focus in the field. With further research and investment into the sector, RNA-based therapies appear to be the basis of the next pharmaceutical revolution, and a solid step towards curing what was once thought to be the incurable.



Microscope image of the mRNA vaccine candidate being developed by Moderna Therapeutics

## SCIENCE

# How (not) to respond to a pandemic - Part Two

Ansh Bhatnagar Science Editor

The decision to institute a national lockdown in the UK in response to the coronavirus pandemic, announced via televised address on the 23rd March, came far too late.

## A LATE LOCKDOWN

Pandemics spread exponentially; as more people get infected with a virus, there is an even greater number of people that the virus can infect, and if that larger pool gets infected as well, there is in turn an even bigger group that the virus has access to. This exponential growth is characterised by R, the effective reproduction number. When R is above 1, the pandemic is growing exponentially. When it is below 1, it is decaying exponentially. At a time where R is above 1, decisions must be taken proactively and decisively, because every day the threat becomes substantially greater than before.

Neil Ferguson, Imperial's lead epidemiologist who advised the government in the early days of the pandemic, told MPs on the Science and Technology select committee that if the lockdown had been instituted a week earlier, it could've halved the death toll. The key assumption for this estimate was based on analysis that the epidemic was doubling every three to four days – locking down a week earlier would've been at a time when infection rates were about four times smaller than they were on the day of lockdown. Unfortunately, a lot of time was wasted on a faulty 'herd immunity' strategy in the critical days of the pandemic, as covered in last week's piece.

## CARE HOMES AND PPE

Care homes look after some of the most vulnerable in our society, particularly those most at risk from COVID-19 – the elderly, and particularly those with dementia who may struggle

to adhere to new public health advice through no fault of their own. In July, statistics from the Office of National Statistics (ONS) showed that 30,000 excess deaths took place in care homes during the pandemic up to that point, with COVID-19 being responsible for two thirds of these. Previous work from the ONS suggested that many of the cases in the remaining third could also be due to coronavirus.

**30k** excess deaths in care homes

But the government did little to prevent it. In fact, their policies actively encouraged it; in June it emerged that until mid-April, NHS policy was to discharge patients back into care homes without needing a negative COVID-19 test. This meant that many of the patients discharged back could have been carrying the virus straight into the enclosed spaces where some of the most vulnerable people live. This was nothing less than an extraordinary dereliction of duty that was not rectified until the peak of the first wave.

As care homes are privatised, care home companies have responsibility to procure adequate personal protective equipment (PPE) for their staff. Shortages of PPE in care homes meant that both staff and residents were put at increased risk of infection. However, these companies often shirked responsibility; the youngest MP, Nadia Whittome, spoke out about the shortage of PPE at the care home she worked

at as a second job. She was promptly sacked and accused of spreading misinformation by the care home, a claim that proved false months later as the care home admitted that they did indeed have a shortage of PPE at the time.

## A SUMMER OF SPREADING

While lockdown came too late, it's also possible that it lifted too early. Experts, such as those from the Government's own Scientific Advisory Group for Emergencies (SAGE), and those in a

letter published by the British Medical Journal, called for lockdown to be eased much more gradually, coupled with an

effective test and trace system. Professor Michael Baker of the University of Otago, who advised on New Zealand's world renowned COVID response, also echoed the same message.

Yet the Government was adamant to see children returning to school in June/July, despite it being the end of the academic year, a period where not much learning takes place anyway. The Government also encouraged people to return the office, despite there being no need to do this for companies that had adapted to operating remotely. This encouragement further put workers at risk, many of whom, particularly in densely populated London, take public transport to go to work.

Even more bizarrely, the Government were quick to open pubs, and their popular Eat Out to Help Out scheme applied only to dine-in meals. This incentivised people to crowd into restaurants, many of which were not even observing proper social distancing. Queues formed outside of restaurants in August as Britons flocked to get half price discounts. Was the dine-in stipulation really necessary for this scheme? Surely the same restaurants could've gathered even more profit if the Government allowed the offer on takeaways, reducing the burden on waiting staff?

## THE TEST AND TRACE TRAVESTY

Public health experts are generally unified on the same message: we cannot rely on lockdowns, the best way out of this is to have an effective testing and tracing system. That's how New Zealand and Vietnam have less coronavirus cases than the White House, while also experiencing a degree of return to normality.



Photo credits: Simon Walker/HM

## CONTINUED

Lockdowns have negative socio-economic effects, such as with mental health, domestic abuse, lack of access to education... the list goes on. The first lockdown was a sacrifice by the people to give this Government time to boost our historically underfunded healthcare system and to build a world leading test and trace system so that any new infections can be isolated before they spread far, ideally keeping R below 1 and seeing domestic transmission come to an end.

Yet the Government failed, outsourcing this by handing over £10 billion in contracts to private firms such as Deloitte and Serco who have produced a system that, according to the Government's own experts on SAGE, is experiencing delays so severe that the system is having only a "marginal impact" on transmission. The system was telling

many residents to drive hundreds of miles to get a test, leaving those with symptoms to either not get a test or to get tested privately, further exacerbating the class divide caused by this pandemic.

The app that was released only a couple weeks ago has also had a variety of issues reported, from false alerts to a lack of information about local restrictions. It isn't supported on older iPhones, although this is more due to how Apple and Google designed the API that facilitates the contact tracking.

In the end, despite massive amounts of goodwill from the public and healthcare workers, the Government has wasted billions from the public purse on a dysfunctional test and trace system, and we are back at square one, staring down the barrel of a second wave.

## ROUND TWO

Three weeks ago, SAGE recommend-

ed that universities move to online teaching where possible. Yet the Government ignored this and universities, including Imperial, continued to tell students about "mixed learning". Students moved into halls believing that they would get some level of in-person teaching as well, and in the past couple weeks we have seen the largest outbreaks take place in student halls. Official case numbers have now overtaken those of the first wave, and statistics imply that these are being driven particularly by the 16-29 age group.

In response, the Government has instituted a localised three tier system of restrictions, with the Liverpool city region being placed under the highest tier of restrictions. Yet experts, both independent and on SAGE, say these measures do not go far enough. They, along with the Leader of the Opposition, have demanded a national "circuit

breaker" lockdown to stop the epidemic spiralling out of control.

A second lockdown was not inevitable. It could've been avoided with a functioning test and trace system. Yet the Government's failure to learn from the lessons of the first wave means that it is the only option left to us in order to save lives. Except this time, when we emerge from the other side of lockdown, we need to have test and trace.

# Elon Musk's Starlink "mega-constellation" and the impact of the commercial use of space

Photo credits: Starlink

Lily Shepherd Science Writer

Living in London, it is hard to imagine a world without internet connection. Most of us groan at the rare sight of our mobile data switching from 4G to 3G, and we even have Wi-Fi at our tube stations. But in 2018, the Global System for Mobile Communications reported that 10% of the world's population lived beyond the reach of a mobile network, and an additional 3% do not have access to adequate broadband speeds. That translates to around 1 billion people living without adequate internet coverage.

This is a problem in our increasingly online world, where more of us are working from home than ever and many children require internet access to complete their schoolwork. In 2017, the Imperial Business School published a study showing that a 10% increase in mobile broadband leads to an increase in GDP of 0.6-2.8%.

So a network of potentially 42,000 mini satellites providing high-speed internet to the entire planet sounds like a great idea, right? That is the end goal of Elon Musk's SpaceX Starlink

programme, which began in May 2019 with the launch of 60 small satellites from a single rocket. As of right now, there are almost 800 Starlink satellites orbiting the Earth.

There are several issues with this ambitious plan. For starters, the internet coverage will come at a cost to users. Depending on the cost, it is likely that this will limit the number of additional internet users that the programme can actually bring in, as areas without proper internet access are generally in less privileged communities.

On top of this, satellites do not last forever, and we are facing an increasing problem of "space junk" as more satellites become non-operational. Even if SpaceX's satellites last for centuries, their "mega-constellation" will still be leaving future generations with an additional 42,000 pieces of space junk to deal with.

Many astronomers have also ex-

pressed great concern about the impact that the programme will have on astronomy research. At the moment, if you spend a few hours looking at the night sky, you will see several satellites moving amongst the many stars. But the stars we can see with the naked eye currently significantly outnumber satellites, and astronomers researching our universe can correct for the marks left by a satellite or two in their images and data.

Removing thousands of satellites from a set of data is less easy, and a lot more time consuming. You only have to look at images that have been interrupted by the Starlink satellites already orbiting to understand the potential disruption that tens of thousands of satellites could cause to research.

Radioastronomers have also voiced concerns about Starlink satellites. The

Square Kilometre Array (SKA), an international telescope project which will become the world's largest radio observatory once complete, has highlighted the issue that these satellites will require the use of a wider range of frequencies. This will reduce the bandwidth available to radioastronomers studying the sky. The band that Starlink uses takes up frequencies of 10.7 to 12.7 gigahertz, within a range known as band 5b. This is one of the seven bands SKA's satellite dishes aim to target. This is based on SKA analysis which calculated the impact of 6400 satellites, so it is likely that the planned 42,000 Starlink satellites could have an even worse impact.

And it is not just researchers who will be impacted. Those of us who do not have access to a telescope might soon be looking up at a sky dominated by satellites rather than stars. The reflection of sunlight from the satellites will increase light pollution and reduce the number of stars visible to the naked eye. The night sky, a near constant throughout human history, might never be the same again.



## SCIENCE

# COVID-19 VACCINE TRACKER: Felix Edition

Julia Dabrowska Science Editor

In order to put an end to the global coronavirus pandemic, researchers around the world are working tirelessly to develop a vaccine to protect against COVID-19. While vaccine

production usually takes multiple years, a coronavirus vaccine is hoped to be developed within 12-18 months.

Vaccine testing can be split into 5 stages:

Pre-clinical – animal testing to see

whether the vaccine elicits an immune response.

Phase I – healthy human volunteers to determine safety and evaluate immune response.

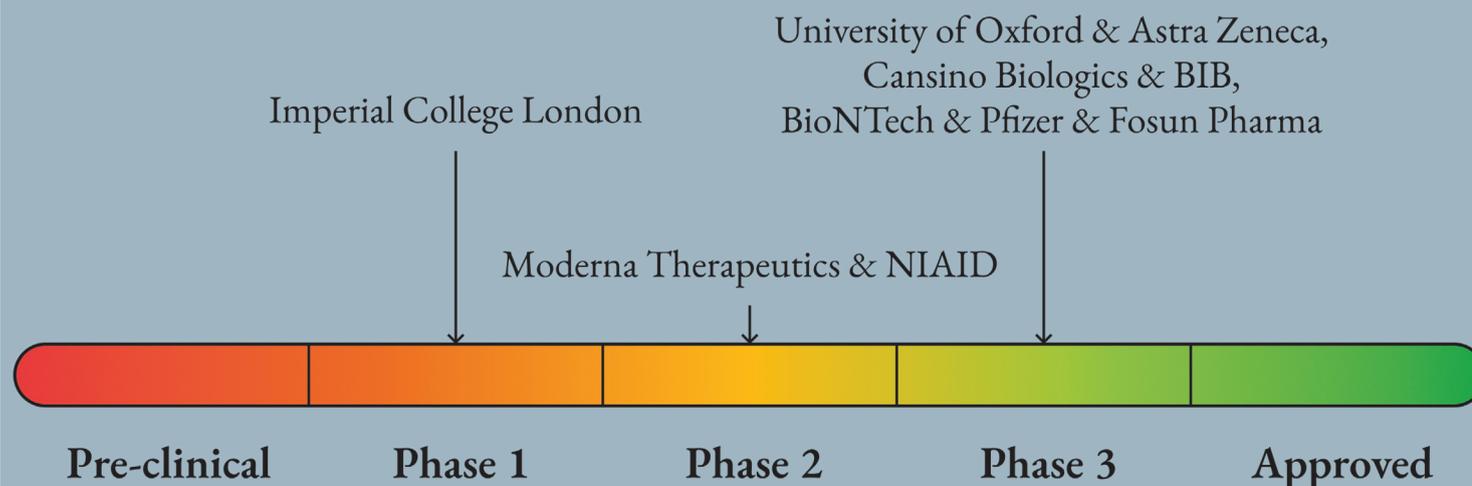
Phase II – hundreds of volunteers to identify correct dosage.

Phase III – thousands of volunteers to confirm safety and efficacy vs. a placebo.

Phase IV – studies on adverse effects, long-term immunity and vaccine usage following the approval and licensing of the vaccine.

The WHO is currently tracking the progress of over 170 candidate vaccines; at Felix, we've chosen 5 of the most promising candidates to follow, so watch this space!

New Update: Johnson & Johnson's clinical trials, including a Phase III US trial, have been paused this week due to an unexplained illness in a volunteer.



## 2400km range to be reached by future electric vehicles

Sudarshan Sreeram Tech Editor

Electric vehicles (EVs) are unarguably the future of transportation; well, at least for the next thirty years. Tesla has led the EV market, and its incredible success has drawn the attention of many companies looking to dip their feet into the pond of profit. Even non-automotive companies like Sony, Google, Apple, and even Epic Games have (in some way) experimented with consumer EVs. Amazon has recently partnered with Rivian, a promising startup in the EV realm, to produce more than 100,000 delivery trucks by 2030. With government incentives in place for those looking to purchase an EV, it's no wonder why there's been a recent boom in their popularity. With this popularity, however, comes demand, which calls for rapid advancement in technology - in this case, battery technology.

Earlier last month, Tesla held a shareholder event where they showcased a new advancement in battery design

that reduced production costs by more than 55%, thus making their cars more affordable. Another impressive feat is the development of Aluminium-Air (Al-air) batteries, which promise more than 2400Km in range; however, this technology is still being developed and researched by its inventor Trevor Jackson, a former

UK Royal Navy officer, and



his investors. Trevor argues that current lithium-based battery technology isn't sustainable since the production of emissions has shifted from vehicles to power stations. It's also worth noting that by 2030, most of the discharged Li-ion batteries would end up as waste, out

of which only around 5% are recycled. Aluminium, on the other hand, is the most abundant metal on our planet and can be heavily recycled.

Many studies have considered the limitations of current battery technology and experimented with alternate materials (such as the Al-air battery mentioned above). Results from these studies have showcased battery designs that increase efficiency with faster charge cycles, safety with stable components, and sustainability with durable and highly recyclable elements. It takes time for cutting-edge research work to translate down into the consumer space. As mentioned by Elon Musk, setting up a manufacturing facility is more challenging than designing the actual car; this analogy applies to battery technology as well. However, the future indeed looks promising, both for us and for our environment.

Test & trace data being sold by private firms: prepare yourself for spam calls & messages

## Test & trace data being sold by private firms: prepare yourself for spam calls & messages

Sudarshan Sreeram Tech Editor

The UK Government states that contact tracing information is used only for the NHS test and trace scheme and maintained for 21 days. Data-collection firms, on the other hand, have found their way into storing and selling user data for at least the next 25 years.

Public venues are required to collect attendees' contact tracing information to detect regional spikes of COVID transmission. The collection of data is done through means of QR codes and handled by companies on behalf of venues. These data collection companies have reportedly sold user information to advertisers and other third-party data banks. Many have urged the Government to step in and protect users' privacy, but in any case, be prepared for targeted advertisements and scam calls/messages.

# Why we shouldn't want things to return to normal

► *News writer Nicholas Manrique argues that despite the changes in our lives since the start of the pandemic, we should learn to deal with the new normal.*

**Nicholas Manrique**

News writer



If the current pandemic has been good for anything, it has been kindest to the act of reflection. So many people were trapped inside their homes, physically separated from key aspects of their lives and livelihoods. Being stuck inside forces one to look within as well as without – increasingly people appear to have become aware of the negative ways in which society has hitherto been organised, and much value has been placed on the opportunity for idealistic introspection. But on the minds of many, one practical question persisted throughout the lockdown: when will things return to normal? This call seems entirely reasonable. As pragmatists never tire of pointing out, the long-term effects of a so-called “90% economy” could be disastrous. What’s more, the rhetoric of both the powers that be and the average citizen often centres around this idea of normality, and in particular how to rediscover it. But I’m not so sure about the reasonableness of these calls, no matter how intuitive they appear – what I do think is that their frequency offers an opportunity to talk about why.

Perhaps the most striking thing about calls for normality is how normal they themselves have become. Before the coronavirus pandemic much of global politics was seen to be going through a strange period; from the victories of “outsider” populists like Donald Trump and Jair Bolsonaro to the increasingly volatile relationship between the East and West, there were no shortage of calls for a return to a normal world order. Before that even, who didn’t wish they were back before the Great Recession? And, wow, wasn’t life a lot more normal before 9/11 – when will I be able to board a plane normally again? It seems that there is nothing more normal than abnormality.

Of course, much of this can be understood under a rose-tinted lens. More often than not, people will look back and see greener grass, and there is nothing surprising about that. But what’s interesting is how this rhetoric so effectively reproduces ideology: indeed, it has a deeply political character. In the repeated framing of global issues as deviations from a normal social order, the latter is effectively petrified – it becomes entirely ahistorical. After all, if our only metric of success is rooted in similarity to the past, how can we ever hope to reach the future?

