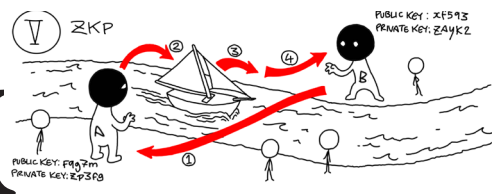


Felix



INSIDE

Understanding encryption > p7
Stop the pier at Craven Cottage! > p16

ISSUE 1800

FRIDAY 13TH MAY 2022

Business School graduands show “appalling lack of respect”



Credit: Imperial College London on YouTube



Attendance at the Business School, CLCC and CHERS graduation ceremony. At the beginning (left) and after all honours had been read out

Sam Lovatt Editor-in-Chief

Graduands from the Business School acted in a ‘rude and entitled manner’ as they left immediately after their procession, a senior staff member involved in last week’s graduation ceremony has told Felix.

More than 3,000 students graduated last Wednesday in the first graduation ceremonies that family members have been allowed to attend since before the pandemic. Graduations took place across three separate ceremonies: one each for the Faculty of Natural Sciences, the Faculty of Engineering and the Business School, Centre for Languages, Communication and Culture and Centre for Higher Education Research and Scholarship. The vast majority of those attending the latter ceremony were graduands of the Business School.

Following their procession, where the graduand walks across the stage and shakes hands with the Provost, ‘two thirds or more’ of those present left the Royal

Albert Hall, along with their guests. This left the Hall without the majority of audience members when Honorary Degrees and Imperial College Medals were awarded. Recipients of these awards included Dame Kate Bingham, former Chair of the UK Vaccines Taskforce, and a number of long-serving staff members of the Business School who have spent their careers improving the experience of Business School students.

Furthermore, a posthumous award to a student who had sadly passed away during the year was received by a ‘tearful mother’ in front of a largely empty hall (*see photo*).

By contrast, livestreams of the ceremonies from the faculties of Engineering and Natural Sciences showed a largely full audience from start to finish, including in the areas reserved as seating for guests of the graduands.

Business School graduands have reportedly acted in a similar fashion in

...continued on page 3

Anglo-French research venture “bridge of knowledge and learning” to Europe

Sam Lovatt Editor-in-Chief

Imperial College and France’s National Centre for Scientific Research (CNRS) will co-host an international research centre, established to tackle global issues, including in the fields of climate change, artificial intelligence and medicine.

The collaboration, officially titled ‘CNRS-Imperial International Research Centre for Transformational Science and Technology’ (IRC), will bring together world-leading expertise in essential disciplines, as well as boost ‘early-career researcher training such as PhD programmes, research funding and proposals including with Horizon Europe, as well sharing facilities,

laboratories, infrastructure and data’, according to Imperial College.

Both institutions involved are working towards the UN’s Sustainable Development Goals.

So far over 30 PhD places have been created by the partnership and filled by candidates.

The partnership follows other collaborations between Imperial College and the CNRS in the fields of maths and physics. In 2020 five more PhD places were added to a joint PhD programme in ‘Mathematics, data and their applications in all areas of science’.

The IRC is the CNRS’s second

...continued on page 3

EDITORIAL

The good things

Did you know that 65,000 Social Care visas were issued in 2021 to help plug the gaps in the health and care sectors in the UK? Did you even know that Social Care visas were introduced in August 2020 to address this problem? I didn't know either, and it's part of my job to read the news. Such progress can be described as 'moderately good'; there's no attention-grabbing headline that can be written about a slightly different type of post-Brexit visa, and a steady uptick in the movement of Filipino and Nigerian migrants into the UK on these visas is hardly headline material. 65,000 more care workers later and the NHS and care system still have a plethora of problems. But this is still really good, and I think it should be touted more. 65,000 more people are now in employment in the UK, earning more than it's likely they could in their home country, filling some of the record



number of job vacancies, caring for people who can't care for themselves. It should be celebrated by liberals as a triumph of immigration, and by conservatives as an economic win-win-win of Brexit. But punchy headlines trump actual progress, I guess.

The same goes for almost all areas in public life - the shortage in HGV drivers is way less bad than it was a few months ago, but the last we heard about it was when it was still debilitating our supply chains. Meanwhile the price of gas has been going up for over a year now, and good

lord do we know about it. Iteration after iteration on exactly how bad the cost of living crisis is becoming adorns the front page of most papers most days, because it represents a steady trickle further into the negative. It would be good for all of us if the trickles out of it were reported on too.

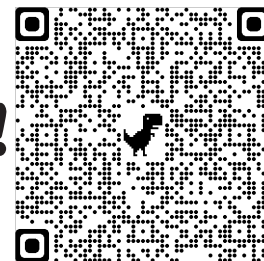
Northern Ireland

Since the idea of Brexit was conjured up it was always clear that there was no agreeable way to deal with the issue of Northern Ireland (NI); if there's no Irish Sea border then there has to be a border between Northern and the Republic of Ireland, and vice versa. This has always been obvious, and it has just been ignored, and ignored, and ignored, and now we're at a potentially devastating crux.

The government is considering ripping up the NI agreement, removing the checks on goods being transported between Great Britain and Northern Ireland and grossly undermining EU law. This would be in massive breach of the Withdrawal Agreement which Boris himself signed at the end of

2019. The European Commission has already said that this would not go down lightly, and Foreign Secretary Truss has reportedly been told that a scrapping of the NI protocol would result in the EU suspending ALL COOPERATION with the UK (other than on Ukraine) and initiating legal action against the UK. Scrapping of said agreement could happen as soon as next Tuesday, and boom, we're in the No Deal Brexit situation, the idea of which dominated months' worth of headlines between 2016 and 2020. This would without a doubt add more stress to the already woeful financial situation we find ourselves in due to Covid recovery and the war in Ukraine. It is so unbelievably reckless of our government it is hard to take it seriously.

**HAVE YOUR SAY ON
THE NAME OF BEIT!
Today at 3pm ->**



Statement of Intent

At Felix we believe that it is always in the interest of the students to know. Transparency in the workings of the College and the work of your student representatives is key. 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 at the College .

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.

**Signed by Sam Lovatt
Editor-in-Chief**

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Konrad Hohendorf	Sport Editor
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And our numerous contributors



“Rude and entitled”

...continued from page 1

the past, where many have left the hall despite being asked not to by marshals at the event. As a result, the College found it hard to find enough members of staff to volunteer to marshal for this ceremony, with many specifically asking not to cover the Business School’s ceremony.

A source closely involved with the ceremony said ‘It was deeply disappointing to see the Business School students flocking out of the Hall as soon as they’d crossed the stage. It showed an appalling lack of respect and consideration for their peers who had had the patience to sit through and applaud them, only to graduate in front of a practically empty room. They were raucous and disruptive, taking selfies in the aisles on their way out. It must have been deeply embarrassing for the College, presenting honorary degrees (and one posthumous student award) in front of a sparse crowd.

The students in every other Faculty have had the decorum to sit through the duration of their ceremonies, so it’s not clear why Business School students feel they can act differently.’

The same source drew a comparison between the behaviour of the graduands, and the behaviour of their parents who also left the hall in equal droves.

A Business School spokesperson said ‘We would like to apologise on behalf of the Business School for the behaviour of some of our graduands at last week’s Graduation Ceremony, which falls short of our values of community, collaboration and respect. We are already exploring, together with our students, the circumstances that influenced this unfortunate situation and how we can ensure it does not happen again. We would like to take the opportunity to thank all the organisers and volunteers for their hard work and dedication in putting together such a memorable event.’

Receiving honorary degrees at the

ceremonies were Sir Samuel E Jonah, Dervilla Mitchell (CBE), Professor Sir Peter Knight (Imperial College), Professor Sir John Savill (Edinburgh University), and Dame Kate Bingham. Receiving Imperial College Medals

were Professor Maggie Dalman, Professor Alison McGregor, Joanna Thompson, Dr Benita Cox, Jon Hancock, Nick Moakes, Professor Nelson Phillips and Jon Tucker.

Credit: Imperial College London on YouTube



The remaining audience when the mother of Monica Valenza, who sadly passed away this year, accepted a posthumous award in her daughter’s place

Imperial-CNRS

...continued from page 1

global collaboration; its establishment follows the founding of the France-Arizona Institute for Global Grand Challenges in 2021. The funding for the partnership is reliant on the ratification of the UK’s membership to Horizon Europe, the €95.5 billion European

research and innovation programme. UK membership to the programme was included in the Trade and Cooperation Agreement (or ‘Brexit deal’), however the European Commission is yet to ratify UK membership due to contention surrounding the Northern

Ireland protocol as part of the UK remaining separate from the EU in trade. Currently the UK government is guaranteeing all funding agreed through Horizon grants in 2022.

