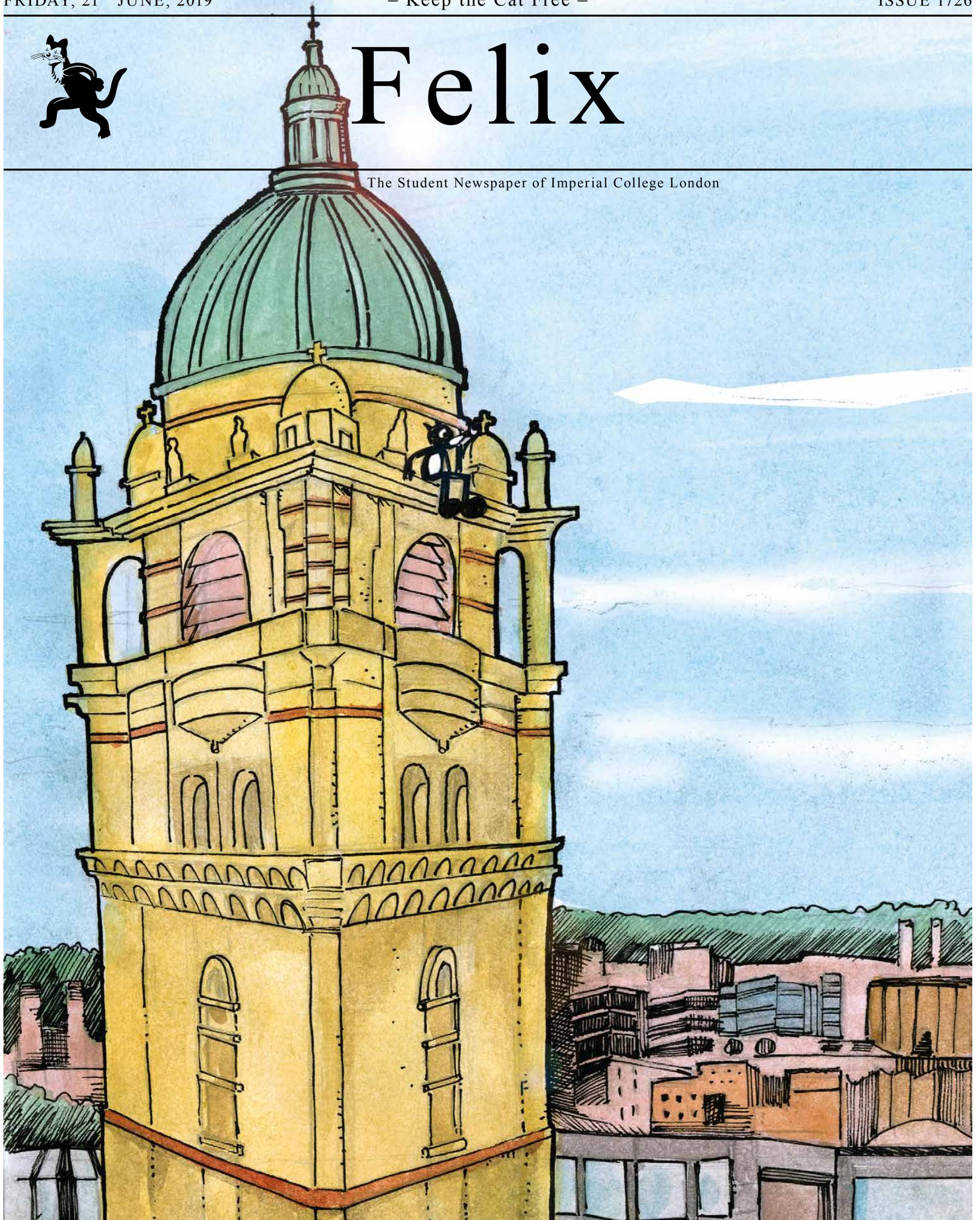




Felix

The Student Newspaper of Imperial College London



EDITORIAL

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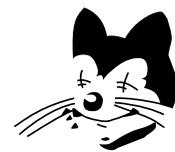
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Imperial's magazine formally known as

PHOENIX

returns...with a twist!

If you are interested in Grime
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What does Grime mean to
you?