This analytical angle cuts deeper too. When Fukuyama proclaimed the end of history after the fall of the Soviet Union, he stressed that such an end could never apply to culture, but we appear to be trying to force one nonetheless. Consider the precipitous rise in film and television remakes in recent years – in 2018, 80% of top 20 grossing movies worldwide were based on unoriginal material. From fashion to advertising, we tend to place an ever-higher value on retro and vintage aesthetics. In effect, our culture is littered with simulacra of a dead past. We can therefore not only understand normality as naïve sentimentality, but also as a sharp ideological tool keeping us from looking too far forward. The rhetorical and aesthetic vocabulary of late capitalism haunts us with nostalgia for a past that never existed, and so keeps us suspended there. The normal is simply a ghost in the machine.

Given this predisposition to look backwards, it is perhaps no wonder that (in wealthy countries, at least) people are so pessimistic about the state of things. A 2017 Ipsos MORI study on the “Perils of Perception” found that, despite objective material improvements in global poverty and child mortality rates, a large majority of people think that these things are at an all-time high. A similar survey by YouGov found that only 4% of Britons think the world is getting

better. Such sentiment serves only to reinforce a regressive mindset. So, what is to be done? First, we need to recognise the autonomy that humanity has over its condition and celebrate the successes which it has brought about. Perhaps more importantly however, we must use this celebration to motivate greater faith in our ability to continue this historical

progression. We should reflect upon but not dwell within our past, indeed, within the old normal – we should seek to build a new one.

## Why MPs should get a payrise

**Calum Drysdale**

Editor-in-Chief



Who would be an MP? The answer that people often give to that question is the rich, the power hungry, and the narcissists. There is widespread acceptance in British society that politicians are incompetent bastards, a view not entirely disproven by their actions. However, we have only ourselves to blame for this when we pay them so little.

To run the country, a task as large and complicated as any around, we pay them the same as if they were mid-level managers at American Express (£82,000) or Head of Trading at John Lewis (£90,000). Yet at the same time we ask and expect them to be the best and brightest. Unfortunately, our best and brightest are at John Lewis where their talents are appreciated. This creates a disconnect between the value of the work expected and the remuneration for the work. This deficit can be addressed either by lowering the quality of the work done, leading the Guardian to compile a ranking of MPs by number of parliamen-

tary votes missed, making up the difference with inherited money or money earned in other jobs or finally, being so power hungry that you don’t care how much you are paid. Most MPs tend to employ all three in differing amounts.

The outrage at the MPs’ proposed pay rise is just the most obvious of the British obsession with keeping down our elected officials. When Trump got ill he was flown to a special medical centre and he received 24/7 medical care. The Americans understand that the death of a leader would be disastrous enough to do everything in their power to prevent it. In Britain, however, we still like to imagine that our leaders are just like us, keeping them working out of a small townhouse in London. Apparently, David Cameron would leave Cabinet meetings to go upstairs to make himself lunch because there are no staff at 10 Downing street beyond a cleaner. We imagine ourselves as a world power yet still treat the business of ruling as an amateurish game.

If we want a ruling class that can make us proud, we should treat them right. Pay them what they might get in the private sector and give them support in the form of staff and proper buildings and offices to work out of. Stop handicapping ourselves with pseudo-humility.

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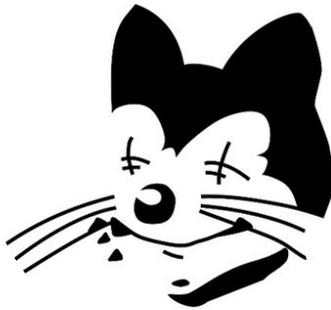
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The Felix Editor on

## Why do bad things happen to good people?

I was lucky (I will leave it to my readers to decide if they agree with the word choice) to be in the Felix Office over looking Beit Quad at 7am on Thursday morning when the Beit fire alarm went off, driving students into the cold in their pajamas dressing gowns and masks. What could have been a great opportunity to moan about the situation and how sleepy you were with friends was turned into a strangely silent affair. Beit students stood spread out in the quad like mutually repellent magnets or the whole school morning exercise classes you sometimes see in Chinese schools. I hope that they are alright. This will be a year that many will dine out on in the future. They were the ones that really experienced the very worst of protracted lockdown, ensconced for better or for worse, and strangely silent. That is what concerns me the most. As I watched them gather in the quad, they did not complain or chat or congregate or do anything. They stood stoically, resigned and silent. I hope that they are building



links. When I hear stories of gatherings in Hyde park, my heart soars. Bravo. I hope you all have some stories to tell when people ask you what it was like all those years in the future. As London descends once more into a period of rule tightening, studies and articles, some published in these very pages, suggest that things are only going to get worse, however I call on first years and other students to restrain themselves and consider the health of the wider population. A very dear friend of mine refused all throughout the summer to come out despite appeals from all his friends. His reasoning was simple “If a single person were to be hurt as a result of my actions I could never forgive myself” he would repeat over and over. I think this is a valuable lesson for all of us. I have seen people close to me have their ideas of what the future was going to look like cruelly and suddenly torn away from them and it is not a fate I would wish upon my worst enemy. As paternalistic rules return and grow stricter, let us all show personal responsibility, the most powerful response to fussing.

## Keep the Cat at all costs

The paper is in a difficult situation. For those that have been struggling to access Felix like they would have I can only apologise. We have tried to get a website off the ground and ready but there are still teething problems. Unfortunately, ironically if many people do get to read this, it will be on the ready and completed website, rendering the article void of meaning. However, I believe that it is important that we, as a newspaper with aspirations to represent the stu-

dent voice, and I, as the newspaper’s representative, speak honestly to you. We are finding this year difficult. With our writers and editors mainly working from home, we are in some ways a shadow of our former self. However, simultaneously, we have produced in the last two weeks what I would say are some of the best papers I have ever seen put out by Felix. Thank you writers and editors of Felix. We shall persevere.

## Statement of Intent

We here at Felix believe that it is always in the interests of the students to know. That cover-ups and paternalistic obfuscation are never right and that as intelligent people, students should be treated with respect and given the ability to make up their own minds. Therefore, I, the Felix Editor, on behalf of the team promise that:

**We will to the best of our ability tell you the whole truth and nothing but the truth.**

**We will keep your confidence and will only publish something you say to us if you have explicitly said that we can.**

**We will work to expose unfairness and discrimination in all forms that it takes both at the College and elsewhere.**

**We will treat fairly any article sent to us, regardless of point of view and do our best to work with you to prepare it for publication in our pages.**

**Signed by Calum Drysdale  
Editor-in Chief**

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# Flipbooks fix persistent Panopto problems

Tarlie Hitmuss NegaFelix Reporter

The College has responded to criticism of its policy of expecting all students studying from home to have WiFi by sending out flipbooks and sheet music which together can be used by offline students to reconstruct the lecture experience. The flipbooks, which are available in half, double, and 1.25 times speed, were put together by members of the Live Music society and the Art society the new teaching delivery method has been a hit among the small but hugely marginalised Imperial Portsmouth Brethren and Amish communities, both of whom refuse to use technology in any way.

Representative of the anti-technology student communities, Ann Faylward, a fourth year JMC student that draws all her code up on a blackboard in chalk, told NegaFelix that this was a really big day for representation at Imperial. "Finally, people like me will no longer need to rely on stealing notes from our peers and can instead get down to some proper study."

When NegaFelix spoke to members of the Art and Live Music societies that were involved in the project they were matter-of-fact about the process. "The sheet music is really not much to get excited about. Most lecturers speak in monotone with the really engaging ones usually having a vocal range of about three notes which makes it easy for us to pen in. Other than the occasional voice break up several octaves, once you get into the groove of a lectures voice you can transcribe them fairly easily." The members of the Art society were similarly pragmatic. "The low quality of many lecturers' cameras and internet connections means that videos are so low quality that we can use the same flipbook for every lecturer and simply sub in the appropriate diagrams."

When we spoke to the Vice Provost (Arts and

Crafts) Schmitt Stick about the project, he was keen to stress that this was only the early stages of very promising new revenue stream. He explained that "This is a matter of critical representation. In order to avoid some students being disadvantaged by their views we are going to be abolishing all computer usage. We apologise for the discriminative way that we have employed computers in research and learning over the last decade. The College is dedicated to

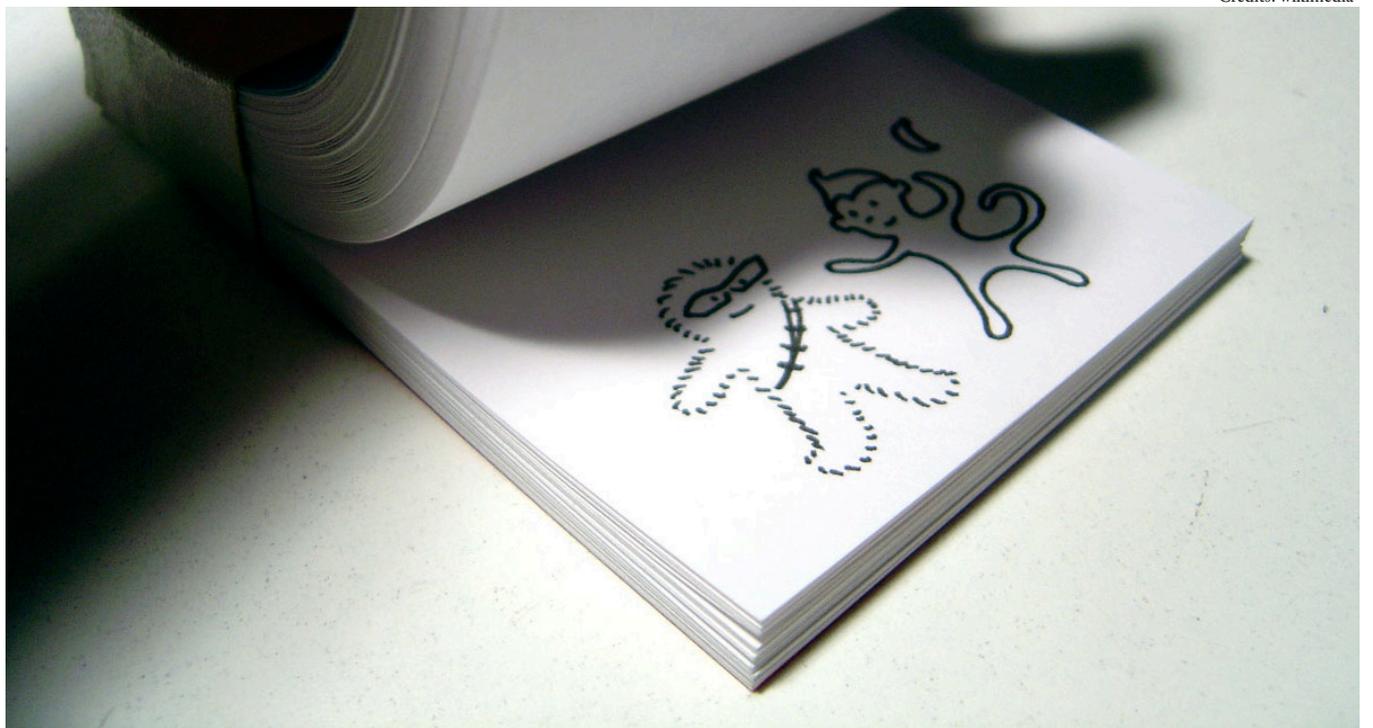
“

**VIDEOS ARE SO LOW QUALITY THAT WE CAN USE THE SAME FLIPBOOK FOR EVERY LECTURER**

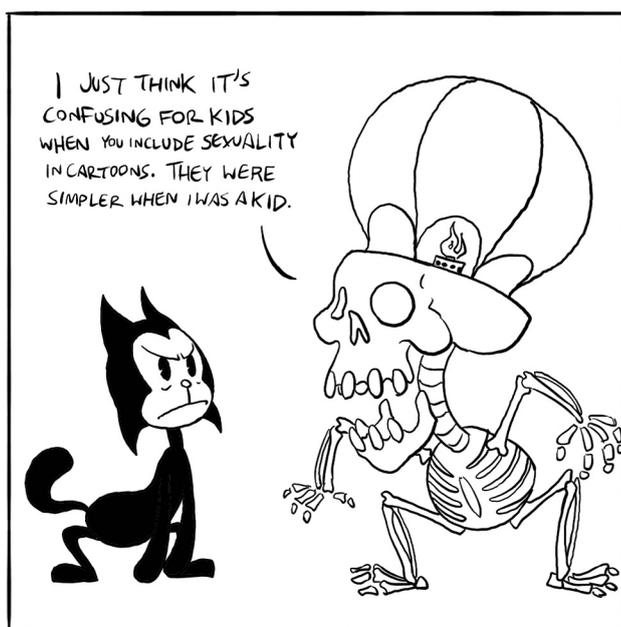
learning how to be a better institution every day and fighting discrimination in every form that it takes."

NegaFelix reached out to the Amish Society at Imperial for comment, but at the time of publishing we have received no response to our email.

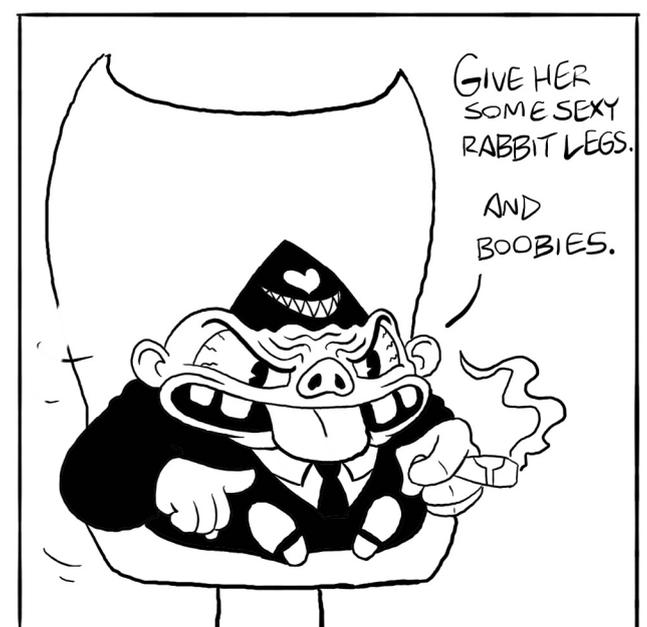
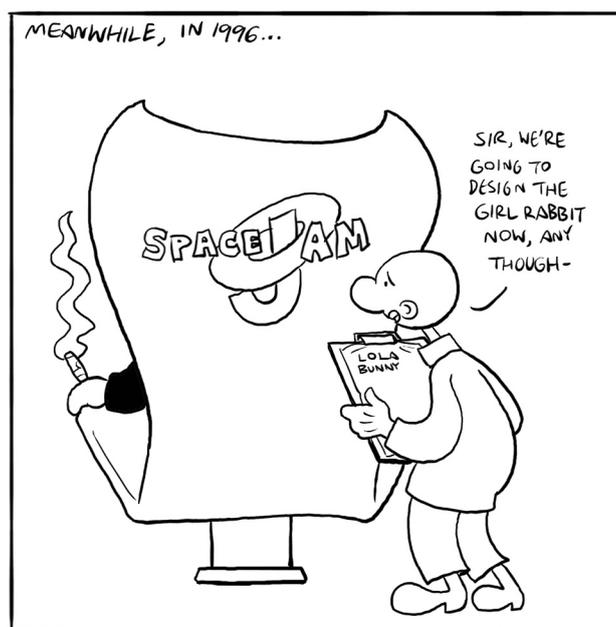
Credits: wikimedia



Plans for a live comment system are still in the works



LOLA



-NIC G-T

# Sharing the Knowledge

Tarlie Hitmuss NegaFelix Reporter

In response to budget shortages the college has decided to replace all academic teaching staff with black-cab drivers. This decision came after anonymous College sources called academics “jumped up, spoiled wastes of space”. According to Christian Peeler, Vice Provost (Education), it was realised that as black-cab drivers are experts in all topic of conversation they were better value as generalists than the incredibly limited range of most academics. Some problems with the confidence of the new hires were encountered when they tried speaking in front of large crowds. However, this was addressed by College building replica black-cab driver’s seats facing away from the video cameras from which the new lecturers would be able to deliver over-the-shoulder teaching to their students. When NegaFelix contacted the College to enquire as to where the new lecturers were found it was explained

that the terminal decline of the London tourist sector had forced many black cab drivers to retrain, leading to a temporary glut in the employment market allowing the College to snap up teaching staff at record low prices. Feb Senton, second year biology, described the difference in the teaching styles between the former and current teaching staff.

“Last year, the professors were so stuffy. They had a huge list of things that we just HAD to learn and things that we had to think. They were against the idea of us coming up with our own answers to the big questions like ‘what is quantum physics?’. There has also been a relaxation of the citation policy. Suddenly ‘I think someone told me something similar once a long time ago and I don’t know if I properly remember what they said’ is a valid source.”

Unfortunately, the new lecturers are already coming under pressure from a recently developed app. Uber Lecturers (UL) developed by Imperial computer sci-

ence students promises to deliver lecturers cheaper and faster, all of whom will agree with everything you say on the condition that you give them a 5 star rating.

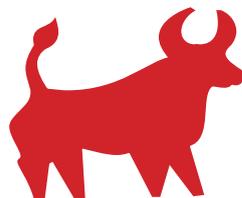


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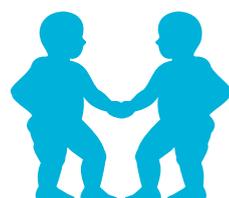
**ARIES**

This week your coke addiction will bring a new meaning to Zoom meetings.



**TAURUS**

This week your grandma will be no match for a small gust of wind.



**GEMINI**

This week you discover the third Corbyn brother in the West Basement.

Now you know who’s been nibbling on all the broadband wires.