On the partnership, President Alice Gast said ‘This partnership demonstrates

Credit: Imperial College London/ Thomas Angus

Imperial’s commitment to strengthening our ties with Europe through improving mobility and providing opportunities for researchers to exchange ideas.

‘The CNRS-Imperial International Research Centre will bring about the highest level of collaboration between French and British scientists.

‘Working together we will make an impact globally for the public good in sustainability, health and resilience.’

Antoine Petit, CEO of CNRS, said ‘We celebrate the launch of this International Research Center (IRC), created jointly with Imperial College London. It is the first of its kind in the UK and in Europe, and only the second one in the world.

‘It will be a creative hub of cross-disciplinary collaboration and a solid platform for building new scientific projects between the CNRS and Imperial, addressing major challenges for the benefit of society. The Centre will also give even greater momentum to the long-term strategic partnership between our two institutions, acting as a bridge of knowledge and learning between France and the UK.’



NUMBER CRUNCH

Number of Students with Home/EU and Overseas Status at Imperial 2020/21

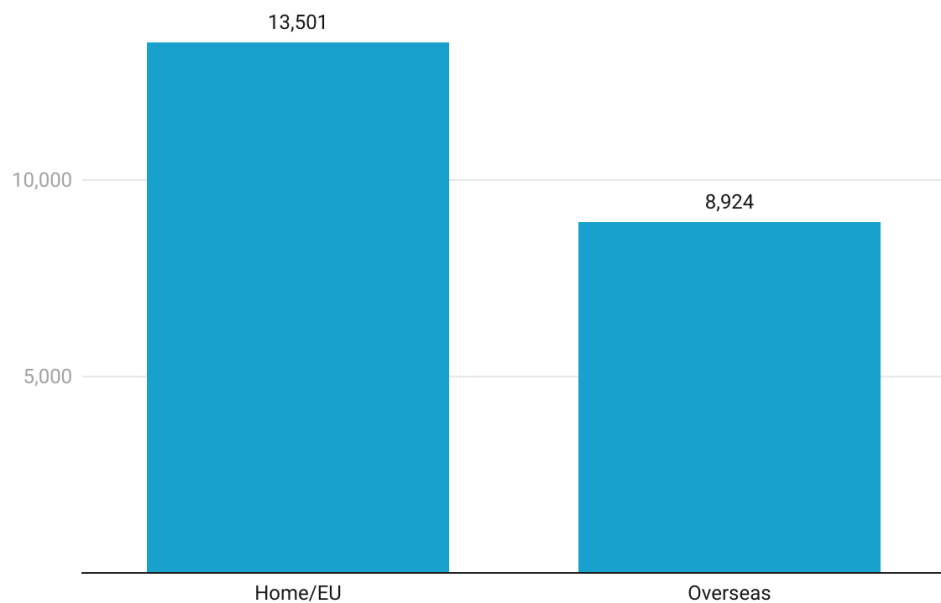


Chart: Felix • Source: Imperial College London • Created with Datawrapper

Total Value of Tuition Fees to Imperial 2020/21 (£)

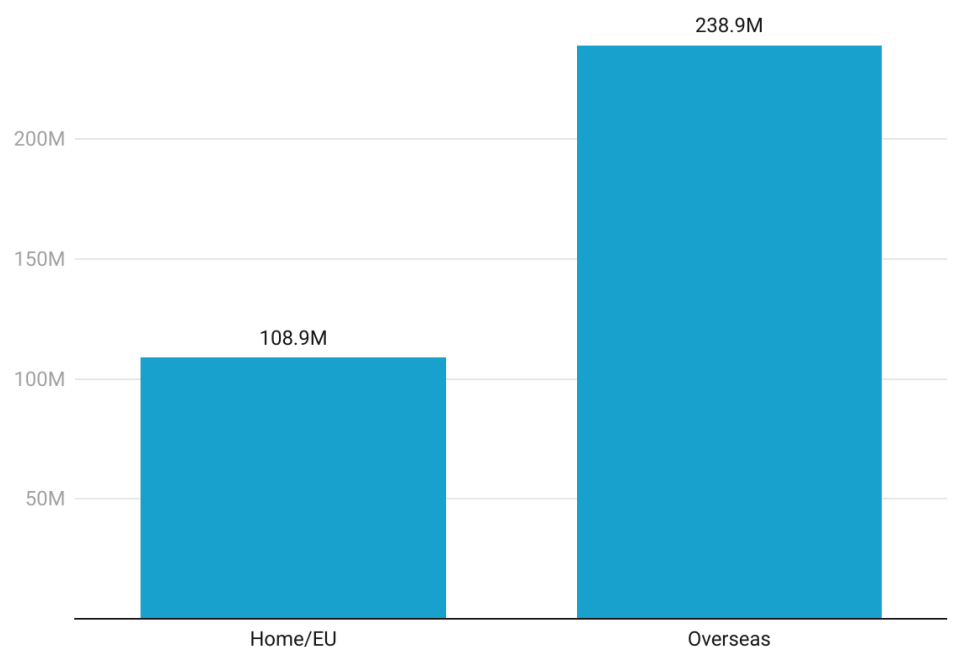
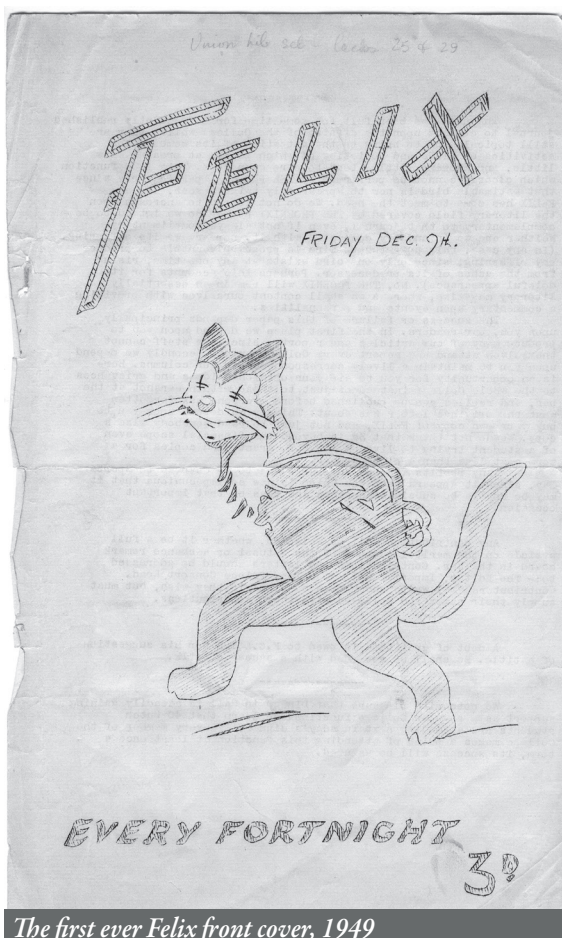


Chart: Felix • Source: Imperial College London • Created with Datawrapper

Felix turns 1800!
 ...well, 1800 issues, it's about 73 years old.



The first ever Felix front cover, 1949

On the 9th of December 1949 the first issue of Felix was published. As you can see to the left, it used to cost three pennies (or thruppence), whereas you lucky sods get it for free.

The first issue was a remarkable success, and all 600 printed copies sold out within the first morning of publication. As a result, 1000 copies were printed the next fortnight, and that is the same number that we print each week in 2022.

Issue 1 opens with a literary account of the most recent bonfire night, in which a reported 16 students were arrested and held in Chelsea Police Station after a bonfire was lit and fireworks were launched from in front of the Royal Albert Hall.

No reason is given for the name 'Felix', and to this day we still do not know why it was chosen. Credit for the name is given to an individual named F. C. Ewels, and the only reason we can think of is that it sounds a bit like 'Phoenix'.

Issue 100 arrives seven years later and little has changed in the layout. The same mascot graces the front page, however the paper has become a lot more flamboyant. The issue changes between pink, green and orange paper, and covers topics including poetry and comment. The first editor, E. M. Hughes, is STILL the editor seven years on.



The 100th Issue



Linstead resident dies of drug overdose



Lord Rothchild receiving his Fellowship from Sir Henry Fisher, Chairman of the Board of Governors. Lord Rothchild was also this year's Special Visitor - for his speech see page 3.

400TH ISSUE

Felix 400

A THIRD YEAR Electrical Engineering student was found dead in his bed on Monday 27th October. The student had been dead for sometime. He had been last seen during the previous Saturday on which occasion he looked to be in good health.

The police were called and an autopsy was carried out the following day. An inquest was subsequently held last Wednesday, in a proceeding taking only a few minutes. The coroner, after considering all the available evidence, stated that the cause of death was due to self-inflicted barbiturate poisoning while in state of depression.

The student, who came from Bradford and had been living in Britain for several years, was found to have been in the possession of large quantities of tablets which had not been obtained on prescription. Dr Carabine, the warden of Linstead Hall said it was not obvious how the student had obtained the drugs.