If you're interested, please email Felix@imperial.ac.uk



NEWS

news.felix@imperial.ac.uk

Staff excellence is celebrated at the Annual Imperial Garden Party

NEWS

Isabelle Zhang

News Writer

Members of staff who have made outstanding contributions are recognised for their achievements with the President's Awards

On Tuesday 18th June, *Felix* was in attendance at the annual Imperial Garden Party, a ceremony to

honour staff who have made outstanding contributions to research and academic excellence, public engagement and outreach, teaching and student support, and to Imperial's culture and community.

Staff members who were shortlisted for the President's Award for Excellence were invited to attend the ceremony, where winners of the Award would be revealed live. One Award winner from each category would also be presented with the President's Medal for Excellence, also unveiled on the evening of the event. Students who were awarded Union Awards

in the previous academic year were also invited to attend.

The ceremony was hosted in the Great Hall by Imperial President Alice Gast, who gave the opening and closing speeches and presented winning staff with the President's Awards. Vice Provost (Education) Simone Buitendijk, Vice Provost (Research and Enterprise) Nick Jennings, Associate Provost (Academic Partnerships) Maggie Dallman, and Director of Human Resources and Organisational Change Louise Lindsay each announced the winners from one of four award categories: Societal Engagement, Research, Education, and Culture and Community.

A reception was held after the ceremony where refreshments were served and the student acapella group the Techtonics kicked off their set with a lively rendition of Jacob Banks' 'Chainsmoking'.

President's Medal winners include Mr Martin Lupton from the Faculty of Medicine for Outstanding Contribution to Teaching Excellence; Professor Lord Robert Winston for Excellence in Societal Engagement; the Department of Medicine Paediatric Infectious Diseases Team for Outstanding Research Team; Dr Alastair Donaldson from the Department of Computing for Excellence in Innovation and Entrepreneurship.

Undergraduate students



Professor Lord Robert Winston won the President's Medal for Societal Engagement // Imperial College London

in the Rural Educational Development (RED) Borneo Project team, from the Department of Civil and Environmental Engineering, and postgraduate student Paulina Rowinska from the Department of Mathematics, were awarded the only Student Award of the night – the President's Student Award for Excellence in Societal Engagement.

Alice Gast thanked

their contributions for “making Imperial an exciting place to study, a rewarding place to work, a valued partner, a great neighbour and a beacon of hope for the future.” These outstanding members of our community, she said, “are what makes Imperial the excellent institution it is.”

Strike threat as College rejects plea to protect pensions

Imperial's refusal to protect workers absolutely from increasing pension contributions risks industrial action later this year.

NEWS

Joanna Wormald

Deputy Editor

Imperial College has rejected a request from the University and College Union (UCU) to commit to effectively capping employees' pension contributions at 8%, despite warnings that the move could trigger strikes later this year and in 2020.

Last month, the College – along with most other universities – confirmed that its preferred option for the Universities Superannuation Scheme (USS) is for pension contributions to increase

to 21.1% for employers and 9.6% for employees, making a total contribution of 30.7%, in October 2019. Contributions would further increase to 34.7% in October 2021, subject to a new valuation in 2020.

UCU, however, has raised concerns over the USS' “questionable” position, and accused employers of betraying staff by failing to “work to replace the 2017 [contribution] increases with a fair outcome”.

In a letter to Imperial President Alice Gast, the UCU Head of Higher Education, Paul Bridge, said universities had allowed USS to ignore the “most important recommendations” of the Joint Expert Panel (JEP), which produced its first independent review last September.

Implementing the JEP's recommendations in full would result in combined pension contributions of 26%, with 14% paid by employers and 8% paid by staff.

Since contributions under the USS proposals are higher than could be achieved under the JEP's recommendations, the plan fails the “no detriment” test enshrined in UCU policy. This test requires no increases in pension contributions and no cuts to pension benefits.

Last week, UCU asked the College to confirm that it “will not impose any benefit cuts and/or contribution increases, including contingent contributions and default contribution rates for future valuations, on members from October

2019 onwards ... [including] any and all increases over the rate of 26% (8% for members) which was established prior to the 2017 valuation”.

“Last year, strikes disrupted more than 60 universities in the run-up to exams.”

UCU has also told the College it must instruct its representatives on the Joint Negotiating Committee and Employers' Pension Forum “not to introduce, comply with,

or vote for any proposals that would involve such cuts and/or increases for members”. Alternatively, the College must “cover any scheduled increases in full until USS's governance and valuation methods and assumptions have been overhauled”.