**CANCER**

This week you bump into Rishi Sunak crying into a Waitrose meal deal on the Metropolitan line.



**LEO**

This week the UK’s gross national product is what your flatmate left in the fridge for 7 months.



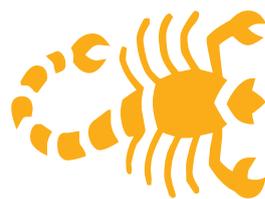
**VIRGO**

This week according to the Farrow and Ball colour chart the phlegm you coughed up was “Spring Breeze.”



**LIBRA**

The week cut out the middle man on job search rejections and just get your dick out on Omegle.



**SCORPIO**

This week they come for the Socialists.

It’s probably fine.



**SAGITTARIUS**

This week trade talks with the Rat King fall through.

That man does drive a hard bargain.



**CAPRICORN**

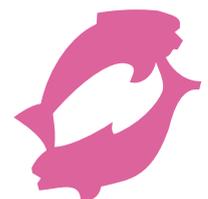
This week Student Finance sends you a chest of haunted Aztec gold in lieu of your maintenance loan.

Can’t wait to pay this back.



**AQUARIUS**

This week CoughSoc’s annual “Cough In My Mouth” social has been cancelled due to unforeseen circumstances.



**PISCES**

This week the prospect of a second lockdown looms like a heavy grey cloud over your cousin’s seventh birthday party.

Looks like you’ll get to keep that Nerf gun after all.

## ARTS

# ETERNITY IN THE AIR

News writer Nicolas Manrique chronicles his witness to the 640-year rendition of John Cage's 'As Slow As Possible' being attempted at the St. Burchardi Church, Halberstadt, Germany, where the first organ-chord change in over seven years took place recently in early September.

It is early in the morning on September 5th, and I am on a slow regional train from Berlin. The destination is Halberstadt, a small town in Saxony-Anhalt. Its chocolate-box streets and imposing cathedral are perhaps reason enough to visit, but today a different attraction demands the pilgrimage. Just north of the town centre, nestled inside a medieval cloister, stands the unassuming Sankt-Burchardi church, and inside its nave you will find the longest, slowest musical performance ever attempted. It began in September 2001 and doesn't intend to stop until the year 2640 – unless, of course, the sheet music calls for a rest. The piece being played is John Cage's aptly named *As Slow As Possible*, usually known by the baffling acronym ASLSP, and this

afternoon (3 o'clock, to be precise) is the first time in seven years that a note is changing.

Whenever you make a journey like this, it is always fun to see if you can tell which of your fellow passengers are making the same one. Who goes out of their way to see – hear? – this happen in person? Dr Rainer O. Neugebauer, the performance's director, reckons that as many as 1000 people may descend on the town for the note change, or *Klangwechsel*. Why so many? "On the one hand, ours is a very simple project: just time, and air. When you're inside the church, you hear no melody, no rhythm... just this unchanging sound. But on the other hand, it is a very philosophical project. People think about time, and their lifetimes". He himself has been confronted with such thoughts.

Credits: Illustration by Nicolas Geiseler-Toran

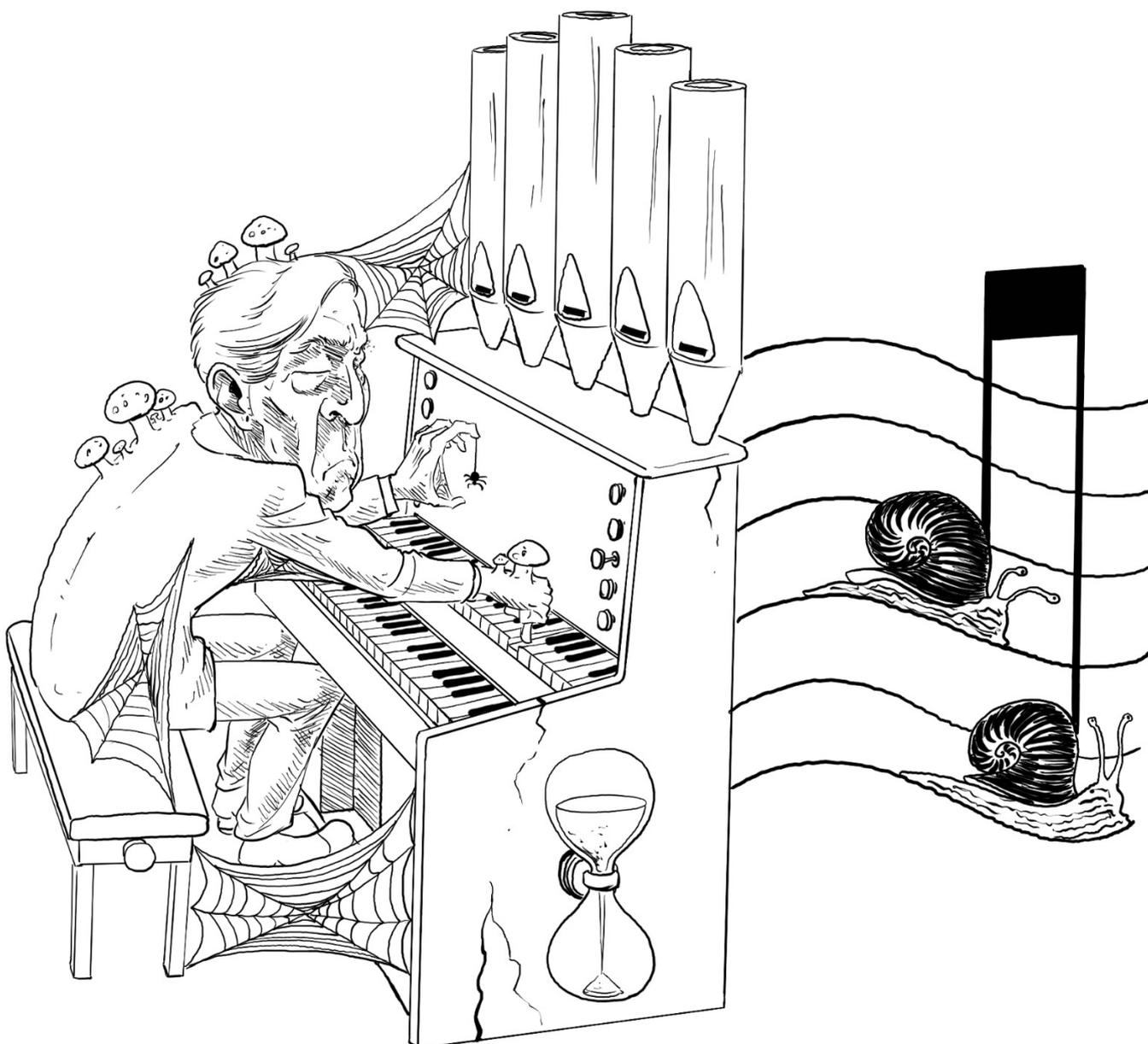
In 2011 a single pipe began sounding, playing a low D, which will not stop until 2071 – in his own words, "I won't ever hear the end of this note!" Moreover, Dr Neugebauer thinks that in a certain sense people are able to find more in this music than in any other: "For Cage, all sounds were equal. The notes don't know about Mozart, or Beethoven, they are just sounds; they have no meaning – so people can give them whatever meaning they want." Perhaps I'm doing this point of view a disservice by sharing my interpretation here – I'll leave that up to you.

Arriving early at Sankt-Burchardi, the first thing to notice is the emptiness. In place of pews and an altar, one finds bare ground, and specks of dust. And in the still air, a sound: following it, one finds the only permanent residents. On one side of the hall six great bellows work constantly to feed the organ's pipes; and on the other sits the organ itself. It is a small instrument, with far too few pipes filling its wooden frame. At its front are the sandbags responsible for playing the keys – the project was unable to find a human organist with the required stamina.

Gradually, the nave fills with both people and anticipation for the note change. In truth it is more of a note addition: the existing chord is being augmented by an E and a G#. The event proceeds almost ritualistically, with Dr Neugebauer addressing the crowd from a lectern and the organ being handled only with white gloves. Finally, soprano Johanna Vargas and composer Julian Lembke each install their respective pipe and the change is complete. The air within the church changes for the first time in almost a decade, and then it is over. The crowd applauds as the performers bow. And the music continues.

Being inside the church for the event itself, it is easy to see what Dr Neugebauer means. Surrounded by the endless sound, you are forced to think about what, if anything, it might be trying to say. In a town whose own cathedral took hundreds of years to complete, one is reminded of how its ancient builders must have felt, dedicating their hours to the completion of a façade they would never live to see. In modern times such time scales are unthinkable. Life appears to be accelerating at an ever-accelerating rate, yet here we find its very antithesis. The almost anticlimactic catharsis of the change itself is a reminder of just how alien this feels, like looking at the Mona Lisa one square millimetre at a time.

Will we as a people ever hear the end? 639 years is an especially long time in this age of climate change



and mutually assured destruction. “My wife, she is a big pessimist!” laughs Dr Neugebauer. “I am a historian, and history shows us that often our plans don’t work out [...] Cage was interested in processes where you don’t know how it ends.” Still, he remains optimistic – possibly out of necessity. “I hope that enough young people, enough enthusiastic people are able to continue our project.” Practical concerns such as these are ever-present in the mind of the organisers: all the €1,000,000 needed so far to keep the project running has come from private donors. If such funding dries up, then the music could end abruptly, even without some apocalyptic event.

No doubt many readers will be lamenting such a waste of money. But for Dr Neugebauer, support for projects like this is crucial. “Good, authentic avant-garde art is very important, to offer a picture of the future. We cannot draw what the future looks like, but through the avant-garde we can get glimpses.” In this sense, the performance becomes far more than mere spectacle: it takes on a political character. Through its very contrast to our world and the music of our time, ASLSP holds the seed for something

beyond them.

Maybe these ideas seem abstract and nebulous, but if you don’t buy into them, I reckon there is still something here for you. There is something delightful about the inherent optimism in the attempt; an almost childish purity akin to asking what the biggest number is. Even if you see it all as a ridiculous joke, what could be more uplifting than thousands of people coming together to see it through to its punchline? If that thought does not make you smile, then I am not sure what to tell you. But above all, don’t dismiss this as something pointless without giving it a chance. As Dr Neugebauer puts it, “... maybe you find it [the attempt] crazy or bullshit, but at least open your mind before you decide too fast. Listen.” The next

note change is in February 2022, so that gives plenty of time to mull.

Is it music? As Cage himself once replied to a poser of that very question, “Madame, if you don’t think it’s music, then call it anything else.” To spend time worrying over the project’s semantic designation is to miss the point. The Halberstadt performance of ASLSP

stands as a testament to that most human of motivations – why not? In this work we find the living and breathing contradiction to our existence. Where we rush, it meanders; where our symbols are saturated with meaning, it offers a blank canvas; where we try to understand, it remains incomprehensible – indeed where we die, it lives on.

Credits: Nicolas Manrique



For Whom the Bells Toll

## Exhibition

# A not-so Brief history of electronic music

Electronic @  
The Design Museum



Until 14<sup>th</sup> Feb 2021

£16.3 (£12.15 Students)

Reviewed by [Amanda Hertzberg](#) Arts Editor

Electronic aims to be a comprehensive history of dance music, from the creation of the first synthesizers, to acid houses, Boiler rooms, post-wall Berlin techno and everything in between.

From LED light spectacles to neon-coloured membership cards and holographic vinyl collections, you will find a lot of fun stuff to see. The background music which accompanies the whole experience has some museum goers thumping around while others seem completely impartial and apathetic to it.

The exhibition is extensive, and you can easily spend hours in there trying to gather all the information. I phrase it like that because there is definitely not a shortage of information at this exhibition. Text box after text box, band name after band name, I started feeling like a saturated sponge, not able to soak up more information about music collectives or synthesizers created by college kids. There are a lot of references to eras and artists, and it gets a bit dry after some time if you don’t have previous knowledge about them. Furthermore, the relevance of certain items can remain a bit unclear, like why certain costumes and collectives are on display rather than others.

Another issue with the exhibition; we are in London - a major city in terms of influence for electronic music. However, this aspect is explored very little. Berghain is mentioned and presented at least 3-4 times (including a miniature architectural prototype of it??), but come on, no London venues?

## IN OTHER NEWS

### Lunch time concert resumes

**Blyth Centre resumes its live weekly lunch time concert series for a socially distanced audience at the Great Hall starting first week of October.**

### Cultural recovery fund allocation details announced

**Government earlier this week, revealed details of the £1.57B cultural recovery fund allocation for venues that applied for under £1M through the scheme, totaling to over £257M spread across more than 1300 venues.**

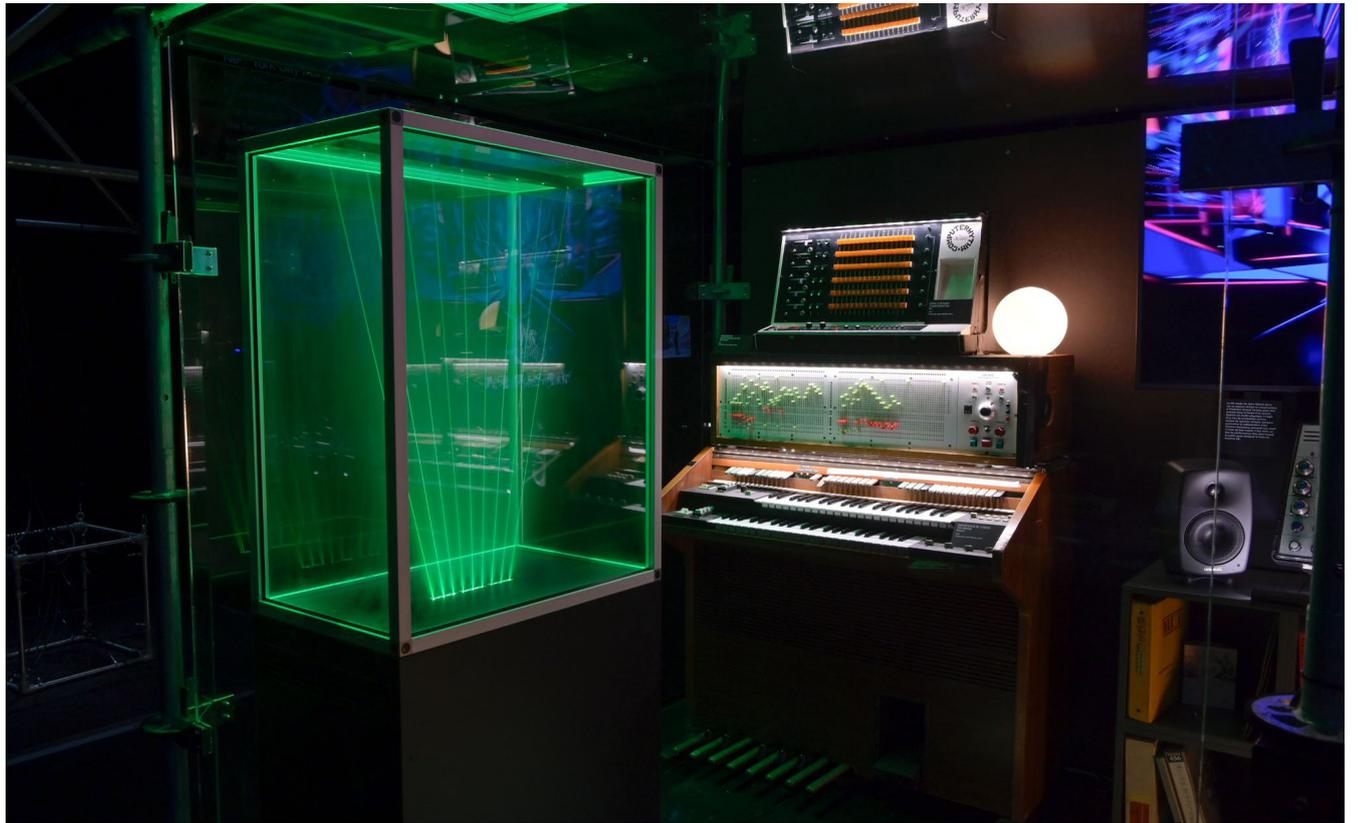
## ARTS

Credits: Imgur/Gil Lefauconnier

And what about grime, drum & bass and garage, three huge electronic genres endemic to London?

Visitors are required to bring their own headphones to the exhibition, there is a lot of information that goes missed without them. They need to be wired as well, so no airpods unfortunately. Because of COVID-19 the museum is not able to lend out headphones, which might make some parts of the exhibition inaccessible to some.

I would've also liked to see more of an attempt at involving the viewers in the exhibition. At times it felt like reading a Wikipedia page about electronic music, but in physical form. However, there are a few interactive pieces, and they are excellent. They are clearly what the exhibition has been built up around, and are kind of the few strong pillars holding up a rather weak roof. The audience that would enjoy this exhibition most, is the gen X, that grew up on the birth of electronic music, partying in the 80s and 90s era of Eurodance music, who want to reminisce the good old times.



Jean Michel Jarr's virtual studio

## Exhibition

# Nauman evokes raw discomfort

**Bruce Nauman @  
Tate Modern**

★★★★★

*Until 21<sup>st</sup> Feb 2021*

£25 (£22 Students)

Reviewed by **Amanda Hertzberg** Arts Editor

There are few things as eerie as a sinister spin on child's play. Children, perceived to be the epitome of innocence by society, still untouched by the lures of lust and greed, should only be seen as pure. Horror films such as the Exorcist, Annabelle, Sinister and Hereditary (to name a few - the list really goes on forever) play on this eerie concept of the darker side of childhood.