It was a great shock to Dr Carabine and many students in the hall to hear of his death. He (the dead student) had not outwardly shown any signs of depression, but was quite jovial although he had been observed to consume a fair amount of alcoholic beverage of late.

The student's funeral was held on Friday and a memorial service was held in Linstead Hall on Monday at which nearly 60 people attended. Friends of the student read passages from the Koran.

IC radio to get licence soon

IC Radio have received a letter from the Home Office regarding their application for a test licence. This follows a visit recently by GPO engineers to look into the technical aspects of setting-up a station on campus. They apparently are of the opinion that the idea is feasible.

IC Radio have been asked by the Home Office to look into various aspects of their design. A station and outside wiring of the halls of residences. This means for instance, including a means of varying output power - Steve Brightman's design did not allow for this - and the aerial positions on some of the halls need to be revised.

IC Radio do not seem to see any difficulties with complying with these modifications although it means, in the case of the aerials, a virtually complete new system has to be worked out after nearly a year of waiting.

There does not seem to be any substantial difficulties with regard to carrying out the suggestions put forward by the Home Office.

"It looks as if a test licence could soon be on the way".

Issue 400 comes around in 1975 and a lot has changed. The publication is all round a lot more newspaper-y, with a more official banner and a more strict layout. It's also free!

The Editor of the day chose to lead with the rather brazen story of a student dying of a drug overdose (something that would fall far short of the standards we hold today).

Events are advertised, profiles of important people at the College are written, and the year 2000 is described as "not too distant".

Issue 600 sees the arrival of some truly impressive Christmas-themed cover art and a revamped banner. This issue also includes a 'The Birth of Felix' section, where to commemorate the 600th edition the editor of the day took a look back at the newspaper's history... I swear we found this out after having already started this section.

Within the pages is a full pantomime, titled 'Brian in Wonderland', written and published by the Felix team.

By Issue 700 it's 1985 and black and white photographs are included in each edition.

Issue 850 includes fully-fledged porn! In an article entitled 'Meat Market', written about the industry of selling soft porn in London, there are multiple images of people having sex and masturbating. The '80s must have been wild.

Issues in the '90s consistently cover the students of the day protesting about the introduction of tuition fees.

Reading through the archive shows a culture of protest that seems to have been almost entirely lost today. Anti-fees, anti-war, anti-control, the students of Imperial College were for a good 50 years vocally and physically opposed to decisions made by College management, and the government of the day, which they didn't agree with. Arrests are reported as if they are a mere slap on the wrist (the Felix Editor is reported as facing up to 12 years in jail at one point, for not revealing their source for a story to the police).

You can see almost every issue of Felix in PDF form on the archive at felixonline.co.uk



No 600 Friday, December 18, 1981 Free!

600 issues and 32 years in



Issue No. 800 Friday 26th April 1988

- INSIDE**
- this 800th issue:
- 5 Libel and Blackmail
- 6 Science including Fermat's Phoenix.
- 7 Room with a View
- 8 Preview of Saturday's Rag Fête and all it has to offer
- 10 FELIX's 800 A mini feature on the life of The Cat and how College has changed with it.
- 16 Previews
- 18 Reviews
- 22 Letters

Report recommends reorganisation for IC Finance Section

Loads-a-money?

An independent report into the running of College finance has slammed the Finance Office for "working in an environment of continual crisis without adequate computer systems of sufficient experienced staff."

The Office, which deals with all College Research contracts and the payment of every Imperial College bill, has been having major problems throughout the year, with its new INTA-C computer system.

As reported in FELIX last term, the Finance Section lost a great deal of information when the computer went down for four days. They have since been trying to retrieve their records and sort out the system.

The report by Management Consultants Deloitte, Hopkins and Self states that there are "serious inadequacies" in the accounting package which the College installed in the Summer of 1986. It says that the operating procedures had been tackled by "extensive ad-hoc in-house development" and the users had modified the original package so much that it placed undue reliance on the College resources. It is no longer possible to use the supplier's knowledge to fix any problems that now occur with the package.

The problems with this system have resulted in bills going unpaid for nearly six months and suppliers refusing to carry on delivering to the College.

One source told FELIX that the Rectories Section had to send out "runners" with manually-drawn cheques in order to secure deliveries each day.

The report suggests that the College revert to a manual system for the rest of the financial year until the confusion has been sorted out. It also suggests that the present computing system should only be used for basic accounting functions until a totally new accounting package, more suited to the College's needs, is installed for the 1989/90 academic year.

One of its other recommendations is that "outside assistance" might be required in order to have the end of year accounts ready in time, which will cost the College even more money.

It says that the departments should take on more of the administration side of the finance system and recommends that a pilot scheme on Research Contract approval and Order Production should be initiated. The report indicates that this could be done by de-centralising part of the Finance Section: "a complement of 80 staff appears large to operate a computerised finance function in an organisation of Imperial's size". It suggests that some of the staff could be transferred out to departments once the current problems have been sorted out.

It is unknown, however, how much the recent events have cost the College. As well as paying for the original accounting package and the extensive Management Consultants report, a great deal of staff time has been spent trying to work the new computer system. Academics and administrators have also had to spend time chasing unpaid invoices through the Finance Section, and explaining to suppliers about the problems.

It is also unclear as to how much a new computer system that could fulfil the College's requirements would cost.

Fire in Linstead

Phew, what a scorcher!

Linstead Hall in Prince's Gardens was evacuated early on Wednesday morning after a resident's room was set alight.

Warren Duffin, a first year Mathematics student, raised the alarm when his coffee maker caught fire and spread to his curtains. The fire brigade was called but the blaze had already been put out using fire extinguishers.

Eye witnesses told FELIX that there was a great deal of smoke billowing from the room.

Mr Duffin's curtains were badly singed and his coffee maker was destroyed. Also many of his possessions were soaked by the fire extinguishers.



The award-winning student newspaper of Imperial College

"Keep The Cat Free" Issue 1,450 felixonline.co.uk

22-01-10

The Sound of 2010

felix's alternative guide to who you'll be listening to this coming year, see page 14.

This week....

University Challenge: Imperial double up Edinburgh News, Page 2



ICE: The way forward for environmental justice Science, Page 8



A blogger's guide: How to pretend to know about film Film, Page 17



Brand New speak to our glorious Editor-in-Chief Music, Page 19



Boris Johnson squares up
The Mayor of London visits Imperial to open Prince's Gardens this week, see page 3



Issue 975 15th October 1993



Did you tiddlywink with Rag down Oxford Street last Saturday? Fancy playing Monopoly tomorrow? See page 21 for more details

Felix 975

Board all the choosy Valentines fii Cezanne exhibition at the Tate Skating in the Royals: The truth about skaters and cyclists



Issue 1049 February 9th 1996

Tories plan to abolish student grants

BY MIKE INGRAM

Government plans to abolish maintenance grants for students and impose a 'graduate tax' have been revealed this week. The proposals would scrap the existing system of grants and loans in favour of a combination of loans week by the Conservative Political Centre, would not affect funding of tuition fees. They aim to release the £1.7 billion spent annually on student financial support, which amounts to about 30% of the total spending on higher education. This money

at in Australia and New Zealand for several years.

The scheme is intended to be funded by the private sector, with money from banks and pension schemes. This could potentially cause problems for the government. Last year, the bank

may be cautious about investing such large sums of money.

As a result of this, the plan's authors recommend that the maintenance loans scheme should first be tested using post-graduate students as guinea pigs for the new funding in order to

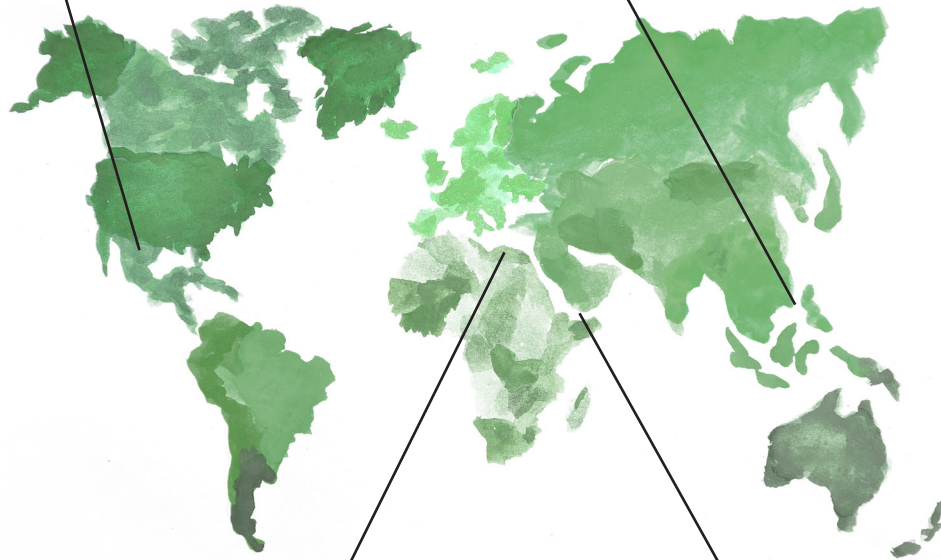


WHAT HAPPENED...**...in the world this week*****Eleven journalist killed in Mexico in 2022***

The total number of journalists killed this year in Mexico continues to rise, as two more were gunned down in the town of Cosoleacaque on Monday. Mexico, the most dangerous country for journalists outside of a war zone, has experienced a monumental surge in the murder of journalists since the incumbent president Andrés Manuel López Obrador took office three years ago, and many critics condemn his handling of what has become a catastrophic and sustained attack on the press. López Obrador has on multiple occasions publicly attacked journalists who he sees to be against his nationalist regime. Many cite these attacks as partially responsible for the upsurge in the murder of journalists.