Not knowing what to expect when I stepped into Bruce Nauman's exhibition at Tate Modern, I am struck by a sinister feeling. Nauman, an American born in Indiana in the 40s, explores the human body, play, discomfort, life and death in different colours. Walking from room to room in the exhibition, feelings of unease are not uncommon. The use of sound often penetrates from one room to the next, so you've already got an idea of what's waiting for you in the next room based on the wailing, crying sounds or the grainy, loud background noise creeping up on you. Much like Andy Warhol, the guy he shares the 4th floor of Tate with, Nauman saw his studio as a place where art wasn't static or

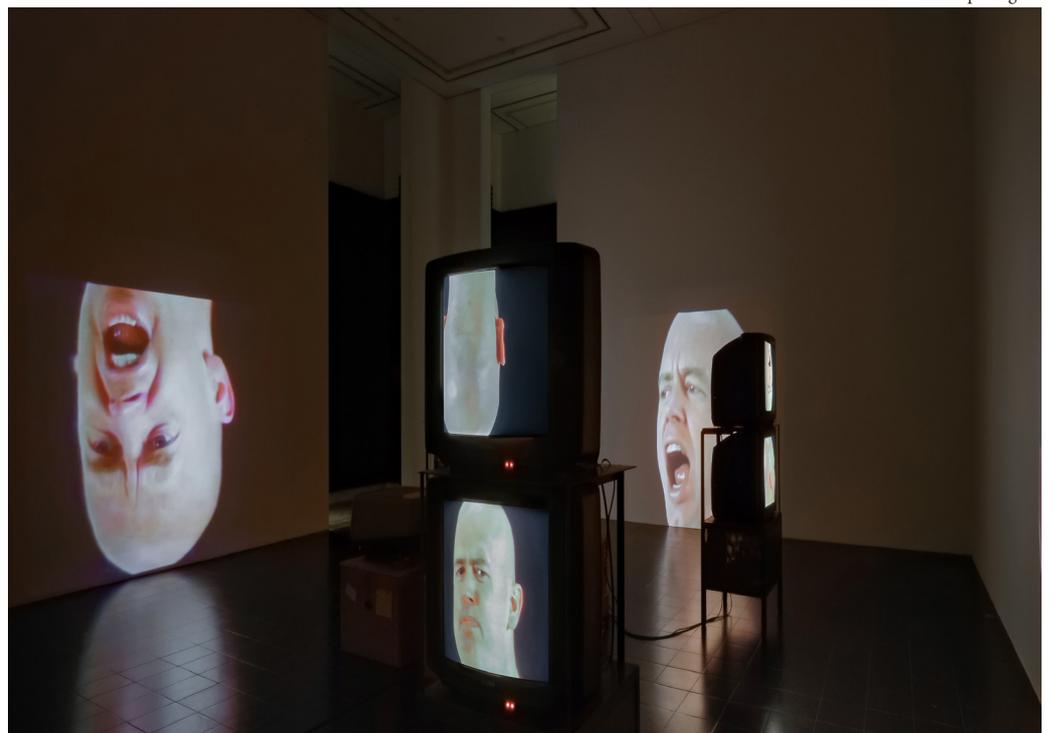
even a product of working. He rather saw it as a constant dynamic creation, one that he as an artist was constantly involved with.

Much of his art is in video format, but he was also very talented at sculpting steel, fiberglass and neon. He explores children's play in much of his art, making references to musical chairs, playing with a pack of cards and falling over like a cartoon character slipping on a banana in a slow-motion video. His own description of his work 'Hanged man' is a perfect example of his harrowing take on child's play: "With my version... you're not allowed to participate - the parts of the figure are put into place without you" (obviously referencing the game Hangman). I look around the exhibition - there are children running around, ahead of their parents, perplexed by the different works.

Other works are a direct commentary on society, and cover topics such as imprisonment, surveillance

and death. They engage the visitor in more than just a visual sense. The exhibition shows off Nauman's talent excellently, and the use of space is well thought out. For the first time in a while I walked out through the last door of the exhibition, disappointed not to be met with yet another room, but instead the museum café.

Credits: Christoph Irrgan



Anthro / Socio (Rinde Spinning)

## Felix Recommends



### Drop 6

**EP by:** *Little Simz*

**For fans of:** Floetry, Lauryn Hill

**Top Tracks:** might bang, might not, where's my lighter

**Run Time:** 12 minutes 50 seconds

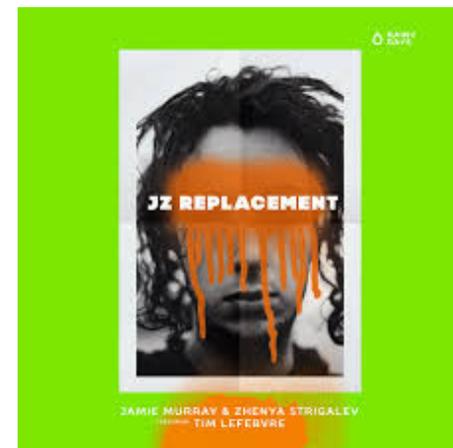
Reviewed by **Miles Gulliford** Music Editor

Little Simz, real name Simbiatu Ajikawo may be one of few rappers who enjoyed the step out of the limelight lockdown earlier this year offered: "I just cook my meals and make my tunes/I've always appreciated solitude" she states on 'you should call mum', while her focus on wealth and success places her shoulder to shoulder with her peers, her serrated individualism ebbs through each track making for a refreshing listen.

I hadn't taken particular note of Simz's previous efforts, but on her most recent EP *Drop 6*, something clicked. The EP's title marks it as another instalment of her Drops series, the last of which debuted 5 years ago. While her effortless yet rhythmically engaging flows, unapologetic honesty and taste for minimal beats are on display here as well as any of her other recent releases, this record's sparse runtime, clocking in at just over 10 minutes, and lower profile fit Simz's style to a tee, and offer her room her room for greater expression.

The listener is given perhaps a perfect introduction to the London rapper, "If you give you my time, give you my space/Know that that shit's not to waste" she snarls on the opening lines of 'might bang, might not'. Here a light, propulsive, jungle-tinged drumline straight and simple bassline give the track a distinctly British sound as the Mercury prize nominee gives the listener a whirlwind tour of her life – from her work ethic, marijuana use and newfound success to her love life and general ambivalence to how others may see her.

Much of the rest of the record follows in a similar vein, with a number of more introspective tracks like 'where's my lighter' closing out the track list, placing Simz's unique energy in a different emotional context, where she still seems to thrive with ease. This imbues *Drop 6* with a natural flow that takes the listener on a journey and keeps them coming back.



### Disrespectful

**Album by:** *JZ Replacement*

**For fans of:** ??????

**Top Tracks:** Displacement A, Take The JZ Train

**Run Time:** 35 minutes 41 seconds

Reviewed by **Miles Gulliford** Music Editor

The drum and saxophone duo Jamie Murray and Zhenya Strigalev strive to bridge the musical ocean between UK drum'n'bass and jazz on their debut record. Tracks open with tightly arranged interplay between drums and sax before giving way to more sporadic breakneck grooves overlaid with angular sax lines and catchy synth and electric basslines courtesy of Tim Lefebvre.



### Liquid Portraits

**EP by:** *Clap! Clap!*

**For fans of:** Zomby, Mount Kimbie

**Top Tracks:** Hokkaido's Farewell Portrait

**Run Time:** 40 minutes 54 seconds

Reviewed by **Guthrie Ruby** Music Editor

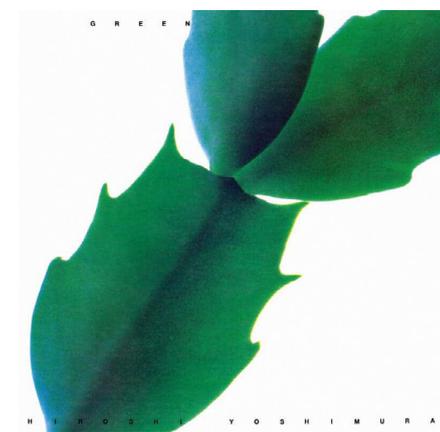
Cristiano Crisci, aka Clap! Clap! demonstrates a dexterous hand at production, boundless imagination and a genuine love for his craft on *Liquid Portraits*. Bustling bodies of crisp percussion, showcasing strong influences from traditional West African drumming styles make up the heart of the Italian's kaleidoscopic compositions, accented by crystalline synths, and on more propulsive tracks like the labyrinthine 'Liquid

Mantra' driving bass and snare patterns which create an effect vaguely reminiscent of Chicago footwork.

The record's pacing will make or break it for the likely disoriented listener – the jazz musician and DJ has no qualms dropping the listener from a breezy piece of minimalist percussion into the depths of a dancefloor groove from track to track, or indeed in the same track (c.f. 'Southern Dub'). 'Hokkaido's Farewell Portrait' is an undisputed highlight, where polyrhythmic tuned percussion and bells are ruptured by an earth shattering 808 groove, a few samples of flutes and chanting hidden subtly in the mix and the track is a musical experience unlike any other. Elsewhere, including on the record's opener and closer Crisci opts for more relaxed, minimalism interplay of crisp synth lines which make for pleasant if less compelling aural thoroughfare.

Like Guedra Guedra's *Son of Sun* EP, which I reviewed last summer – I encourage anyone intrigued by the fluid, abstract "portrait" on *Liquid Portrait's* cover to give this record a listen – the record's contents might just expand your definition of music. At the very least, Clap! Clap!'s intricate rhythms will

I know what you're thinking, "Guthrie wtf! These recommendations are supposed to be from 2020 and we all know this album came out in 1986", but actually it was re-released this summer; technically I'm safe. In the 1980's Japanese artists were pioneering their own style of ambient music. GREEN is one of the all-time masterpieces of Japanese ambient/environmental mu-



### Green

**Album by:** *Hiroshi Yoshimura*

**For fans of:** Brian Eno, Penguin Cafe Orchestra

**Run Time:** 42 minutes 57 seconds

Using a small range of synths, Yoshimura delicately places notes into space. Inspired by sounds of nature, the music is designed to have the same calming effect as white noise but is loaded with artistic expression and is filled with heart-wrenchingly ingenious moments.





## MUSIC

## Feature

# Dreams of Afrofuturism

Martin Flerin Music Editor

I feel I should begin this article with a disclaimer. I do not wish to share what you are about to read from anything resembling a place of authority. As a white guy coming from a tiny European country with very little ethnic diversity, my education on race relations, racism, and what it means to come from a place of privilege will be lifelong.

What I want to do, is share with you the experience I have had puzzling together some of the pieces, mostly musical, some literary, some historical, that I have come to understand as indispensable building blocks of one of the most intriguing and life-affirming philosophical movements I have ever come across. I want to show you how learning about Afrofuturism helped me make sense not only of the music that I love, but also some of the social dynamics that I will never be able to understand first-hand.

My first glimpse of ideas related to Afrofuturism, although not explicitly, came in the shape of a book, Marlon James' brilliant *A Brief History of Seven Killings*. It is a tale of the bloody backdrop of Kingston, Jamaica from which sprang forth the worldwide icon Bob Marley, only referred to in the story as 'The Singer'. What I remember wondering at were the regular references to a 'return to Africa', a 'return home'. Back then this especially seemed foreign to me – I did not understand the brutal reality of the displacement of millions of Africans during colonial times, and the effect this had on the subsequent generations.

This sort of pan-African thinking, as I would later learn, is a very important aspect of the Rastafarian ideology, which considers repatriation to Africa an ideal. But it turns out that the reestablishment of a spiritual connection with

Africa, most crucially its pre-colonial cultural heritage, is a common theme in Afrofuturism as well. A very vivid illustration of this notion is recognisable in the most prominent example of Afrofuturism today, perhaps ever – the superhero film *Black Panther*. Its protagonist, first appearing in comic books towards the tail end of the civil rights movement, embodies the pillars of Afrofuturism: pride, justice, progress, and a unique and all-encompassing African spirit.

A more ubiquitous clue for finding such connections to the past in art can be found everywhere we look. If there was one thing that I learned from my saxophone teacher, it was the importance of black people, especially black Americans, for modern music. Many of the complexities, both rhythmic and melodic, of Jazz and Blues were completely revolutionary and foreign to the European musical tradition. Trickling down through the centuries of slavery and oppression, it is a wonder they even survived, yet they set the course for how music would develop in the 20th century.

In my opinion, the best words for this need to reconnect with a collective future stolen from Africans centuries ago, come from the man who coined

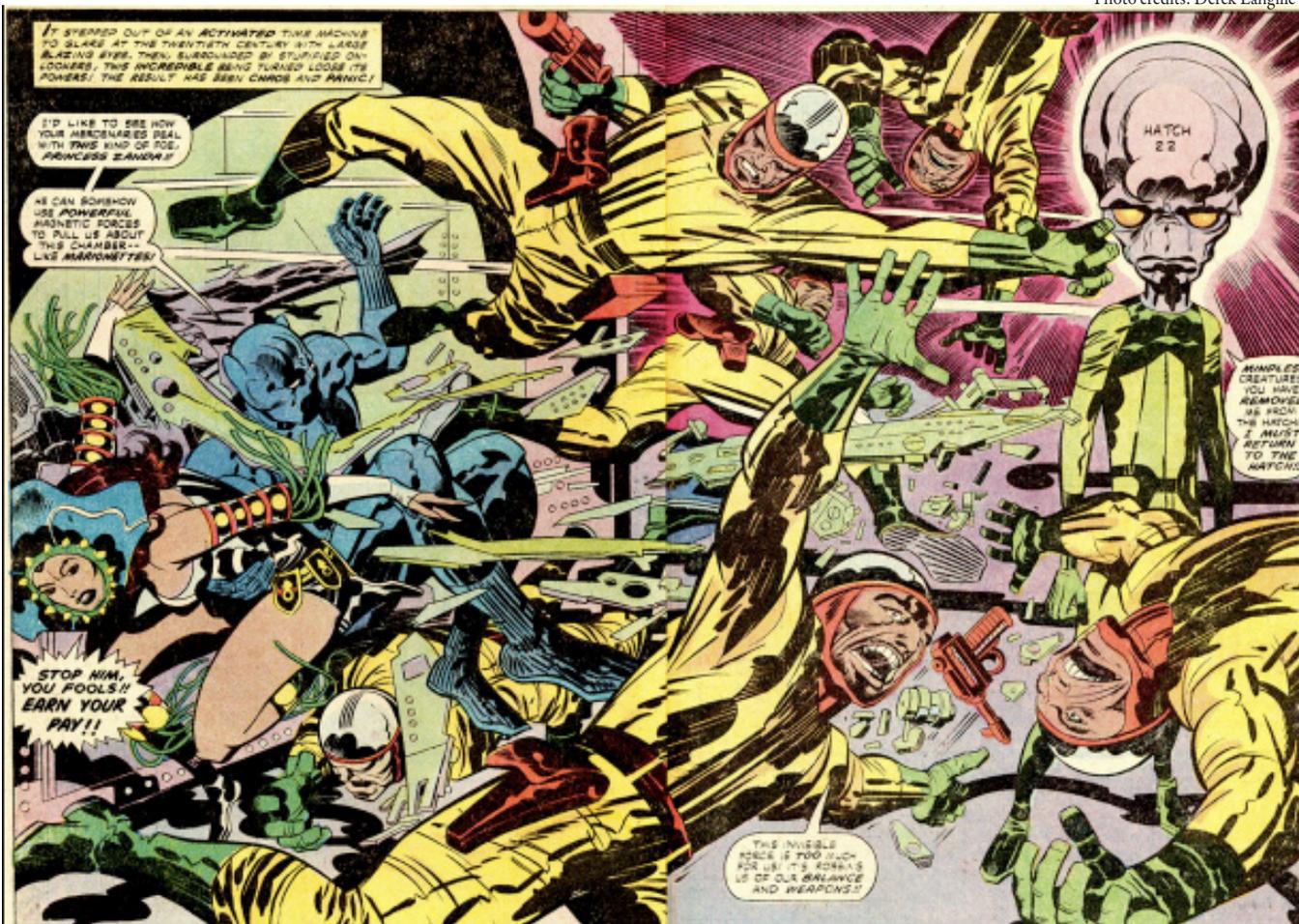
the term himself, Mark Dery. He asks how “a community whose past has been deliberately rubbed out ... [can] imagine possible futures?”. This closes the circle of time,

illustrating the inherently positivistic nature of Afrofuturistic thought. It does not concern itself with only the past or the future in isolation, but aims to encompass elements of them both, along with the sometimes-harsh realities of the present, to imagine a better world for black communities.

Emma Dabiri, the Nigerian-Irish author, emphasizes the same ideals of Afrofuturism. She relates them to the Oriki form of poetry, a form of expres-

Photo credits: Derek Langille

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sion for Yoruba speakers in Western Africa. In her BBC radio 4 episode, titled *Journeys in Afrofuturism*, she claims that “much of [Oriki’s] power lies in its ability to collapse concrete distinctions between past, present, and future”. It is a beautiful analogy, and one which explains why Afrofuturist art is so eclectic. If we take Jazz and Blues to be the gift of African tradition passed down through centuries of oppression, this particular musical circle of time is closed by Jimmy Hendrix plugging in his electric guitar and producing the kinds of space-age psychedelic explorations that no guitar player had managed before.

It was an obsession with

progress, machines, and a striving for power which fuelled the Italian futurists. In the case of Afrofuturism, it was a striving for equality, for due recognition, and for the ability to imagine a black future. This aspect - the power of imagination, is one that is emphasized by most experts on the topic. Initially, it came from a concrete lack of black superheroes in sci-fi. No one could deny the fact that the visions of gleaming skyscrapers and flying cars, fantasies inherited from early 20th century futurists and only emboldened by the rise of Hollywood, were

being constructed by white people, for white people. Dery's essay *Black To the Future*, first published in the early 90s, lists many concrete pieces of evidence of this absence, and points out the consequences of this dearth. In the episode 623 of the podcast and radio program *This American Life*, hosts Neil Drumming and Ira Glass describe the conundrum quite well.

IG: "And for so long, in so many imaginings of the future, in so much science fiction, there were no black people at all—which [...] makes no sense."

ND: "[Afrofuturism] imagines that [...] black people have forms of survival through, you know, the slave trade, through persecution, that that's almost a technology in itself, the ways in which we've come through those things."

Before transitioning to the music of it all, I feel it necessary to set the scene, to put a firm pin in the present which ties it all together. That scene is Detroit, Michigan, the birthplace of so many genres of music it is getting hard to count. It is also currently a prime example of a city being left behind in post-industrial America. At times, it can seem post-apocalyptic. This was the soil on which

many of the different iterations of musical Afrofuturism have thrived over the years. For a perfect encapsulation of all these eras, past and present, have

Photo credits: Tresor Records



a look at Square Pusher's recent music video for Detroit People Mover. The eerie emptiness of the early-Covid era it was shot in will surely help in achieving the right mood for reading on.

A couple of years ago, a friend came upon the

strangely titled artist The Other People Place, whose only LP, *Lifestyles of the Laptop Café*, had a uniquely minimalist groove, all the while maintaining a sharp percussive edge. It could have come from no other place than D-town itself. It turned out that this album was the product of James Stinson, who, up to his untimely death in 2002 following heart complications, had formed one half of the late-90s electro duo Drexciya. Their music was not only incredibly fascinating because of how the futuristic bleeps and bangs sounded both palatable and unique (the way the 808's hungry snare bites through the melancholic Drexciyan pads is unmistakable), but also because of the song titles, which suggested a lore bigger than the songs themselves.

Andreae Sand Dunes, *Bubble Metropolis* and *Under Sea Disturbances* are all big Drexciyan hitters and all have peculiar names related to oceans. Drexciya operated in strictest secrecy, their identities having been concealed until Stinson's death, and released their music on Detroit's Underground Resistance label. In keeping with the political edge of the label – implied by its name and solidified by the militant public per-

sonas of the founders – their songs are fast-paced, in your face, and have a penchant for the dramatic (besides the aforementioned pads, imagine razor-sharp and/or wobbly basslines aplenty). But where do the nautical leanings come from?

Drexciya imagined an alternative reality, where the babies of pregnant women that had been thrown overboard from slave ships survived and learned to thrive underwater. This black Atlantis lived unaware that there were humans living on land, and developed to be incredibly technologically advanced, until contact with humans living above sea became inevitable – and conflict broke out. Drumming and Glass actually commissioned hip-hop group Clp-ng to create a song based on this mythology, called *The Deep*, for their podcast. If you are interested in Drexciyan mythology, I urge you to listen to it (as well as the whole episode of the podcast, which is thoroughly brilliant), although the imagery is quite striking. Another creative tribute to Drexciya comes in the form of a comic book (perhaps a nod to Black Panther) released earlier this year by Tresor Records, all in keeping with their mythology.

While Drexciyan sci-fi leanings tended to be submerged in the deepest depths of the sea, Underground Resistance founder Jeff Mills had his sights set for the intergalactic (zap me to a crisp, Jeff), but I can use this opportunity to segue into the final two acts, both coming much earlier than Detroit techno or Chicago house (where Larry Heard was making his own contribution to Afrofuturism with space

age albums such as *Alien*, and cosmic ambient explorations in the vein of *Dolphin Dream*).

On Mills' recent selection of his discography, released a year ago on his own imprint, Axis Records, titled *Sight, Sound and Space*, there is an entire third dedicated to – you guessed it – SPACE. Some of the more ambient tunes on this third of the record can be traced, with their cosmic melodies, to a pioneer of

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TO THRIVE  
UNDERWATER**

“

**THE VIDEO FOR  
SQUARE-  
PUSHER'S  
DETROIT  
PEOPLE MOVER  
IS A GOOD  
DEPICTION OF  
THE INTERPLAY  
BETWEEN THE  
CITY'S PAST AND  
PRESENT**

## MUSIC

## CONTINUED

Afrofuturism and 20th century jazz – Sun Ra. The other reference is in the cover of the album. Championing a black woman with an afro on a cosmic black background, it seems rather like a nod to the cover of Funkadelic's *Maggot Brain* and its mastermind, George Clinton.

Both were crucial in the development of the Afrofuturist aesthetic. Sun Ra and his Arkestra regularly performed in an eccentric mix of ancient Egyptian and space age clothing, whereas Funkadelic (along with Parliament, the other half of Clinton's futuristic collective) championed cover art and outfits that can only be described as space cowboy fashion. Boots, leather, and denim, as well as face paint and brightly coloured futuristic accessories all combined to emphasize the psychedelic sounds.

The philosophy of Sun Ra is rather complex, even bordering on nebulous, but it is a single quote that, to me, most powerfully elucidates the role of the present day in Afrofuturism. It comes from the 1974 film called *Space is the Place*, where he announces, "I do not come to you as a reality, I come to you as the myth because that's what black people are, myths." To this I add the epic opening lines from *Maggot Brain* – "Mother earth is pregnant for the third time // For y'all have knocked her up // I have tasted the maggots in the mind of the

universe// I was not offended // For I knew I had to rise above it all // Or drown in my own shit". No words could illustrate the disillusionment of marginalization better. But they did not stop at mere words. Sun Ra's spirit of

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AND SO, WE HAVE  
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MUSIC

jazz experimentation still echoes through much of modern hip-hop and electronic music, while his visual aesthetic keeps on resurrecting itself, with Janelle Monáe's cover art for Arch-

Android seeming particularly influenced by it. George Clinton's and P-Funk's legacy in Detroit, meanwhile, still soldiers on. Clinton himself might have moved on to other things, but the spirit of Parliament/Funkadelic was revitalized in the 80s by the

pioneers of Electro Funk, which was incredibly influential in the development of techno.

And so, we have arrived back to Detroit, the city which could be called the Mecca of all modern black music. We have closed the circle of time, in the way of Oriki. There is much to learn from Afrofuturism, and even more to marvel at. I hope that you, like me, will use this article as a platform to learn more about it. Any and all of the artists in the article are a good place to start but I'm quite confident that you can now identify many examples of your own who exhibit the same mentality. In the end, the common element is the drive to dream of a better, equally representative

Photo credits: Tobias Akerboom

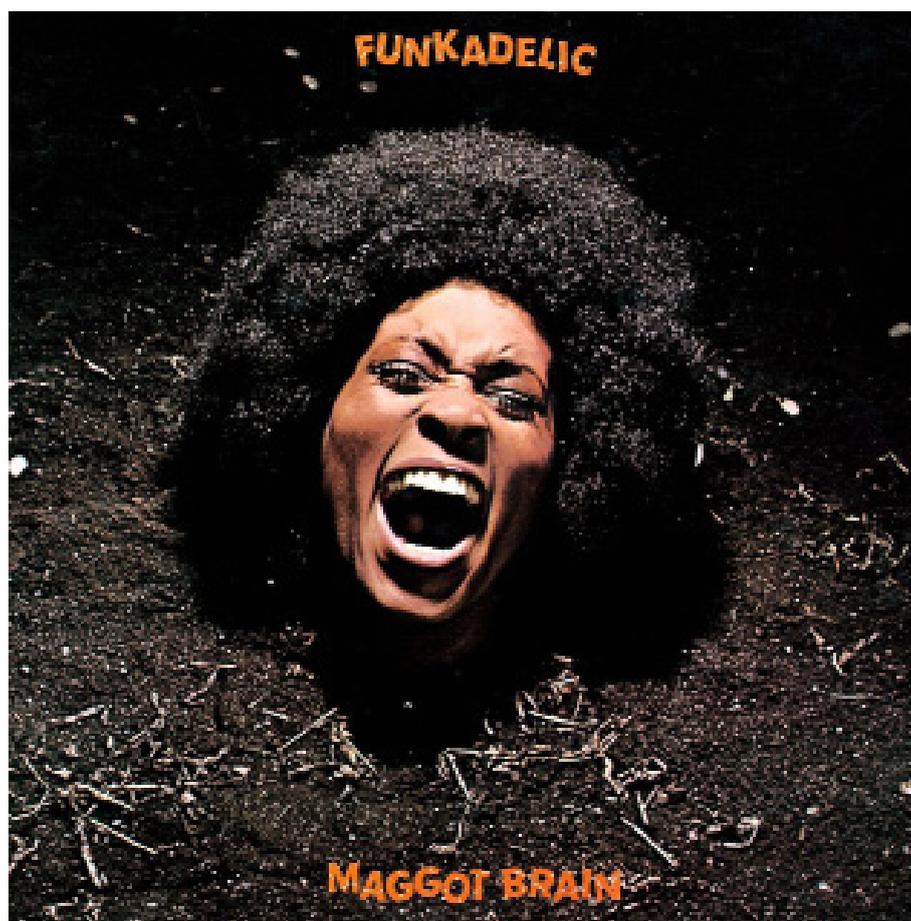


Photo credits: Axis Records



future for all people. Is that not a dream we should all share

Photo credits: Westbound Records



## Concert Review

## Spector's Socially Distanced Gig

Reviewed by **Rosie Millns** Music Writer

There are lots of things I have missed in lockdown that I previously had taken for granted, and that feeling when you manage to get gig tickets for an intimate show that goes on sale at 9:00am but sells out by 8:58 is pretty near the top of the list. So, when I missed the ticket sale for Spector playing a small, socially distanced gig to celebrate DIY magazine's 100th issue, only to find out my friend had got me a ticket, the dopamine rush was pretty sweet.

Spector are one of the bands that

VENUE	SIGNATURE BREWERY WALTHAMSTON	
DATE	10/09	ACT
ROW	N	SPECTOR
SEAT	15	SUPPORTING ACT N/A
PRICE	£11	

soundtracked my teenage life, and to be honest, they probably still do. Even though they haven't released an album in 5 years, the band have come out with some of their best songs to date through three EPs in the last two years, and released a compilation album of these EPs titled 'Non-Fiction' on vinyl on April 29th this year. Frontman Fred Macpherson has cemented himself as one of the most criminally underrated lyricists in songs like 'Untitled in D' and 'Half Life', where he sings over catchy synth riffs about the anxiety surrounding life in the digital-age. There could not have been a better band to see for a first post-lock-

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**MACPHERSON'S CHARISMA POURS THROUGH IN BOTH THE BANDS FLAWLESS PERFORMANCE, AND IN THE WAY HE ENGAGES AND JOKES WITH THE CROWD**

down gig.

My first socially distanced gig was reminiscent of my first standing gig as a teenager - feeling a bit awkward whilst not being quite sure how you should dance or what you should do with your arms. This feeling was clearly shared, with Macpherson remarking, "stop pretending like you didn't wake up at 8am to be in the only 75 people here," at the lack of socially distanced dancing. Macpherson's charisma pours through in both the band's flawless performance, and in the way he engages and jokes with the crowd in between songs. The set list spanned the band's discography, from crowd-pleas-

ing singles, to rarely played, mellow fan-favourite, 'Kyoto Garden', and the band were joined by the Magic Gang frontman Jack Kaye, for 'Never Fade Away'. The experience was surreal, and it was clear everybody there was excited to be seeing live music again after 6 months, and knew the set inside out. It is a testament to the band that they were able to make a socially distanced gig feel more intimate than most gigs were pre-lockdown, and, with it being their last show for a little while, I cannot wait to be back in the mosh pit for 'Chevy Thunder' when they return.

## Single Review

## White Cliffs

Single by: *The Wytches*

For fans of: Drenge, Yak

Run Time: 3 minutes 36 seconds

Reviewed by **Rosie Millns** Music Writer

The Wytches have returned with 'White Cliffs', the 4th single from their upcoming 3rd album, Three Mile Ditch. The four-piece band had disappeared since releasing their sophomore album *Annabel Dream Reader* in 2016, only briefly reappearing to release Halloween singles 'Double World' and 'Double World - Sludge Version'. The band pulled out of a much anticipated slot supporting Drenge on a UK tour,

and finished the year with just a small handful of intimate UK shows. However, The Wytches' long awaited return was confirmed in June 2020, with the release of lead album single 'Cowboy', and confirmation of their 3rd album in July. After a four-year hiatus, leaving Heavenly Records for their own label Cable Code Records, and losing founding member of the band Gianni Honey, The Wytches are back.

'White Cliffs' is slower than a typical song by The Wytches, however it still contains the band's characteristic moody vocals, dark and infectious riffs, and gritty, grungy sounds. Frontman Kristian Bell said of the single, "It was a track I didn't really think would work as a Wytches song. When trying out new ideas, it's easy to tell when a song isn't working even if it sounded like a typical Wytches thing. This one really didn't resemble something we'd do but we all really connected when playing it together." It is to the band's great credit that they are able to maintain a unique and char-



acteristic sound instantly identifiable as The Wytches, whilst still developing themselves sonically.

Catch The Wytches at their socially-distanced album release show at Komedia, Brighton on 30th October for £15.

Three Mile Ditch will be released on the 30th October on Cable Code Records.

## FILM

## Reviews

# Saint Maud: A Devilish Debut Feature

Oliver Weir Film Editor

## Saint Maud

Directed by: *Rose Glass*

Starring: *Morfydd Clark; Jessica Ehle*

Studio: *Film4 Productions; BFI Film Fund; BFI; Escape Plan Productions; A24*

One of the most popular devices used by horror directors of late is that of possession. Such a theme is often displayed through the process of an ‘other’ taking hold of an innocent host to go about its sordid business. This idea can of course be executed with varying levels of success. We see it fail miserably in money-grabbers like *The Conjuring* and *The Nun*, but also see it succeed in genuinely good horror movies like Ari Aster’s *Hereditary*. As in those mentioned, the possession usually takes place in a religious or cult context, though it is not in itself ever religious. The unlucky host often has no conscious agency, having totally succumbed to the spirit or devil possessing them. Until Rose Glass’s debut feature *Saint Maud*, I had not been aware as to just how unsettling a movie can be when the agency is returned to the host, when the religious possession is entirely ideological, self-driven, delusional. In many ways, this possession is more unsettling than the more common demonic possessions. A spirit can always leave, and in doing so can return the person back to rationality. But if they have been possessed by an idea, as opposed to a spirit or ethereal force, what can they return to? What can

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THE FINAL SHOT  
WILL HAUNT  
YOU ON YOUR  
WAY HOME

save them?

The role of Maud—a young nurse who cares for the terminally ill, and who is on the verge of a very personal, life-consuming, religious epiphany—is no easy task. However, Morfydd Clark (who recently featured in *The Personal History of David Copperfield*) gives a beautifully balanced performance. She gives us enough insight into her mind that we feel

her downward spiral, yet she keeps enough cards close to her chest that we do not know how far she’ll fall. Jennifer Ehle—formally Myrtle Logue in *The King’s Speech*, and Jessica in Kathryn Bigelow’s *Zero Dark Thirty*—is dangerously playful in the role of Amanda, Maud’s newest patient and target of con-

version. Although *Saint Maud* is reminiscent of a standard horror movie in the beginning, its tone shifts slightly when Maud questions her faith. As Maud looks to sex and alcohol to mend her polarising psyche, the film bears striking resemblances to Julia Ducournau’s exhilarating 2016 film *Raw*. Both *Raw* and *Saint Maud* are about a possessed young woman who tries to shake her obsession through delving into the ‘dark side’, who feels anger towards a more hedonistic older woman, and who ultimately is unable to help herself. However, despite the themes of possession and psychological degeneration, *Saint Maud*, like *Raw*, is ultimately about loneliness.

The bleak coastal town where Maud lives, and

the isolated house on the hill where she cares for Amanda, emphasise just how alone and far from normalcy she has become. The soundtrack, consisting of drawn out notes and barking cellos, comes and goes but is very effective in setting an eerie tone. Although only 80 minutes, the ending does not feel premature—it is assured and superbly abrupt, with a final shot that will haunt you on your way home. The horror we’re used to will undoubtedly mislead people’s expectations going into this one. I’d advise you to leave your desire for a scare-fest at the cinema doors and embrace the character study, you will not be disappointed.