US moves to back Taiwan

With no announcement, the US State Department has removed a line from its website stating that it does not support Taiwan's independence from China, in a move described by Beijing as 'political manipulation'. The CCP has long claimed Taiwan as part of China under its 'one China' vision, with many countries around the world intentionally occupying a grey area where they neither support nor condemn this claim. China has recently become more assertive towards Taiwan, sending unauthorised jets into its airspace and vowing to 'take it back' with force. In 2021 Lithuania broke normal tradition by opening the 'Taiwanese Representative Office in Lithuania', notably using the name Taiwan rather than Taipei, as used by many other countries. This was met with great distaste from the CCP.

***11 Egyptian troops killed by militants***

The Egyptian military said last Saturday that at least 11 of its troops had been killed in an attack on a water pumping station close to the Suez canal. The militants launched a surprise attack on the station and then fled to the desert region of northern Sinai, according to two residents of the region who spoke to *The Guardian*. In 2013 the military overthrew the elected Islamist government and have been fighting an Islamic State-led insurgency since.

UN conference as fundraiser to mitigate oil spill

The UN is to hold a donor conference in the hope of raising \$80 million to pay for the mitigation of a potentially catastrophic oil disaster. The Safer oil tanker has sat stationary off the west coast of Yemen since 1987, when it was converted from oil tanker to stationary storage facility, with a capacity of around three million barrels. The war in Yemen has led the Houthi rebels, who consider the tanker their property, to neglect to keep the ship in good condition, and many now fear that an oil spill, or an explosion, is imminent. The UN aim to use the funds raised to offload over 1.14 million barrels of oil that have sat on the ship for years. A spill could rank as one of the worst oil disasters of all time.

... in this issue's year (1800)***UNITED KINGDOM***

Herschel discovers infrared radiation

IRELAND

The Union with Ireland Act is passed, making Ireland part of the United Kingdom and abolishing the Irish Parliament

NORTHERN EUROPE

The Second League of Armed Neutrality is signed by Russia, Prussia, Sweden and the Denmark-Norway Union

INDIA

The Battle of Malpura occurs between the kingdoms of Jaipur and Gwalior

FRANCE

Napoleon becomes First Consul of France by plebiscite

THE UNITED STATES

Congress holds its first session

FRIDAY 13TH MAY 2022

SCIENCE

Edited by: JAMIE JOHN
CARA BURKE
MAREK COTTINGHAM

Encryption: how it works, why we should care, and what we can do

Marc Richly Tech Writer

Over 2000 years ago, the Roman dictator Julius Caesar developed a method to ensure that only the recipient of a message receives it. Often enough others were a little too interested what the dictator had on his mind, so the Caesar cipher was born (ABCDE... becomes e.g., CDEFG...). It has since fallen out of favour due to the ease with which it can be cracked, but was used as recently as 1915 by the Russian army, whose soldiers struggled to use more advanced ciphers. Nonetheless, the Caesar cipher is still a particularly famous example of an encryption technique.

Today, encryption is more relevant than ever – most of us use it daily without ever realising it. This article is the first in a three-part series examining its uses in digital communication. It will show how encryption in digital communication works. The second article will address why we should care about encryption, and the last one will provide a how-to guide on securing your digital life.

To understand different encryption types, imagine standing with many other strangers at a river. You want to tell your friend who is standing on the other side of the river something confidential – you have failed your last exam. In all scenarios we must look at two things: Who can access the information (let us call this content data), and who can see that a communication takes place (let us call that meta data).

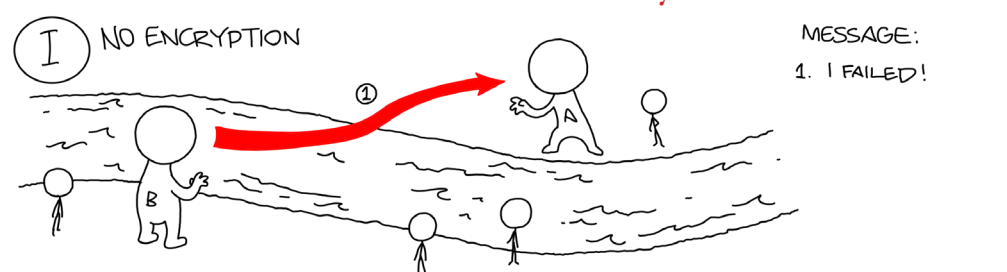
Meta data is very valuable for analytics operations in companies. It can be used to identify close contacts and offer personalised advertisements (your friend bought a MacBook so you may also be interested). Governments and security agencies can use meta data to identify contacts of criminals and other persons of interest.

AUTHOR'S NOTE

So, why should we care about encrypting our digital lives? Look out for my second article next week to find out! In the meantime, feel free to reach out on LinkedIn or email: mar21@ic.ac.uk

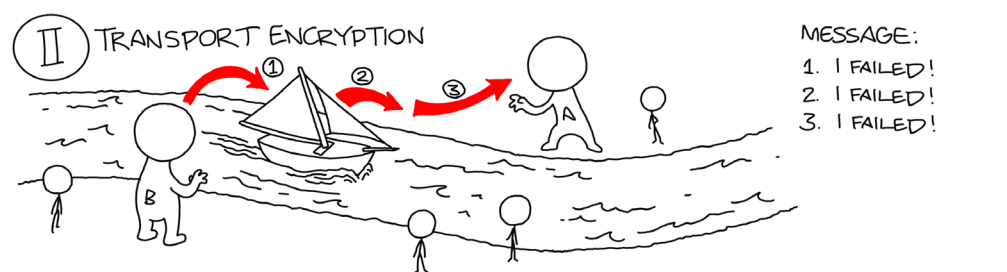
1) No encryption

Your first option is to simply shout the message across the river. Other people can see that you have communicated with your friend (meta data) and can easily understand what you say (content data).



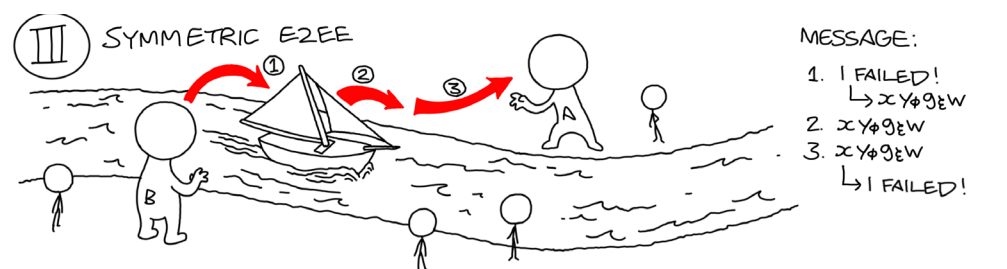
2) Transport encryption

Second scenario: You whisper to a fisherman on your side of the river that you failed the last exam. He rows to the other side of the river, and passes the message to your friend by whispering in his ear. This is already more secure, but two problems arise: You must trust the fisherman that he is not telling anyone else (he has access to the content data), and other people still see that you have transferred a message (meta data). This is most commonly used to encrypt emails.



3) Symmetric encryption and End-to-End encryption (E2EE)

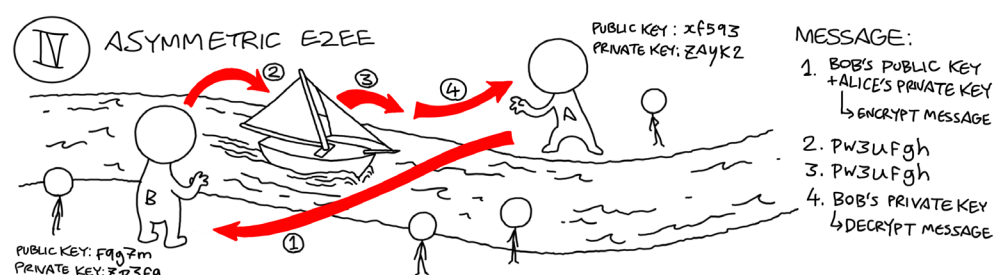
Third scenario: as you and your friend are both nerds, you have developed a unique language. You either shout over the river or use the fisherman – in both ways only people who know the language can understand you. This means your message itself is secured (content data). People still see that you send a message to your friend on the other river side (meta data), but you do not have to trust the fisherman anymore. This form of encryption is called symmetric encryption, where both sides use the same key (here the secret language) to transfer information. The new risk is now that someone cracks the code and can understand the message, so let us look at the next level of encryption.