Source: A24 Films



## Sandler’s Latest Horror Show

### Hubie Halloween

Directed by: *Steven Brill*

Starring: *Adam Sandler; Kevin James; Julie Bowen; Ray Liotta; Steve Buscemi; Rob Schneider*

Studio: *Happy Madison Productions*

Reviewed by *Oliver Weir*

I think there is in everyone’s taste a soft spot for silly movies. Adam Sandler’s career-long monopoly on this subgenre of film would make you think he’d be good at them by now. Not necessarily. In *Hubie Halloween*, Sandler plays the silly-voiced, naive, health and safety nut Hubie Dubois. Hubie regards Halloween as a sacred holiday in his home town of Salem, and each year sees that it is enjoyed safely. So far so Sandler. Then Steve Buscemi shows up—to mar the great career he’s had—playing a polite, self-loathing werewolf who

has escaped from the “werewolf institution[?]” and is being tracked by a Mike Myers parody who enjoys pissing in the street (I’m not making this up). Then Shaquille O’Neal shows up, doing a woman’s voice, and proceeds to eat a sandwich à la *Lady and the Tramp* with a woman who has a man’s voice. It’s at this point that the viewer has a decision to make: embrace the poorly written plot for the slice of fun that it is, or become deeply depressed at the state of modern cinema, perhaps even some people will manage both. The former,



Source: IMP Awards/Netflix

though sacrilegious, at least gets you through to the end of the film. I can think of only two groups of people this will appeal to: the first is children, and the second group is that subset of adults who can see that it’s crap, and yet are still good-spirited enough to try and see the funny side. It isn’t a good film, nor is it especially funny, hence its abysmal rating. But it will inevitably find its place, five Halloween from now, on those nights where the pizzas are ordered, and any film will do, and the familiar, albeit annoying grin of Adam Sandler beckons from the screen.

## Editor Recommends

# Classic of the Week: Dead Man's Letters

## Dead Man's Letters

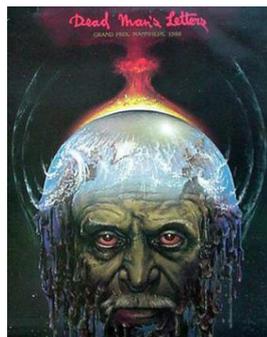
Oliver Weir Film Editor

Directed by: Konstantin Lopushansky

Year of Release: 1986

We open in a land annihilated by nuclear war, a land where the streets are strewn with charred bodies and muddy fallout, a land where shallow graves are dug in living rooms. Outside the underground hovels that many call home, there lives only rubble and radiation. Curfews are kept with brutal enforcement, such that only the dead are allowed outside. All culture has been obliterated, and the libraries stand half-submerged in black morasses. Morale is low, values deteriorated, and death a mercy to many. *"Death is not a frightening thing when everything has died"*. Professor Larsen—a former recipient of the Nobel Prize in physics—begins a letter to his lost son Eric: *"My dear boy...I am working, can you imagine that?"*

This is the bleak world of *Dead Man's Letters*. And yet, despite the desolation, the cruelty, and the decay, there is no other film I know of that has a more humanitarian message. Made in 1986—in the days of Chernobyl, Gorbachev, and Reagan—where the threat of nuclear disaster, by accident or premeditation, was still eerily present in the world, *Dead Man's Letters* stands out as a dissenting voice against rapacious governments thirsty for nuclear armaments. It appeals directly to the emotions to see the folly in war, come 'hot' or 'cold'. One of the film's best features,



though unintentional, is its irony—that its obscurity in Western cinema is likely a consequence of it having been absorbed into the propagandistic fog that it so vehemently warns about. While it did screen at Cannes in 1987, its exposure in the West was slow and fleeting; its New York Times review, for example, came out in 1989. This is of course no surprise—olive branches often find themselves getting conveniently snapped as they are extended.

In the world of cinema also, 1986 was a dismal year: it saw the release of Andrei Tarkovsky's final movie *The Sacrifice* in May, followed by his untimely death in December at the age of 54. Around this time, the baton of Russian artistry seemed to have immediately fallen into the hands of Konstantin Lopushansky. Throughout *Dead Man's Letters*, Lopushansky unravels his message regarding the sanctity of life, and his fear that modern culture has cheapened it, and modern warfare disregarded it. Such appeals to the soul, and to the goodness of people, naturally evoke strong intimations of Tarkovsky. These similarities are no coincidence: Lopushansky was intimately involved in Tarkovsky's work, having helped him direct *Stalker* in 1979. *Dead Man's Letters* is a classic by the way its central dilemma is presented. It's firstly channelled

“

OF ALL THE ENDINGS I'VE EVER SEEN, THIS IS THE CLOSEST TO PERFECT



The children go out into the wasteland, their fate uncertain

through Larsen: he has “logical theories” that try to ascertain the chance of humanity's survival, all he needs is time. However, the people around him are packing up to make the perilous journey from the museum basement where they've been lodging, to the “central bunker” where they may be safe. Matters are made worse for him when he adopts some orphans who are sick and hungry, but alive. At this stage, the dilemma of saving humanity is channeled through the children: they are the glimmers of hope in the wasteland.

Of all the endings I've ever seen, this is the closest to perfect. Larsen helps the orphans decorate a Christmas tree and then goes the way of his wife and young son Eric. The orphans gather round his deathbed to look into the eyes of the Old World. *"Remember: the world has not died"* he tells them, *"go while you have the strength, for while a man is on his way, there is still hope for him"*. And so, in coats they had no time to grow into, in boots too big to cross the tundra and the snow, the children wander hand-in-hand, as they have seen the adults do, unaware that the world has abandoned them, but quite sure that they must not abandon each other.

## Free Film of the Week: The Cabinet of Dr Caligari

### The Cabinet of Dr Caligari

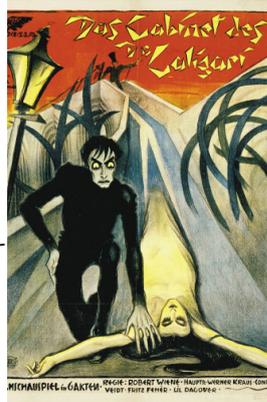
Reviewed by Oliver Weir

Directed by: Robert Wiene

Year of Release: 1920

Starring: Werner Krauss; Conrad Veidt; Friedrich Fehér; Lil Dagover

Thought of as “the first true horror film” by Roger Ebert, *Caligari* was a visual and thematic turn of pace for cinema. On the surface it is the story of Holstenwall: a small town tormented by murder. After the death of his friend, Francis (played by Friedrich Fehér) sets out to find the killer, and directs his focus towards a new double-act at the local circus: ‘Dr Caligari’ (Werner Krauss)



Credits: www.brevestoriadelcinema.org

and his haunting somnambulist Cesare (Conrad Veidt). However, if Robert Wiene's horror classic teaches us anything, it is that not everything is as it seems. *Caligari's* history, like the movie itself, is rife with deception, false-impressions, and imagined memories. Hans Janowitz and Carl Meyer, the screenwriters, were influenced by a great many things—from torrid experiences in WW1 (such as Meyer faking madness to avoid military service) to old memories of Berlin circuses. The film is often seen as a critique of authority and blind conformity. However, when you watch the movie for the first time, the interpretation will almost certainly come as an afterthought. You'll find yourself much too preoccupied with the delocalising set design, unable to fully distinguish hills from streets, or living quarters from hospitals. The most engross-



The haunting stare of Conrad Veidt as the infamous somnambulist Cesare

ing element by far is Veidt's unearthly performance—from the way he slinks around the streets at night, to his terrorising gaze, teetering between a look of piercing sentience, and the torpid stare of a waking dream.



Scan to watch!

## BOOKS

## Book review

# A must read for anyone wanting to start a new habit!

## Atomic Habits

By James Clear

Reviewed by Hari Kumarakuruparan Books Editor

Motivation is overrated.

We all have good intentions, intentions that don't manifest into results. We all may want to: build muscle, do more cardio, read more books, or even write regular blog posts. However, when trying to build a new habit or develop a new skill, one often falls into the trap of thinking big. Big goals, big steps, big to do lists, big purchases to facilitate your big new habit. James Clear's *Atomic Habits*; however, attempts to steer people away from being helplessly 'consumed by the end goal,' voicing that 'one push-up is better than not exercising ... and it's better to do less than you hoped than to do nothing at all.' And Clear raises a good point: 'we rarely think about change this way,' and it'll do us all some good if we practiced this approach when developing habits. So, let me indulge you in some ideas I found noteworthy in Clear's treasure trove of knowledge on building good habits, and breaking the bad.

The crux of the book is this: 'Habits are the compound interest of personal development.' Achieving something remarkable or developing a good habit and quitting a bad one requires incremental change. This idea is persistent throughout Clear's text. What was both fascinating and worrying was the fact that we know this. We know that 'practice makes perfect,' and anything worth doing requires painful patience. Clear's writing, however, makes one internalise these cliches profoundly. Clear explores in strenuous detail the significance of 'Atomic Hab-



its,' using personal examples from his own life and of course, an ample amount of magnificent metaphors that further help one digest the importance of habits.

Three ideas I found unique and worthy of sharing were: the



**CLEAR'S REASONING IS THAT ANY NEW HABIT CAN BE SIMPLIFIED... "READ BEFORE BED EACH NIGHT" BECOMES "READ ONE PAGE"**

2-minute rule, identity-based habits and the downside of habits – yes there are downsides!

### The two-minute rule

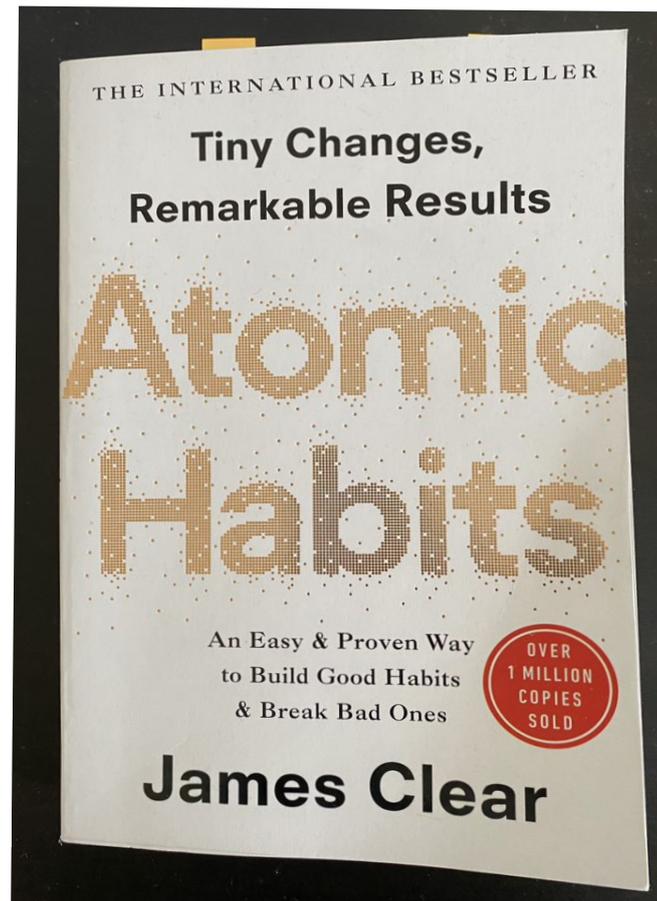
The two-minute rule was a particular favourite of mine; mentioned also in David Allen's 'Getting things done,' Clear shares that, in order to start and maintain any habit – start small. As small as possible. I'll use an example. Say, you'd like to read more. Start by reading a page. Clear suggest spending just 2 minutes on that task of reading a book. After those 2 minutes however, you most probably will just carry on reading, because you've completed the hard part of the task. You actively picked up the book, sat down, and actually began to read. You've eliminated the daunting task of reading a whole book with many, many words by candidly tricking

your brain into thinking 'just two minutes.' Clear's reasoning is that any new habit can be simplified, and any habit can be shortened to just 2-minutes: "Read before bed each night" becomes "Read one page, "Do thirty minutes of yoga" becomes "Take out my yoga mat."

So that's one ground-breaking way of starting a new habit, but how do you stick to that habit?

Clear casts a critical lens on behaviour change and what possesses someone to excel at a habit. He argues that most habits are 'outcome-based habits.' Habits based solely on results. Clear interprets behaviour change using three layers: the outer layer being the change in outcome, followed by the change in process and then your identity which rests in the centre. Clear tackles behaviour change by dismantling the ubiquitous view that you should solely have set goals to work towards; instead suggests that you work towards who you wish to become. Habits are ultimately what distinguish your views, beliefs and personality from a Bob, Karen or Margret. Under the aegis of Clear, I put this to the test.

Recently, I've been particularly fond of the remarkable mental and physical condition of SBS operators. I found their level of fitness to be mesmerising; I wanted to be like them. I included more workouts that mirror that of a soldier (push-ups, pull-ups, sit-ups, running), I was consistent, and with the wish to become anything as close to a Special Forces Operator, fitness soon became a part of my identity. I focused on the process more than a desired physique. My intensity in each session grew as I was more eager to mould myself into this new shiny identity. I almost tricked my brain into thinking I was an elite soldier



– pathetic I know. But this can be applied to anything, and often why people are inspired by celebrities and the successful. The message, however, is not to be yourself. The message is to make a habit apart of your identity by becoming a reader, a runner, a writer, a boxer; instead of someone who wants to read, run and write. That slight adjustment in your mentality can make all the difference.

### The downsides

Now that you're charged with excitement and over the moon with starting your new habit, allow me to drag you, gently, back to reality. Let us now explore the bitter, buzzkill actualities of developing a habit!

### Why are good habits so hard to develop?

As humans, we 'place a high value on instant gratification.' Clear mentions 'the Cardinal Rule of Behaviour Change: What is immediately rewarded is repeated. What is immediately punished is avoided,' which charmingly, explains why we procrastinate. One might avoid a workout because of the 'delayed return' associated with a workout. Doing one hundred push-ups isn't going to result in an improved physique immediately. Research has shown the instant gratification associated with social media

## CONTINUED

physique immediately. Research has shown the instant gratification associated with social media use: instant likes, comments, messages, and stories, develops a dependency for these instant positive feedback loops. Our brain is susceptible to prioritise these immediate gratifications; soon extending to a social media habit. In the book, Clear suggests methods to exploit this characteristic of the brain to make it easier to develop better habits, but also reveals the honest truth: 'At some point it comes down to who can handle the boredom of training every-day...you have to fall in love with boredom.' Not the most awe-inspiring quote in world – irrefutable, nonetheless.

## Downsides in the long run

Habits come at a cost. This issue emerges when 'a habit becomes automatic' and is a part of your identity, rendering you to 'become less sensitive to feedback.' You soon function on autopilot as the task has become so easy. So easy that you're expending very little energy on thinking about 'little errors' and areas of improvement. I caught myself doing this when I was in the gym, mindlessly doing exercises and weights I was familiar with. I wasn't trying – it was second nature. Clear thus highlights a prevalent component of mastering anything: Review. Reviewing ensures deliberate practice, and constant improvement. When applied to my dull gym sessions; I took note of the weights I used and exercises I found difficult and made sure I'd review each session and made efforts to improve from each session. It was a lot harder but rewarding.

Clear's adept writing style makes the message clear: be consistent, be patient and review to constantly improve.

## THE BOOKER PRIZE SHORTLIST

## Real Life

By Brandon Taylor



This coming-of-age novel follows Wallace, a black Ph.D. student in a predominantly white community. We dive deep into Wallace's wounds and desires through Taylor's exceptional writing. It touches on the important topics of solitude and vulnerability.

## Shuggie Bain

By Douglas Stuart



Shuggie Bain is a heavy read that sheds light on the difficult topics of substance addiction and abuse. The titular character Shuggie is the son of Agnes Bain, both trapped in poverty in Glasgow, Scotland. The Bain family lives on the edge of chaos and devastation, and Shuggie's love for his broen mother makes the tale all the more heartbreaking.

## The New Wilderness

By Diane Cook



A story set in a world riddled with climate change and overpopulation, The New Wilderness is the debut novel of the author of Man V Nature. Its depiction of the mother-daughter relationship and its dystopian setting makes an interesting premise.

## Burnt Sugar

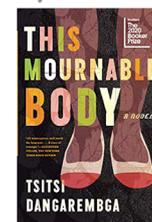
By Avni Doshi



"I would be lying if I say my mother's misery has never given me pleasure." This novel explores the relationship between Tara, a wild mother and her daughter Antara. It is a story of love and betrayal, truth and lies, and memories and myths.

## This Mournable Body

By Tsitsi Dangarembga



Written by one of the top author of Zimbabwe, this Mournable Body follows a complex protagonist Tambu whose potential and education has alienated her from her crowd. It packs a punch with its touches on neo-colonialism, capitalism, war, and poverty.

## The Shadow King

By Maaza Mengiste



Set in 1935 Ethiopia with Mussolini's invasion, this WWII historical fiction depicts the brutal event and more importantly the women warriors fighting. A unique but depressingly cruel perspective of WWII, The Shadow King provides an eye-opening story of Italy's attempted colonial rule.

## The Booker Prizes

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# VOTE

**Take charge of your Imperial experience. Choose your Reps!**

**Academic Representative**  
**Constituent Union Committees**  
**Wellbeing Representative**  
**CSP Committees**  
**Representative to Council**  
**Liberation & Community Networks Committees**

**[imperialcollegeunion.org/vote](https://imperialcollegeunion.org/vote)**

Voting opens 12:00, 19 October

and closes 14:00, 22 October

Results announced 17:00, 23 October

# Your Union Events

FiveSixEight.

## The Great British Bake Off & The Union Bake Off

#icubakeoff

Join the competition: Send us photos of your bakes on Instagram!

 @icunion

FiveSixEight.

 [beitbars](#)

 16:00 – 22:00  16:00 – 20:30

**Saturdays**

**Live Music at FiveSixEight**

**Sundays**

**Beer & Burger Deal**

**Tuesdays**

**The Great British Bake Off**

**Thursdays**

**Super Quiz**

More details at: [imperialcollegeunion.org/whatson](https://imperialcollegeunion.org/whatson)

# Union Page



## Ready, set, vote!

Are you ready? Voting time is quickly approaching and we're excited to see who is going to represent us on Union Council or in the Academic and Wellbeing Networks, support under-represented groups through the Liberation & Community Networks or lead our Constituent Unions.