People still see that you send a message to your friend on the other river side (meta data), but you do not have to trust the fisherman anymore. This form of encryption is called symmetric encryption, where both sides use the same key (here the secret language) to transfer information. The new risk is now that someone cracks the code and can understand the message, so let us look at the next level of encryption.

4) Asymmetric encryption and End-to-End encryption (E2EE)

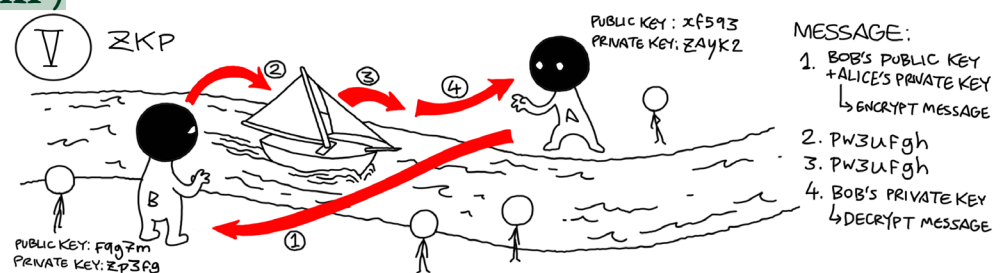
Fourth scenario, you both have created two mathematical keys, one public, one private key. Everyone shares their public key openly, while keeping their private key to themselves. When you have the public key of your friend, you can encrypt a message, shout it over (or send it with the fisherman), and only your friend can open the message with their private key. Your friend's public key and private key are mathematical connected, but it is virtually impossible to guess the private key from knowing the public key.



Asymmetric encryption is a standard in encryption, symmetric encryption is not considered secure anymore. Asymmetric encryption is used by WhatsApp, https websites, and bitcoin.

5) Zero-Knowledge Principle (ZKP)

Fifth scenario, you do as in scenario four, but this time you and your friend wear masks so nobody knows who you are. In this way, the information (content data) is secure, and one can see that a message gets transferred from the one river side to the other one, but it is impossible to tell who communicates with who (meta data). This form of digital communication encryption is considered a gold standard. The most prominent communication service that offers ZKP in addition to E2EE is Signal (messaging app like WhatsApp).



This form of digital communication encryption is considered a gold standard. The most prominent communication service that offers ZKP in addition to E2EE is Signal (messaging app like WhatsApp).

Imperial Lates: The Brain

Lorena Mejias Martinez Science Writer

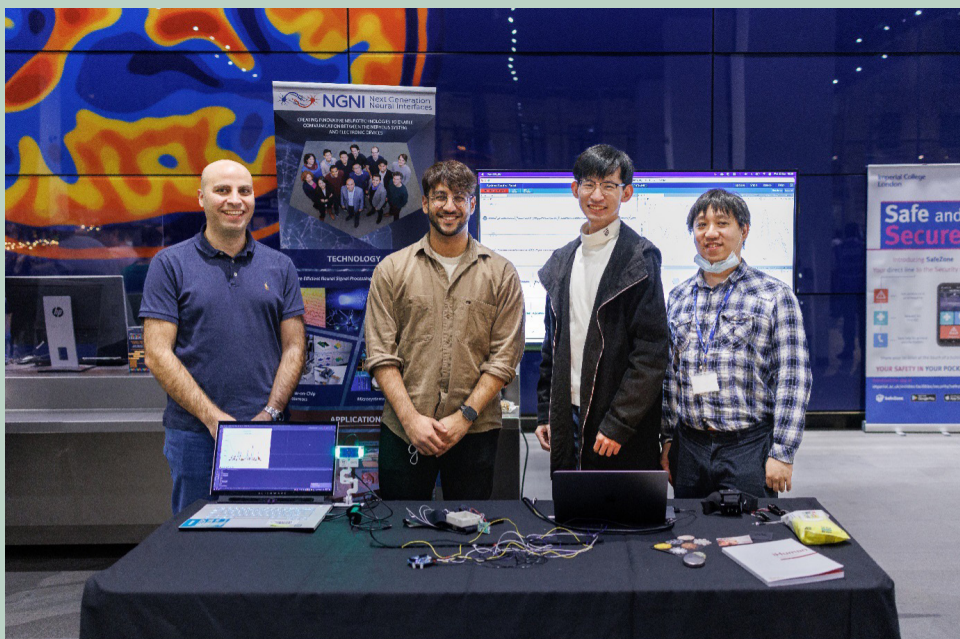
At the end of last term, the College resumed its 'Lates' exhibition series, after a two-year hiatus due to the COVID-19 pandemic. The exhibitions are based around a theme, and aim to introduce visitors to the groundbreaking research at Imperial, with hands-on demos, live experiments, talks and workshops. I went along to the first post-pandemic event, entitled "Imperial Lates: The Brain".

The stalls at this temporary exhibition covered a wide range of topics, ranging from controlling technology with your mind to neuron-inspired string art.

Photo credits to Brendan Foster Photography / Imperial College London

BRAIN GAMING

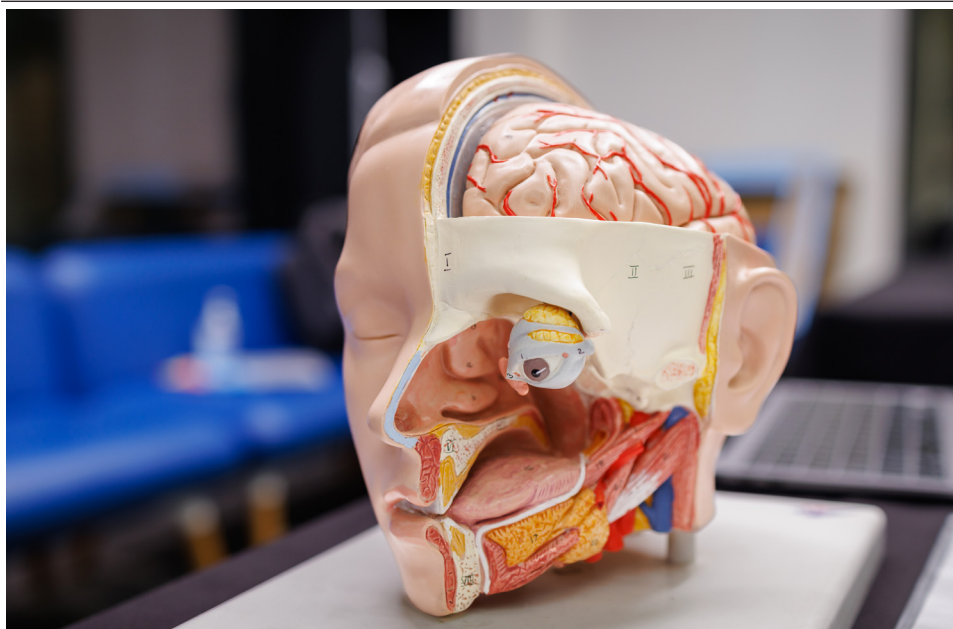
From art to science, 'Brain Gaming' is a research project conducted by Next Generation Neural Interfaces Lab, which connects technology to our nervous system. This involves the development of headbands able to decode what frequency you are looking at on a screen. A Master's student involved in this project showed us squares displayed on a monitor, located at each corner of the screen and flashing at different frequencies. He explained that looking at the square flashing at 7Hz sent a signal to your brain equal to 7 Hz, which is then picked up by electrodes on the headband. Currently, the lab is working on an algorithm that decodes which frequency you are looking at, which could help control a video game with your mind or be used to control a mouse on a computer.



THE WELLBEING OF LIFE

The Wellbeing of Life was an interactive collaboration with the public to determine which factors most impact mental health at different points in life. Conducted by The Study of Cognition, Adolescents and Mobile Phones (SCAMP), the public were invited to write down factors they thought most affected mental health on cards and tie them up using string on a net which served as a timeline spanning from youth to old age. Examples included sexuality, university, and pressure to find a life partner during early adulthood, to fear of being alone and toxic family relationships in older age.





DESIGNING FOR DEMENTIA

With an ageing population, limited options for point of care treatments, and no cures currently available, the development and design of novel technologies to help dementia patients is essential. Patients are often left alone, isolated, and unable to receive the care they require, leading to preventable hospital admissions. The Care Research & Technology center, based at Imperial, looks at human-centered design, working directly with patients affected by dementia, clinical care teams, and software engineers. The team have developed a combination of off-shelf devices and in-house technologies. Passive devices include those able to track a patient's behavior and health, gathering data from home, such as devices that take temperature and test for UTIs. This data travels to clinical dashboards, an app designed by the software engineers which logs and monitors patient health daily, and is then reviewed by the monitoring team. Interestingly, the data is directly available to researchers, a unique data retrieval system that takes information straight from the patient's home rather than isolated from clinical trials in a lab environment. But, it's not only about the science. From the participants perspective, there is someone there to check in on them, allowing them to feel cared for and reducing the isolation many older patients feel.

NEURON STRING ART

The neuron string art station, led by scientists at Imperial, researched how neuronal death leads to a loss of brain connectivity and how we can target this process to treat dementia. Laurie O'Garro, a string artist and teacher at the stall, described how she runs string art workshops for both children and adults to escape the distractions of daily life. In this activity, people were guided to stitch into cardboard pieces displaying the photo of a brain. Laurie described how the lines stitched symbolized the brain of patients with dementia, with sections of tightly woven string gradually distancing, depicting how thoughts would become more sparse and harder to connect.

TALK: THE SCIENCE BEHIND GAMBLING ADDICTION

Imperial invited an expert panel to discuss the unique nature of gambling disorders, and how the interplay between biology and societal impact leads to a disease that is hard to characterize. Among the panelists sat Dr David Erritzoe, a consultant psychiatrist whose research team is attempting to determine the neurobiological basis of gambling addiction by mapping the brain to develop novel treatments. Dr Erritzoe recalled an experiment conducted on Paul Merson (former professional football player and gambling addict) which showed evidence that Merson's brain responded more to gambling images than those depicting food, family, or nature. In effect, they explored how gambling adverts appear to act as triggers, with even the anticipation to an act of gambling increasing the levels of dopamine in the brain, the "feel-good" hormone associated with feelings of reward.



SCIENCE

The evolution of the biotechnology industry

► *Staff Writer Wang Guo reflects on the growing sector that has rapidly evolved, and ponders its future*

Wang Guo Staff Writer

Biotechnology is defined as the application of biological systems or processes to develop products beneficial for humans. The biotechnological industry surged at the beginning of the 1970s as a result of the movement of highly qualified researchers from the academic field to the corporate world. The industry is international and depends mostly on networks involving universities and financial companies. Universities are responsible for carrying out field research and creating knowledge that can then be used for the development of new technologies by biotechnological companies. Meanwhile, hedge funds, private investors or any other financial organisation provide them with the capital necessary to operate. The companies usually combine research, manufacturing and distribution. However, a new type of company has appeared – the dedicated biotechnological firm (DBF) – which acts as a bridge between researchers and the ‘economic part’ (investors, Retailers, etc.) That is to say, DBF focuses on manufacturing.

The strategies that current biotechnological companies apply are manifold in such a competitive industry. Johnson & Johnson (who you might have heard of from their COVID-19 vaccine) is a titan in the biotechnological industry, with revenue of slightly over \$91bn in 2021. This corporation follows a decentralised model, giving great autonomy to the different branches they have distributed across the globe. This allows them to take fast decisions and tailor their products to the local population. Also, Johnson & Johnson offers a wide variety of products from daily-use shampoos to innovative cancer therapies. However, the diversification of both products and authority can devolve into a lack of recognition for, and specialization within, the company. On the other hand, we have the Chinese company Shanghai Pharmaceuticals, which earned over \$25bn in 2021. Shanghai Pharmaceuticals is the second biggest pharmaceutical company and the number one distributor of imported

drugs in China. In contrast to Johnson & Johnson, Shanghai Pharmaceuticals follow a centralised and vertically-integrated model. This is seen as more traditional, which is not necessarily bad. A clear and solid hierarchy may help create better specialisation and organisation, as everyone knows their position in the company. This has allowed Shanghai Pharmaceuticals to take over a great portion of the Chinese pharmaceutical industry. However, there are also issues with lack of autonomy and alienation, deterring innovation and discouraging game-changing people from joining the company. Also, a key difference between Shanghai Pharmaceuticals and Western biotechnological companies is that the former also sells Traditional Chinese Medicine (TCM). This approach allows them to forge a strong identity among the Chinese population and distinguishes them from Western companies in the Chinese pharmaceutical industry.

These two companies were founded before the 21st century, but many biotechnological companies have emerged recently. Many are established with the guidance of venture capitalists companies that provide them with resources and guidance. One of the most outstanding examples of this is Moderna, founded in 2010 under the hand of Flagship Pioneering. The objective of Moderna from the very beginning was to develop innovative drugs using messenger RNA, which is a molecule essential to synthesis of proteins in the cell. This focus on just one area of research allowed them to out-perform their generic competitors and forge a reputation.

However, it also narrowed their consumer range, and this was reflected in their numbers. In 2018 and 2019, Moderna was billing \$113 and \$60 million, respectively. Then, with the boost of the COVID-19 vaccine, its revenues rose dramatically to \$803 million in 2020. Moderna is an exception to the many cases of relatively new biotechnological companies that started, exploded and then plummeted in a short time. We are living in an era when the biotechnological industry is more volatile than ever before, because

the research is rapid, adding new areas of investments but also eliminating others. Some companies do not have the capital or infrastructure necessary to adapt to these changes and fail. The volatility of the biotechnological industry is the perfect playground for experienced speculative investors, but not for beginners. Even if the novice investor wants to be involved in the biotechnological industry, they should focus on well-established brands like Johnson & Johnson instead of predicting the next ‘unicorn’.

There are two main tendencies currently in the biotechnological industry. First, traditional drug development targets medicines that are more effective for the majority of the population. This will change in the future due to the improvement of genetic sequencing and engineering drugs. Biotech companies will start focusing on providing drugs tailored to the genome of the individual, increasing exponentially the effectiveness of the

treatments. However, this will also mean the halt of mass drug production and a radical change in research methodology. Also, it will be a must for biotechnological companies to accept and finish orders quickly, so decentralised models will probably be more suitable. Secondly, the world is facing a global food scarcity problem because of the strengthening of crop pests and the depletion of the international reserves of phosphorus, essential to make fertilisers. Therefore, we have to create more resistant and efficient crops to satisfy the demand of a growing population. Biotechnological companies know this and they are investing more and more resources in genetically modified crops and other solutions. Thus, the farming industry will be more related to, and dependant on, biotechnology, whose volatility might be spread to the farming industry too. These are not more than suppositions though.

Photo credit: Up:padWizard, CC-BY-SA-4.0



FRIDAY 13TH MAY 2022

ARTS

PROBABLY WORTH MISSING
 BY ALEXANDER COHEN
 THE FOREST AT HAMPSTEAD THEATRE
 DID NOT EXCITE. page **12**

Edited by:
 ALEXANDER COHEN
 ALEX JACKSON

Musical**A deconstruction of the golden age of musical****Oklahoma!**

★★★★★

Where? *The Young Vic*
When? *Until the 25th of June*
How much? *From £10*

Reviewed by **Alexander Cohen** Arts Editor

The romanticism of “America”, the glint in the eye of 20th century immigrants, the shining paragon of democracy and civilisation where the streets are paved with gold is decimated in Jordan Fish and Jordan Fein’s production of *Oklahoma! The Musical*, often heralded as the jewel in the crown of the golden age of American musicals, is on the surface a jovial affair. Toe tapping barn dances, cowboys, and little houses on the prairie, on paper it commemorates the founding of the state of Oklahoma. It is therefore a declaration of American identity, something that would have struck a chord in a world war ravaged world in 1943 when it first premiered on Broadway.

But here the horrific underbelly of the musical is ripped open. Out spill its guts, the violence, blood, and terror coiled at the heart of America like a maggot feasting on decay. A transfer from America where the Tony award winning production premiered, directors Jordan Fish and Jordan Fein do away with the garlanded end stages of West End or Broadway theatres. Instead, the chameleonic Young Vic stage has been transformed into a wood panelled barn with audiences sat either side of the unraised stage. The whole production has a stripped back aesthetic with even the orchestra-



Liza Sadovy and Marisha Wallace in Rodgers and Hammerstein’s *Oklahoma!* at the Young Vic.

tion reduced to an on stage eight-piece band. The horror pregnant within the musical, ignored in traditional productions, is laid bare as a consequence.

Arthur Davrill’s Curley starts as a boot strapping everyman in pursuit of the love of Anoushka Lucas’ witty Laurie, serenading her and the audience with typically heartfelt rendition of ‘Oh, What a Beautiful Morning’. In every other production he is the American hero, unquestionably good, handsome, and eloquent. But peeling back the veneer layer by layer reveals a predator who manipulates and pollutes the room with his toxicity.

Credits: Photo/Marc Brenner



Stavros Demetraki as Ali Hakim in *Oklahoma!* at the Young Vic.