All students who are full members of the Union can vote in the Autumn Elections. Remember, who you elect will be responsible for influencing changes and decisions that affect you, so make sure you get to know our candidates and what they plan to do if elected. You can view the candidates standing at [imperialcollegeunion.org/manifestos](https://imperialcollegeunion.org/manifestos).

Voting opens at noon, **Monday 19 October** and closes at 14:00, Thursday 22 October. Take charge of your Imperial experience, get ready to vote your reps. Cast your vote: [imperialcollegeunion.org/vote](https://imperialcollegeunion.org/vote)

## Join our Black History Month events

Curious what we've got planned for you? Together with our African Caribbean Society and our BME Officer we're bringing you some exciting events this month.

On Sunday, 18 October you can join us for Black History Month Film Night. We're discussing the struggles with police brutality on Monday, 19 October, and Black Women in STEM on Wednesday, 28. The African Caribbean Society are doing a games tournament on Thursday, 22 October and a delicious virtual cooking session together with the East African Society on the 30.

Links to join and a full list of events can be found at [imperialcollegeunion.org/bhm](https://imperialcollegeunion.org/bhm), so have a look and join us!

**Earn the Imperial Award**  
Reflect upon the  
transformative impact  
of your experiences

## Earn the Imperial Award

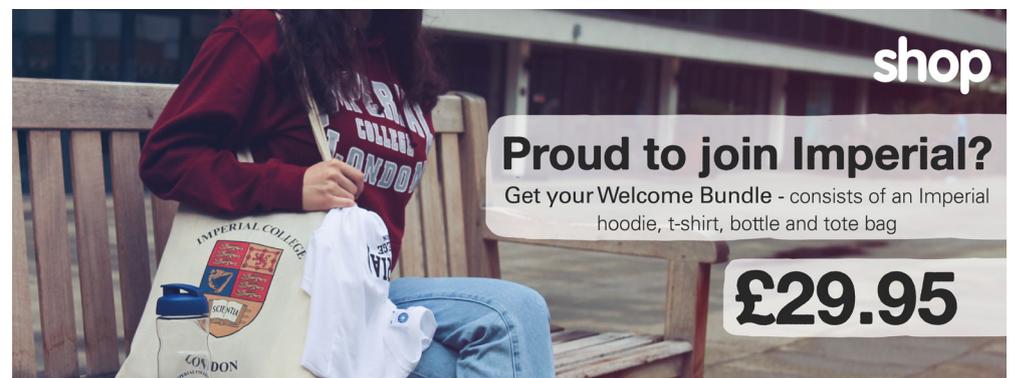
The Imperial Award is an optional programme that helps you record your experiences and activities while at university and reflect on them against the 12 Imperial Award attributes. It is open to all students at Imperial and can help you:

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Find out more and register today [imperial.ac.uk/students/imperial-award](https://imperial.ac.uk/students/imperial-award)



## Grab your bundle!

If you haven't already, you should definitely grab a Welcome Bundle! Get your Imperial branded tee, hoodie, bottle and tote bag and show your pride.

Our Shop (on the Sherfield Walkway, just across the Senior Common Room) is open and we've made sure you can come in safely and buy whatever you may need. Whether you want branded clothing, a reusable mug, a new fountain pen or you're simply hungry for some sushi - the Shop awaits! If you do visit us, we kindly ask you to adhere to social distancing rules, wear a face mask and use hand sanitiser.

Oh and don't forget you can order online!  
[imperialcollegeunion.org/shop](https://imperialcollegeunion.org/shop)

**PUZZLES**

**Mild cZeus**

		<sup>x</sup> 6						<sup>x</sup> 30	
		<sup>x</sup> 210		<sup>x</sup> 42				<sup>x</sup> 360	<sup>x</sup> 15
							<sup>x</sup> 28		
		<sup>x</sup> 25					<sup>x</sup> 48		<sup>x</sup> 6
		<sup>x</sup> 45		<sup>x</sup> 8		<sup>x</sup> 32		<sup>x</sup> 16	
							<sup>x</sup> 2		

**Medium cZeus**

			<sup>x</sup> 18						
			<sup>x</sup> 288					<sup>x</sup> 36	
		<sup>x</sup> 8				<sup>x</sup> 36		<sup>x</sup> 360	
		<sup>x</sup> 36		<sup>x</sup> 63		<sup>x</sup> 378		<sup>x</sup> 150	

**Hot cZeus**

			<sup>+</sup> 16						
							<sup>x</sup> 720		<sup>x</sup> 72
			<sup>x</sup> 840						<sup>x</sup> 504
			<sup>x</sup> 294		<sup>x</sup> 2401			<sup>x</sup> 294	

Felix is proud to announce a new type of puzzle. Never before seen in a newspaper in the world, cZeus was developed by the Mathematical Games company and provided to Felix.

**RULES**  
cZeus is a mathematical puzzle formed of four simple rules - follow this QR code for an explanation of how it works.



**Last Week's Answers**

1		<sup>x</sup> 6				2		<sup>x</sup> 10		5	
		<sup>x</sup> 144		<sup>x</sup> 192				<sup>x</sup> 60			
3			8			2				3	
								<sup>x</sup> 378		<sup>x</sup> 21	
6			5			9				7	
4			4			<sup>x</sup> 32		8		<sup>x</sup> 8	1

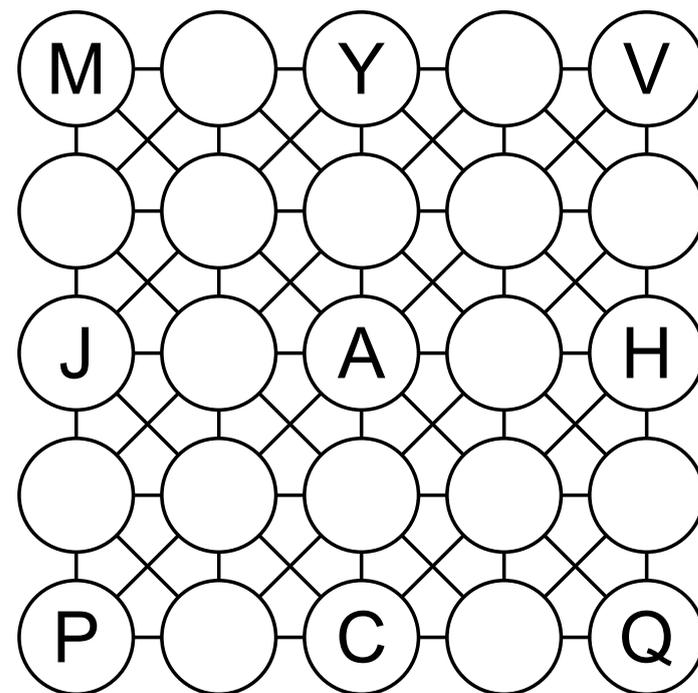
8	1	5	9	4	7	2	3	6
4	7	6	8	3	2	9	1	5
2	9	3	6	1	5	8	4	7
3	6	2	4	7	9	1	5	8
9	8	7	1	5	3	6	2	4
1	5	4	2	6	8	7	9	3
6	4	8	5	2	1	3	7	9
7	2	9	3	8	4	5	6	1
5	3	1	7	9	6	4	8	2

6	7	3	9	1	5	8	2	4
5	8	4	2	7	3	1	9	6
2	9	1	8	4	6	7	5	3
7	3	9	4	5	2	6	1	8
4	5	6	3	8	1	9	7	2
8	1	2	6	9	7	3	4	5
3	6	5	1	2	9	4	8	7
1	2	8	7	3	4	5	6	9
9	4	7	5	6	8	2	3	1

9	5	1	6	7	4	3	8	2
2	3	8	9	5	1	4	6	7
4	7	6	2	8	3	5	9	1
7	1	9	3	6	8	2	5	4
3	6	5	4	9	2	7	1	8
8	4	2	5	1	7	9	3	6
5	8	3	7	4	6	1	2	9
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**Gogen**

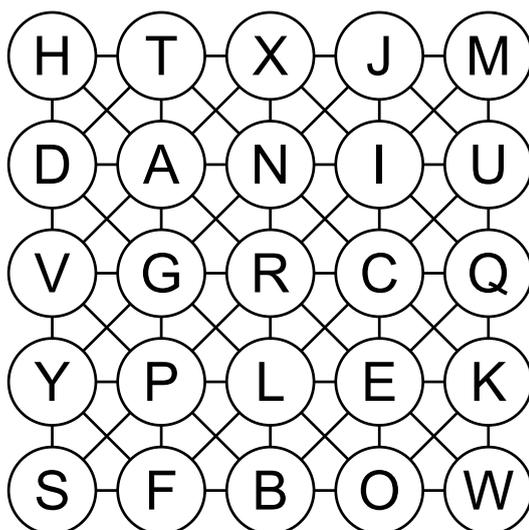
**RULES**  
Write letters into each circle to form the listed words. Letters can be linked by moving between adjacent cells horizontally, vertically or diagonally in any direction. You may use each letter in the alphabet only once.



Clues

COAXINGLY - ELBOW - FJORD - LAKE - PROBLEM - SHINGLE - SQUAB - VIADUCTS - VILE

A	D	V	E	N	T	U	R	E		P	E	W		
F		E				N				A		H		
R	E	N	T		F	R	A	C	T	U	R	E		
I		U		M	I		A			N		E		
C	I	S		E	M	P	I	R	I	C	A	L		
A				A		E				D		H		
N	I	G	H	T						I	D	Y	L	L
		R		B		U		G						O
B	R	I	T	A	N	N	I	A				R	O	T
L		S		L		B		N				A		T
U	N	T	I	L	L	E	D			S	L	O	E	
N		L						N				L		R
T	E	E				A	N	D	R	O	G	Y	N	Y





# A Take on the Active vs Passive Equities

Credits: Adeolu Eletu

**Marios Papadopoulos** Investment writer

An active investment strategy requires, as the name suggests, an individual, usually a portfolio manager, to make decisions about buying and selling shares on a daily basis. Given the constant fluctuations in equity prices, especially in uncertain economic times such as this one, an active approach can exceed the stock market's average returns. In order for this method to succeed, thorough analysis and knowledge in particular market sectors is essential. That is the reason why a portfolio manager usually works with a team of analysts responsible for predicting which asset's price will change and when. An undeniable advantage of this approach is the flexibility that it offers. Active investment managers can buy equity from promising companies, which have either recently entered the market or have undergone changes which made them more competitive, at a moment's notice.

In contrast, passive investing aims for a long-term profitability, which means selling and buying equity occurs rarely. This stems from the buy-and-hold philosophy, which is opposed to attempting to predict the market's next move. There are two main ways of investing passively. The first is to invest in and retain blue chip stocks. Those companies' stock is deemed relatively safe because they have a strong reputation for remaining profitable, even during periods of recession. However, purchasing an index fund, which is a type of security that tracks a major stock market index, such as the Dow Jones Industrial Average, is the



Stock market volatility is important for investors. Causes of recessions could be linked to political events such as the US election.

most prevalent strategy.

A market index is defined as a hypothetical investment portfolio which includes companies in a particular sector, such as software and energy. The existence of multiple indices is attributed to the different mathematical methodologies used to create an index. Each methodology calculates the index's values by weighing parameters such as stock price and market capitalization differently. Index funds track the market's trajectory by selling equity from firms no longer included in the index and purchasing stock entering the index. This strategy results in a significantly lower number of transactions occurring compared to active investing.

The key benefit is the reduction in fees and risk. Given that no team is required to manage the portfolio, there are no labour costs associated with the analysts' salaries and transaction fees are lower due to fewer trans-

actions happening. Risk is lowered because owning a miniscule piece of stock from thousands of consistently profitable firms results in the accumulation of



## DIFFERENT MATHEMATICAL METHODOLOGIES ARE USED TO CREATE DIFFERENT MARKET INDICES

returns over a long time period. However, as historical trends have shown, the decrease in risk leads to smaller returns, which tend to be close to the market average. The buy and hold mentality of passive investing suggests that index funds may be slower to sell under-per-

forming stock than active investors.

The debate between active and passive investing will not be settled- and there's no reason for it to be concluded since their advantages can be combined in a single strategy. This turbulent year, which will be marked by COVID-19 and its effects on the global economy and the US Presidential election, has caused prolonged uncertainty but also created potential new opportunities.

In particular, a Joe Biden victory would prove beneficial to the renewable sector due to his proposed plan of a \$2 trillion investment in building clean energy infrastructure. The US' stance on the Climate Paris accord emission targets would also shift, which would make investing in green companies enticing.

### Some policy changes to look out for?

Another area where significant policy changes may occur is trade. A potential Biden administration is expected to take steps to de-escalate tensions with China and the European Union by working to reduce tariffs.

This will prove beneficial to European car makers and US companies which export their products primarily to China. On the other hand, a Trump re-election would renew con-

fidence in oil and gas shares as these firms would avoid stricter regulations and potential tax increases on account of their environmental impact. What seems of greater concern to the investment community and certainly the majority of economists is the approval of an economic stimulus package.

Specifically, the current impasse prolongs uncertainty about the state of the economy. Consequently, unless an agree-

ment is reached before Election Day, it will be important to see if one party gains unified control of the government.

The longer that the bill is delayed, the more severe the downturn will be due to a wave of business bankruptcies and defaults on retail and corporate loans. With an active investment approach, one could profit significantly from selling stock of firms expected to be positively affected by either

candidate's policy platform.

However, if the election outcome leads to neither party controlling all branches of government, legislation regarding either the stimulus bill or other issues, such as the environment and trade, will become difficult to pass, which alters expectations completely.

Under this scenario, the passive approach may yield better returns.

# Environmental injustice in the UK prevents access to nature for all

Flora Dickie Sustainability editor

Spending time in natural environments and forming connections with other species is vital for our health and sustainability. However, in many urban areas of the world, finding time and space for these connections is not accessible for all. Environmental inequality manifests itself in people's access to green space, pollution risk and exposure to flood risk. According to a review of past research, 'environmental injustice is a real and substantive problem that afflicts many of our most deprived and socially excluded groups', likewise, a report by the Environment Agency states that people who are socially and economically disadvantaged often have less access to green space.

A paper from DEFRA (Department of Environment, Food & Rural Affairs in the UK) states that exposure to the natural environment is significantly

lower in ethnic minorities populations and low-income populations compared to the rest of the population. Plus in 2018, Natural England published a report 'that 63% of the white British population visited green spaces weekly, while just 46% of the BAME British population visited green spaces at similar rates'. Furthermore, a study by the Forestry Commission highlighted that one of the factors that prevent ethnic minority people from having equitable access to woodlands is that they feel 'unwelcome and out of place'.

Racism in the outdoors and in environmental movements prevents ethnic minorities from accessing nature. Many white environmentalist organisations do not care for inner-city environmental racism nor for ethnic minority access to the countryside. Moreover, for environmental justice in the UK, it is not just important to increase the number green spaces but also to consult with local communities and support

community networks for creating an action plan for a more sustainable city.

Racism is an environmental issue. Susan Cutter defines environmental justice as 'Equal access to a clean environment and equal protection from possible environmental harm irrespective of race, income, class, or other differentiating features of socioeconomic status'. Racism dictates which communities get worse pollution, more exposure to harmful chemicals and proximity to waste-processing sites.

It is essential for white people, including myself, to remember that if you are not actively anti-racist, you are maintaining the status quo of white

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**OUR INEQUALITY CRISIS IS INTERTWINED WITH THE CLIMATE CRISIS. IF WE DON'T WORK ON BOTH, WE WILL SUCCEED AT NEITHER.**

supremacy. Marine Biologist Dr Ayana Johnson recently wrote in an article, 'To the white people who care about maintaining a habitable planet, I need you to be actively anti-racist.

I need you

to understand that our inequality crisis is intertwined with the climate crisis. If we don't work on both, we will succeed at neither'. Therefore, any form of activism, such as climate justice work, is not fulfilling its purpose if it doesn't have anti-oppression and anti-racism at its core.

## 'The Nature Fix' - Book Review

Monami Miyamoto Sustainability editor

Amid the current pandemic, there are countless tips and articles online about how to cope and look after our health (mentally and physically). Almost all of them include going outside, but very few go into the details of why it's beneficial.

In 'The Nature Fix: Why Nature Makes Us Happier, Healthier, and More Creative', Florence Williams goes into incredible depth about the scientific benefits of spending time in nature, whilst covering a wide breadth of topics to argue that nature is not a luxury, but rather, a necessity for humans to thrive.

One of the most remarkable features of this book is the sheer amount of scientific research and analysis that has gone into making the arguments for nature convincing. As someone who majors in a science degree, it was so refreshing to see the amount of concrete empirical evidence that Williams

provided. For example, when it comes to concepts such as 'forest-bathing' or 'eco-therapy', it can become all too easy for people to dismiss it or deem them as hippy-related solutions that aren't based on factual understanding. That's why this book can hopefully encourage and inspire not just those who need a little push to get outside, but also for those who are sceptical about the benefits nature can bring us.