It is all there in the original; the unnerving relationship between Curly and Jud, a farm hand who is also in love with Laurie, is usually glossed over with pageantry. ‘Pore Jud is Dead’ is here marked by a devastating use of lighting on behalf of lighting designer Scott Zielinski. The room is plunged into total darkness. There is nothing but the language, the horror and cruelty of a bully, the trembling fear of his victim. Patrick Vaill’s Jud is an alienated loner. Whilst other productions celebrate his ostracism from the community, this one deep dives into his despair and his tragedy.

The creative team balance the tonal shifts perfectly. The dialectics of darkness and frivolity coexist in all their terrible beauty. Laurie’s astoundingly choreographed dream sequence is a Lynchian nightmare with dancer Marie-Astrid Mence navigating a labyrinth of absurdist images. A lone electric guitar wails over her like a banshee, distorting the musical leitmotifs. Evoking Jimi Hendrix’s Woodstock rendition of the ‘Star-Spangled Banner’, it is not just the music that is distorted, but the ideology the music stands for.

The second the sequence is over, the cast spring into an uncannily upbeat hoe-down. The shock lingers, painfully juxtaposed with the merriment. Daniel Kluger must be applauded for injecting the score with devastating electricity; his music is brought to life by a powerful cast of singers. Marisha Wallace particularly shines with her astute take on Ado Annie, her ‘I Can’t Say No’ receiving a rapturous applause from the audience.

This production a far cry from the *Oklahoma!* that once was. How can it be the same again?

ARTS

Theatre

The Forest: Zeller returns to his roots

The Forest

**Where?** Hampstead Theatre**When?** Closed March 12th**How much?** From £15Reviewed by **Alexander Cohen** Arts Editor

After writing and directing an Oscar winning adaptation of his play *The Father*, Florian Zeller returns to his theatrical roots with a new play premiering at the Hampstead Theatre. As with his other offerings, *The Forest* is a compelling psychodrama exploring the breakdown of a family dynamic. In *The Son* it was divorce, in *The Father* it was dementia, now it is infidelity that drives a nameless doctor further into a web of lies as he becomes entangled in an increasingly fraught affair behind his wife's back.

Perhaps more so than his other plays, *The Forest* pushes the medium of theatre to its limit. Zeller and director Jonathan Kent pepper surreal elements throughout the play that could have been lifted from a David Lynch film. Some scenes are mirrored, repeating themselves but making slight adjustments in dialogue

or character to make the audience question what is real. Images and symbols double, again repeating with slight adjustments to add to the eeriness. The appearance of a nameless 'man in black' is pure Lynchian menace. Played by Finbar Lynch (probably of no relation to David Lynch), he appears as a manifestation of the protagonist's unspeakable guilt, constantly haunting and terrorising his psyche. He even retroactively inserts himself into past scenes through the play's brilliantly jumbled chronology. Zeller treats his audience as psychoanalysts; the play is sitting on our couch in need of analysis. We are not passively watching, but rather actively joining the dots to map out the tragedy and the subtle terror as the play unravels. Only theatre can achieve this, when you are in the room face to face with the drama. What results is a lingering sense of menace creeping in the background of each scene that slowly culminates in a grisly finale.

Zeller and Kent play with theatricality by also splitting the nameless protagonist into two parts played by Toby Stephens and Paul McCann. The decision keeps the audience on its toes and makes their descent into a cerebral abyss more captivating. But it is Gina McKee as the nameless protagonist's wife who steals the show.

Her performance is deeply layered with Pinteresque tension, never revealing whether her character knows about her husband's infidelity. Talking of Pinter, there is no better place to pay homage to the Nobel prize winning playwright with her elongated silence (a 'Pinter pause') in the final scene than the Hampstead Theatre where many of his plays premiered. Pinter himself decreed that there was a 'torrent of language' in each of his silences. The same can very much be said for Zeller.

Credits: Photo/The Other Richard

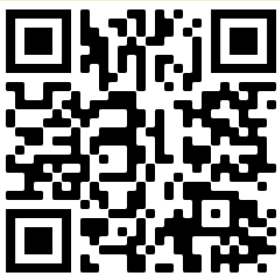
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FRIDAY 13TH MAY 2022

ENVIRONMENT

Edited by: MONAMI MIYAMOTO
MARIE MORI
HAHYUN LEE

Silent Running: a tale of plants, robots and anxiety

Hahyun Lee Environment Editor

In the world of film, this year's February marked the passing of Douglas Trumbull—one of the greats of visual effects, he was the force behind *2001: A Space Odyssey*, *Blade Runner*, and *The Tree of Life*, among others. He was also the director of the 1972 environmental sci-fi cult classic, 'Silent Running'.

'Silent Running' is a cosy, charming, and eco-conscious movie, about our botanist protagonist, Freeman Lowell, who spends his time onboard a spaceship orbiting Saturn, tending to his crops and wildlife until Earth becomes habitable again. When the spaceship receives orders to blow up the gardens, his crewmates see no problem and oblige, to Lowell's dismay. Along with three small robots, played apparently by bilateral amputees, Lowell does what he

needs to (to put it lightly), to protect his space garden from the powers that be—driving home a, if slightly tinged with the cynical, kumbaya message about the need to protect our plants. Expectedly, the visual effects are great, adding a hazy warmth throughout the entire runtime, particularly with the robots, who give surprisingly emotive performances—a legacy continued in films like Pixar's 'WALL-E' and Wallace & Gromit's 'A Grand Day Out'.

The release of the movie found itself in the middle of a popularity boom for the environmental movement. The expansion of the movement in the 60s and 70s, at least in the United States, initially sparked through works like Rachel Carson's 'Silent Spring', led to the creation of organisations such as the United States Environmental Protection Agency and Greenpeace, as well as the signing of laws like the

Endangered Species Act of 1973, and even the founding of Earth Day in 1970.

This period in the West was a time of increased awareness on an increasing scale: through their televisions, members of the public were exposed not only to the world's largest spectacles (The Beatles on The Ed Sullivan show), but also to its war crimes (Vietnam). Earth Day itself was inspired by news coverage of the 1969 Santa Barbara Oil Spill as well as the 'Earthrise' photograph from Apollo 8, which in tandem produced a collective fervour on the ground, with the first Earth Day happening across cities almost entirely through self-organisation.

The combination of anger and awe seemed to be the driving force of this type of activism, and in many ways, are the two conflicting emotions in 'Silent Running'. Throughout the film, scenes of Lowell going about his business whilst growing frustrated at his inconsiderate crewmates are interspersed with unhurried scenes of the spaceship, in all its elegance, glacially orbiting Saturn, accompanied by ballads with titles like 'Rejoice in the Sun' sung by folk singer Joan Baez. The final moments of the film reinforce those tranquil scenes, ending the runtime on a seemingly hopeful note. However, as a viewer, it is difficult not to read something melancholic and wistful in that ending too, considering some of the bleaker moments scattered across the plot until this point.

And such is the story of environmentalism too. Often, engagement with topics of climate change or the biodiversity crisis have their conclusions in despair and feelings of hopelessness. The term 'eco-anxiety' has been coined to describe the distress caused by climate change, which has been found to be more prevalent in younger age groups, and even more so for those in the global south, according to a literature review from last year. Mala Rao and Richard Powell, writing in the 'British Medical Journal', suggest, 'the mental health impacts of the climate crisis have



"silent running"
STARRING Bruce Dern with Cliff Potts · Ron Rifkin · Jesse Vint
Original Script by Peter Schickel · Original Music Composed and Conducted by Peter Schickel · Written by Debra WASHBURN & MIKE CIMINO and STEVE BOCHCO · Directed by JOAN BAEZ · Produced by MICHAEL GILTSOFF · A MICHAEL GILTSOFF/DOUGLAS TRUMBULL PRODUCTION
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profound implications. Psychological responses, such as conflict avoidance, fear, helplessness, and resignation, are serious barriers to collective action to mitigate further global warming...

It is clear that this type of anxiety can become encompassing and paralyzing for the engaged citizen. However, if we are to recreate the enthusiasm of environmentalism in the 60s and 70s, we require our 'Earthrise', as much as our Santa Barbara Oil Spills, as fear of something disappearing only matters if that something is worth protecting. 'Silent Running', even with its backdrop of destruction and isolation, finds time to have its moments of beauty and quietude in nature, not just as moments of respite, but of justification for itself.



PUZZLES

Easy Sudoku

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

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

Normal Sudoku

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

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

Difficult Sudoku

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

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

Shikaku

			8		2					
21				4					24	
					4					
			2							
										6
						5	4			
							2			
4	2							4	4	
3		36				4				
			2							
8						4				
										12
				16						
							6			
		40								
			10							35
					2					
				3		3				

Points

Easy, Normal, Difficult sudokus 2, 3, 4 pts each
 Shikaku 2 pts

As always, you can send your solutions to fsudoku@ic.ac.uk before Wednesday at 12:00!