Whilst there is a lot of science inside it, the book doesn't feel heavy on the brain at all. Instead, Williams somehow manages to seamlessly weave together facts with personal sentiments, descriptive narratives, as well as specks of humour. For example, there are several chapters

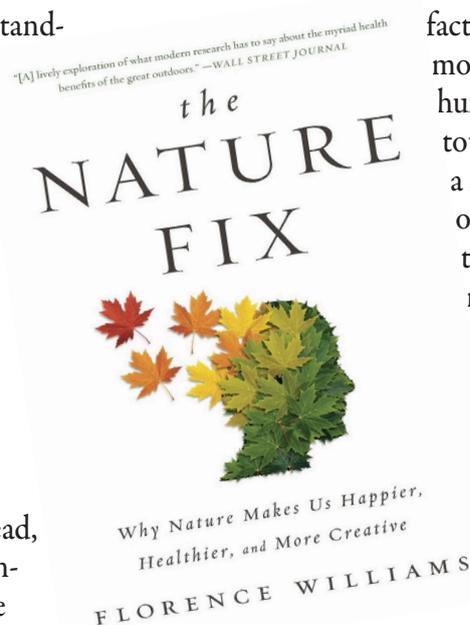
dedicated to her experience of spending time in nature with PTSD and ADHD patients. Her personal story of interacting with them and watching them

heal, speaks beyond factual arguments to a more profound innate human desire to get in touch with nature as a means of restoring our well-being. With the global rise in mental health issues such as anxiety and depression, it's clear to see how a future in which people better appreciate nature, could bring about a generation of more balanced, vibrant and engaging individuals.

Another aspect of the book that made it compelling was how Williams

gathered information and insights from all over the world to convey the universal and timeless value of nature. From studies about forest-bathing in Japan, to the Scandinavian concept of having free access forests, by touching upon the different values that communities around the world place on nature, it's clear to see how nature is necessary for fostering a planet of happy, healthy people.

As we all spend an increasing amount of time indoors, due to both the global pandemic and our lifestyles being dominated by screens, it's even more vital for us to take time outside. The good part is, as Williams reassures us in the book, it doesn't mean we need to spend an entire week in the middle of nowhere (although that would be great too); even just little doses of nature whenever we can, is undoubtedly better than nothing.



## SUSTAINABILITY

# Should we really be picking wild mushrooms?

Flora Dickie Sustainability Editor

I recently had a boundary-breaking experience during a moment of inter-species reconnection.

Recently I visited my local woodland and had the luck of coming across wild herbs, nuts and vegetables. Overjoyed at the discovery, I foraged a stem of fennel, plus a couple of small courgettes and their bright yellow flowers making sure to leave plenty for others to enjoy. Once back at home I noticed I cooked the plants with more care than usual, the flavours were so much more complex, stimulating a new variation of stomach neurons and blessing the diversity of my gut flora. But how sustainable is it for people without a real necessity to forage and hunt wild foods?

Eating wild foods makes more apparent our relation to other species with whom

we share the earth, reminding us that we too are wild nature. Having this connection is vital, as scholar Gina Rae La Cerva writes, 'to be alienated from wild nature is to be alienated from ourselves'. Foraging wild foods allows us to comprehend the complex connections of an ecosystem and millions of years of evolution that led to the growth of something we can eat.

As we are increasingly living in

urban and suburban settings without any connection to wildness, most of us live in a state of disconnection from other species, and experiencing wildness has now become a luxury.

Yet this connection is so vital as studies on biophilia have shown how exposure to wildness reduces stress and anxiety and increases happiness.

Most of us do not rely on wild foods for subsistence, so the wild food resurgence we see, especially in the Global North, is not out of need but appetite.

As we long for a sense of wildness no longer present in our lives, wild foods have become fetishised and commodified as a delicacy.

Wild foods now being a luxury item is a product of disaster capitalism, which has ended up ultimately destroying most wild areas and created the marketisation

of all aspects of life. If this wasn't problematic enough, niche markets of wild foods are actually destructive to ecosystems in the way they harvest crops or animals, and the irregularity of nature is incompatible with industrial growth.

The trend of picking wild mushrooms has really grown over the past decade with an increasing number of commercial collectors ransacking whole woodlands of their fungal species. Not only does this removal cause negative short-term effects on the populations of fungi, but it also damages the woodland long-term, as

fungi have so many interconnected roles in maintaining the functioning of an ecosystem such as recycling nutrients, being a host for invertebrates and providing food source to animals. Epping Forest in London is known for having an abundance of mushrooms some years, but the Forestry Services of London highly advise against people foraging, 'We welcome people visiting the forest and admiring the many fascinating shapes, forms and colours the fungi world has to offer, but please leave them there for the next visitor and future generations to enjoy.'

It is not viable for us all to depend on wild foods; however, we can re-wild our agricultural systems through the incorporation regenerative principles and increasing species diversity. At the same time, we can improve accessibility to healthy foods to create abundance and mutual thriving for all. This action of transformation is necessary for food and environmental justice, and it isn't a problem for the future, change is needed now.

Our current global agricultural system does not serve to provide for all as it was designed for profit-making from the beginning of industrial-



isation. Climate change is decreasing agricultural yields, so in some parts of the world, wild foods are essential for food security. One million people around the globe depend on wild

foods for subsistence, which are mainly procured by women bearing essential

ecological knowledge, and a much deeper understanding of the cycles of networks that feed and water us.

So, if we don't depend on wild foods for subsistence, from time to time it is ok to pick the occasional blackberry to eat yourself, but we should not be supporting the marketisation of wild plants, animals and fungi as we have already taken too many fish from the sea.

This article was inspired by the For the Wild podcast hosted by Ayana Young and the book 'Feasting Wild' by Gina Rae La Cerva, a geographer and environmental anthropologist.



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**EATING WILD FOOD MAKES MORE APPARENT OUR RELATION TO OTHER SPECIES WITH WHOM WE SHARE THE EARTH REMINDING US THAT WE TOO ARE WILD NATURE.**



**1 million**  
people depend on wild food for subsistence

## This Week's Sustainability Inspiration

Flora Dickie Sustainability Editor

### Organisation: Fibershed ([www.fibershed.org](http://www.fibershed.org))

On the theme of wildness, I would like to spotlight one organisation in particular that is inspiring the textile industry to strive for sustainability, and at its core has re-wilding principles seen in practice as regenerative agriculture.

The project began in 2010 when Rebecca Burgess wanted to reduce the environmental impact of her wardrobe. And so began the challenge to source dyes, fibres and labour within 150 miles of the project's headquarters. After a couple of months, the project became a movement and now Fibershed works in developing regional and regenerative fibre systems on behalf of independent producers, implementing carbon farming, rebuilding regional manufacturing and connecting end-users with farms.

The ultimate aim is to create 'climate-beneficial' clothing, utilising the 'soil to soil' principle, and to educate the public on the benefits of decentralising the textile supply chain by creating a regenerative textile economy.



# Imperial star athlete selected to represent Great Britain in two different sports

**Sports Editor** Konrad Hohendorf

What follows is a few questions I put to one of Imperials most high performing athlete, Christy Chan, who recently became a GB athlete in two very different sports:

## Who are you?

Hi everyone! I'm Christy, a third year EIE undergraduate. I'm from Hong Kong, and went to an International school there, Hong Kong International School. When I was thirteen, I moved to the UK to attend boarding school, Sevenoaks School. However, I disliked boarding at the school so became a day pupil shortly after. I compete in two sports, target rifle shooting and powerlifting. In target rifle shooting, I compete in two disciplines, smallbore and fullbore. I was recently selected to compete for Great Britain in the Drew Match, an international smallbore prone rifle competition for U21's. This year, in fullbore, I won the Young Rifleman's Aggregate (best scores for my class at 300 yards, 500 yards, and 600 yards). In powerlifting, I was also recently selected to compete for Great Britain in the World Junior Bench Press Championships, in the u52kg category, but this fell through due to COVID.

## What's your sport background?

I started shooting when I was thirteen at Sevenoaks, as a hobby and as something to fill time and to distract me from

being homesick. I did this once a week for two years, until year eleven, where I chose it as my 'sports option' meaning I did it three or more times a week. I was pretty bad at shooting for the first four years, until in my final year of school, it all just clicked, and I suddenly got much better, being selected for England in the Schools' match.

When I joined Imperial, using the facilities provided by Imperial College Rifle & Pistol Club, I used the knowledge I acquired over the past few years to try and improve without any coaching or help, which was difficult, but I persevered! In my first year, I came 6th in female BUCS short range, and last year I came 2nd beating some GB shots as well! In my last year of school, I needed something to fill in the time during my free periods. Instead of spending all of my time at the shooting range, I decided to go to the gym – it was nothing serious until I joined ICBarell at university. In second year, I continued powerlifting, and with the support of my coach and ICBarell, I was able to make progress, competing in my first competition in January 2020, qualifying for British Junior Nationals, and National Bench Press Champion-

ships. I competed in the bench press championships in February 2020, came 2nd in my weight class, and was subsequently selected for GB!

## How do you balance university and sport?

To be perfectly honest with you, I don't know. I meticulously plan my time and try to stay organized and on top of things. I do tend to wake up at a decent time, and just get grinding away at work/training.

## Have you ever experienced racism or sexism in the world of sport?

In powerlifting, in short, no. ICBarell is a super diverse club, we have a 60% female committee! I am super glad to see this, and the fact that we have come so far as a new club (founded in 2016), to the extent where I have never experienced racism or sexism in powerlifting.

In shooting, it's a different story. People in the sport tend to come from private school backgrounds, so everyone in the sport tends to be posh, white, and mostly male. Smallbore more so than fullbore; last year in the National Smallbore Rifle Association's Bisley Meeting, I was the only person of colour on camp, and was subsequently interviewed for their video!

Saying this, I have not not felt welcomed – there are just a few times where the odd racist joke or comment comes out, without a modern-day filter! In fullbore, although the majority are as I described above, there's a lot more diversity. The people around are very supportive and always willing to help, and racism/sexism is very much less of a thing than you would expect! However, I must add that being a female in two male dominated sports is quite challenging. You have to assert yourself, otherwise you'll be forgotten and trampled



Christy Chan collecting her trophy for the Young Rifleman's Aggregate

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**I DO TEND TO WAKE UP AT A DECENT TIME, AND JUST GET GRINDING AWAY AT WORK/TRAINING.**



Christy Chan (second woman from left) with ICBarell

over! As long as you act confidently, you should be perfectly fine!

## How has COVID affected your life?

In March, when things started getting worse with COVID, I flew back home to Hong Kong. Just prior to this, I was still entered into some competitions, so decided to shoot all of them in one day. Here, in the midst of all the stress, I was sexually assaulted by a coach at the time. I said nothing and finished my shooting, because I had a flight to catch in 4 hours. It severely impacted me and I underwent therapy to try and overcome this. I am in the process of recovering. Gun laws in Hong Kong are extremely strict, so I wasn't able to shoot. During my mandatory 14 day home quarantine I thought I could just wait and come back to training at the gym, however the gyms closed due to a second wave! I had to make do with a pull up bar and some resistance bands, but needless to say, I lost a lot of strength.

When the gyms reopened again in April, I went hard, and nearly injured myself squatting. I kept going at it though, set a new PB, and then the gyms closed again (third wave). The gyms were closed until I came back to the UK at the beginning of September, for some

## SPORT

## CONTINUED

trial cards to get into the GB team. Somehow made it to the top of the list and was subsequently selected! In fullbore, it was a different story. I hadn't shot fullbore in a year, rocked up, had a bit of a breakdown (due to the traumatic event that happened in March), but still managed to shoot well on 2 of the 4 days, and subsequently won the Young Rifleman's Aggregate! In some ways, although I'm very sorry to hear of the people affected by the current coronavirus outbreak, COVID has been a blessing in disguise

for me. It has given me the chance to take a step back and slow down, focusing on relationships (with my dog), and enabled me to improve my mental health by not placing so much pressure on myself.

#### What's your favourite thing to do outside of sport or university work?

Socialize with food! The sports I do are pretty individual, so it's incredibly important for my mental health to speak and socialize with friends. Hong Kong culture is based entirely around food, so I just love getting together with friends over good food.

Credits: NRA UK/NSRA



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## ICBARBELL IS A SUPER DIVERSE CLUB, WE HAVE A 60% FEMALE COMMITTEE!

#### What advice do you have for aspiring athletes?

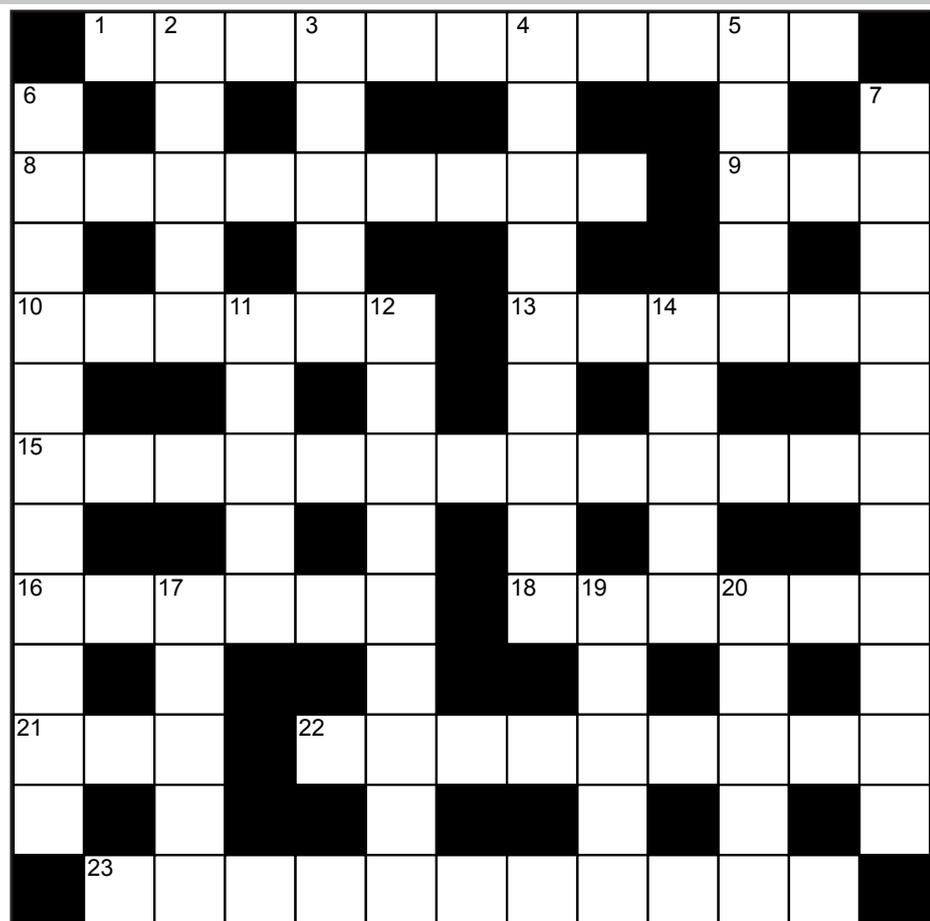
Keep your chin up! You're already doing really well by participating in sport alongside an Imperial degree! Be sure to manage your time well and remember that recovery is just as important as training. Learn to enjoy and trust the process, and remember it's about what you learn along the way, and not the outcome.

If you have been through a traumatic experience, then please do reach out to somebody who is in a position to help. This can either be your tutor, a counsellor or even a friend. At the end of the day your health, specifically your mental health, is one of the most important things to maintain in life so make sure you prioritise it.

If you know of somebody who you think we should interview about their sporting achievements, no matter what sport, then please do get in touch at [Sports.felix@imperial.ac.uk](mailto:Sports.felix@imperial.ac.uk)

### Felix cryptic Crossword No. 3

Serendip



Enjoy solving cryptics? Head over to Page 34-5 for more puzzles and the chance to enter our clue writing competition and be featured in next week's issue.

#### Across

- 1 Faithful East Enders draw the line here? Bollocks! (6,5)
- 8 Intersite fires spell trouble for corporation (9)
- 9 Sign of a railway crossing (3)
- 10 Little digger allowed to reverse outside bank (6)
- 13 Suggestion of divesting Amir's supply? (6)
- 15 Asian flower suit is initially tailored for businesswoman (13)
- 16 Not all of stoned gearheads are nervous (2,4)
- 18 Georgia's first two baby twins (6)
- 21 Nothing odd in muezzin's piece by Israeli construction (3)
- 22 In Italy, miss swing oddly before putting back one type of club (9)
- 23 Regal eatery blend? (4,4,3)

- 5 In the region of Corsica but not so exotic (5)
- 6 Five routinely out to lunch, taking little Quentin to throwing practice (for dummies)! (11)
- 7 Dishevelled city slammer uniform (11)
- 11 Injury that hurts back and German (5)
- 12 Animal issue in Google's first environmental violation (9)
- 14 Striking case of damsels in distress here once? (5)
- 17 Heather's family time interrupted by Imperial College (5)
- 19 Jet set boy around Pole after Spain, briefly (5)
- 20 Something organic for one wretched dime (5)

#### Down

- 2 Trump no longer running party (5)
- 3 Lighter muscle (5)
- 4 Cheating son becomes slipshod, finally going down (9)

#### Last week's solution

B	U	M	B	A	G	A	D	R	I	F	T
E	A	S	A	N	U						
H	I	T	T	H	E	H	A	Y	K	E	N
E	A	O	C	E	A						
M	O	D	U	S	V	I	V	E	N	D	I
O	O	P	P	N	C						
T	E	R	S	E	O	T	E	T	R	A	
H	C	L	R	H	T						
D	I	S	T	I	L	L	E	R	I	E	S
I	N	A	O	C	E						
S	P	A	T	R	I	W	E	E	K	L	Y
L	P	O	A	E	E						
E	X	T	O	R	T	U	R	A	N	U	S