Sorry

No leaderboard this week
 -again , sorry we all have
 exams :/

Rejected proposals from the ‘Sustainable Transport in London’ competition

Pigeon Shoes

Using the natural world to our advantage is a sphere of thought full of brilliant ideas for reducing our impact on the planet. Making shoes out of taxidermied pigeons isn't one of them. Whilst the panel of judges admitted that there probably were too many pigeons in central London, they firmly rejected the idea that excess pigeons could be described as 'spare' and the entrant's reasoning that developing the shoes would count as 'utilising otherwise wasted material'. PETA caught wind of the idea before it was announced to the public and made a public statement against the design, stating that leaving the wings protruding from either side of the shoe was 'abhorrent, and impractical anyway' and that making each shoe into the shape of a giant pigeon foot was 'science going too far'.

Excrement Powered eBikes

The contestant was not wrong when stating in their design plan that thermal energy is wasted when human excrement is simply flushed away. The judging panel reached an impasse, however, when considering Stanley Jones's plan for eBikes powered by the heat

of human excrement. Judges turned their heads away from the paper in disgust as they were shown a crudely drawn diagram of a portly man sitting naked atop a regular bike frame, with both of his outflows securely fastened to a modified seat. Chief judge Simon Heather said that the look of pleasure intricately drawn on the man's face 'took away from any sincerity in the design' and that it was 'clearly what this contestant has put most of his energy into', rather than the sustainability of the design. Others shown the design pointed out that the 0.7 tonne biowaste reactor necessarily attached to the rear of the bike presented both ergonomic and financial issues.

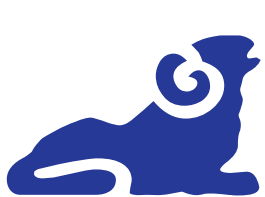
Landmark-to-landmark Human Cannons

For centuries circuses across the globe have made use of the human cannon as a feature of intrigue and human capability, drawing crowds from miles around. The reaction to Lesley Aldern's Shard-to-Primrose Hill carronade could not have been further from the status quo. Lesley, who achieved a D and F in GCSE maths and physics respectively, submitted plans for

a cannon to be installed on the top floor of the shard and at the highest point of Primrose Hill to provide 'quick and easy transport across London at just the cost of a pound of gunpowder'. Asking Lesley about the plans, judges quickly found that a safe landing was not something that had been considered pre-submission, when questions about a net to land in were met with repeated shrugs.

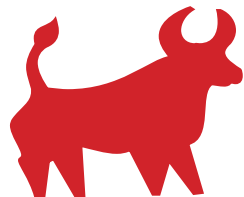
Trans-Thames Trebuchet

Hot off the back of laying waste to the human cannon idea, the judges came down on the similar, yet markedly worse, idea of a trebuchet to launch people across the Thames. "Aside from the blatant health and safety issues, we already have bridges for this. There's, like, ten bridges across the Thames through London that allow pedestrians to walk across. This idea would save people about a one minute walk. The only idea more stupid than this would be a private company investing millions in a cable car that carried people back and forth across the Thames with no purpose".



ARIES

This week you play golf with your dad and score below pa



TAURUS

This week you realise last year's meth phase doesn't even compare to this year's heroin phase



GEMINI

This week the stairway to heaven turns out to be littered with beers bottles and used condoms



CANCER

This week you read To Kill a Mockingbird and learn nothing transferable for grouse hunting



LEO

This week you're one of those people who won't eat any bread other than sourdough



VIRGO

This week you tailwhip your scooter and kneecap a toddler



LIBRA

This week you're called out for gaitkeeping goosesepp



SCORPIO

This week you play Flappy Bird for nine hours



SAGITTARIUS

This week you are instrumental in Ukraine not winning Eurovision



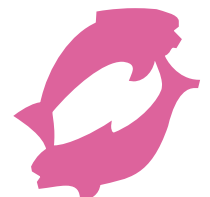
CAPRICORN

This week you are confused by the debate, as you clearly prefer rowing



AQUARIUS

This week you vote to rename the Huxley Building to Nerd Central



PISCES

This week you still think people care about your Wordles

SPORT

Edited by: AMANDA BARDEN
KONRAD HOHENDORF

Fulham FC's bid to extend their stadium into the river Thames has caused a bit of a row over rowing...

Miranda Bass Imperial Student

The first Sunday of this April saw The Boat Race return to the Championship Course (Putney to Mortlake), after two long years. Delightfully, we saw almost pre-COVID era crowds come out to watch the race which was first held on the River Thames in 1836. However, the 167th Boat Race may be one of the last on its traditional course, according to new plans by Fulham FC to build an 80m pier as part of their Riverside Development.

The pier idea was first put forward in August 2021 and a post on their website details "it is intended that a pier is created" to "connect the Riverside Stand development to central London."

"The proposal is that the river bus service from the Riverside Stand will form part of the existing network of river bus services operating along the Thames, providing river access for leisure and commuter use to other parts of London as an alternative to road and rail services."

However, this has been met with extreme backlash from the local community, on the basis this would completely prevent any water sports on this stretch of river – threatening

many schools and clubs, including our own Imperial Boat Club. On race day, many of the boat clubs and pubs along the river encouraged people to sign a petition to "keep this stretch of water focused on recreation, not commercial exploitation".

Putney's MP, Fleur Anderson, has also been strongly against the development saying it would make it "impossible and unsafe for schools and clubs to continue sport on that stretch of the river".

This is not the first time some of these boat clubs have been forced to move from the river. Westminster School Boat Club, reportedly the oldest boat club in the world, with official records beginning in 1813 with the names of the boys who manned a six-oared boat called 'The Fly', was originally based near the school in Westminster but is now a neighbour of our boat club. Since then Putney has become a thriving centre for water sports on the river and has over a century of its own traditions. Imperial College Boat Club itself was founded on the embankment in 1919 and is now one of Imperial's biggest and most successful sport societies, with the top Women's 4 winning the Henley Women's Regatta last year.

That's not to say the football club

hasn't had a long history in the area. Originally bought by Fulham in 1894, Craven Cottage held its first match in October 1896. The grounds themselves have been upgraded many times since then, but both the club and grounds have never had any involvement with the river.

The first part of their current redevelopment received planning permission from the council as well as the Port of London Authority and the Marine Management Organisation in 2017. This saw the reconstruction and extension of riverside stands by nine meters into the Thames. They paid handsomely to do so,

and so apparently, the short answer to the question, "can you buy part of the river Thames?", is yes. Original plans saw many people and local clubs concerned about the precedent being set of allowing corporations to buy part of the Thames and fears over the club's encroachment into the river being a slippery slope.

Thus, many people were unsurprised when plans, pictures and a website for a new pier and pontoon service were released via Fulham FC's website, despite the original report referring to 'minimising encroachment' no less than four times in their Planning Application Planning Summary.

In response to an article by the Daily Mail, a Fulham FC spokesperson, said in contradiction to their website, "For clarity, there is no proposal to extend a pontoon 80 metres across the Thames (nor has there ever been) and there is absolutely no risk whatsoever to the boat race."

"Fulham's design would, in addition to creating substantial and obvious benefits to the local community, focus on providing a wonderful viewing platform which would enhance the boat race atmosphere, experience and accessibility."

However, in order for the race to go ahead this year safety buoys surrounding the construction of the first part of the riverside development (the nine-metre extension) had to be removed so there would be enough space on this already narrow part of the river.

There is an existing pier within sight of the football club, that is currently serviced by Uber Boats. The benefit of a new pier to ferry the fans of a single club seems minimal and unrealistic, especially given the price difference in fares.

Single Adult Fare on Uber Boat: £13.50 for all zones; £8.70 for Central to West

Single Adult Tube Fare zone 1-6: Peak £5.10, Off Peak £3.10

What is certain is the incompatibility of rowing and Thames Clippers, especially on a stretch of river used to introduce a lot of children to the sport.

The use of their engines while arriving and leaving causes wash severe enough to force experienced rowers to stop or risk serious damage to their equipment, which demonstrates the problems the launches can cause even when stationary. Still collisions, unfortunately, are more than possible and potentially fatal.

In 2009, a crew of men training to row across the Channel were hit and sliced in half by 220 passenger Hurricane Clipper Ferry. In the original article by the Evening Standard, Jock Wishart, the organiser of the London to Paris Challenge, said: "This was an accident waiting to happen. The Clippers tend to think a bit that they have the river to themselves."

On Fulham FC's website they claim, "the Riverside development will be a location like no other, a real game-changer for Fulham Football Club, our neighbourhood, and all of London." - A quote by their owner Shahid Khan, an American billionaire, who has never lived in London or the United Kingdom.

“PUTNEY HAS BECOME A THRIVING CENTRE FOR WATER SPORTS ON THE RIVER



Pier plans



Many sports and clubs, including Imperial rowing, would be affected by this development