The College was given until last Wednesday to commit to these demands. Failure to do so would be construed as evidence of a trade dispute between the College and UCU members, according to Bridge, and would leave the College facing “a damaging dispute and strike action”. At a recent UCU conference, delegates voted to “commence a dispute with USS employers and to move to a statutory ballot for industrial action in September”. Last year, strikes

disrupted more than 60 universities in the run-up to exams.

Despite this threat, a draft response to the letter circulated to staff earlier this week rejected the UCU's call for the College to absorb all additional contributions above 8%. The College stated it is willing to take on a greater share of the combined contributions but “cannot agree that members would not have to take any share of any increased costs”. Additionally, the College said it would continue to push for affordable contribution rates while acknowledging the decision would ultimately be taken by USS and the Pensions Regulator.

NEWS

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Union to launch h-bar evening food service

h-bar's new menu, which will see Imperial students able to eat between 7pm and 11pm on weekdays will be

NEWS

Andy Djaba
Editor-in-Chief

Imperial students will soon be able to enjoy evening bar food at h-bar again, following the Union's announcement that it will be launching a new menu at h-bar on Wednesday 26th June.

This comes in response to student discontent at College's decision to cut the evening bar food offering at h-bar in March, as reported by Felix.

Felix was fortunate enough to receive an invitation from the Imperial College Union Commercial Services team to attend an exclusive taster session to get the inside scoop on what to expect from next week's revamped menu. Also in attendance were postgraduate (PG) faculty reps, h-bar managers and members of the current and former GSU committee.

"I thought the buns were delicious, 10 out of 10, and the mozzarella sticks die for"

Jason Hosken, one of the student duty managers at the bar said: "I thought the food was excellent and I'm really glad that we're finally bringing some food back to h-bar. I think the



The wings were described as "not too spicy but also have a slight kick" // Joseph O'Connell-Danes

sharing possibilities are amazing and we're going to do some really great food and drink deals and they'll complement our new drinks really well in the bar".

The menu, which consists of new ideas developed from student feedback, as well as some trusted favourites, has been designed with the idea of sharing in mind, following feedback from h-bar users about how much the tapas style food was missed. Whether you're popping in for a meal for yourself, have a few snack plates, or want to scale up portion sizes to fit your group size, the new menu has the flexibility to do just that. The wings, churros, bao buns and burgers on offer in particular were favourites amongst those in attendance at the food tasting. As this menu is being

"I love the wings, they're not too spicy but also have a slight kick, and the homemade hummus is a lovely touch"

Details of the full menu can be found below:

- Steamed Bao Buns with Korean BBQ Pork
- Steamed Bao Buns

introduced on a trial basis, it is still subject to change and will adapt depending on feedback received from students and to keep up with seasonal changes.

- Classic Homemade Beef or Chicken Burgers, with gluten free options available and customisable add-ons such as bacon or cheese
- Falafel and Spinach Burger
- Chilli Chicken Wings with Celery Sticks and Cool Ranch Sauce
- Vegetable Crudité Platter with Hummus and Pitta Bread
- Gourmet Hot Dogs (meat and veggie)
- Mozzarella Sticks
- Onion Rings
- Curly Fries
- French Fries
- For dessert: Churros with Chocolate Sauce

h-bar is Imperial's postgraduate pub and bar, and is run as a joint venture

between Imperial College and the Union, with the food offering provided by College and the drinks provided by the Union. The decision to cut the evening bar food service, which sparked outrage, was made due to financial reasons and meant that food would no longer be available in h-bar after 7pm, much to the chagrin of staff and students alike. The Union's decision to reintroduce the evening food service at h-bar can be seen as its refusal to let the only postgrad specific bar be discriminated against, something for which it should be commended.

"My personal favourite was the bao buns"

The new menu came about through months of development between Sam Swiniarski (the Union's Chef de Partie) and Jason Hosken, Mohit Devgan (the future GSU President) and Ute Thiermann (the current GSU President), who were all instrumental in communicating the thoughts of the students they represent, as well as providing feedback in each tasting session.

Deputy President (Finance & Services), Claudia Caravello, told Felix: "It was important to us that we introduce a menu that postgrads wanted. It was never going to work if we just picked what food we thought they wanted and forced it upon the students and staff. That's why we have worked hard with h-bar manager Jason and future

NEWS

news.felix@imperial.ac.uk

available from 26th June

GSU President Mohit ensure they help shape the menu, as well as used feedback collected from talking to many h-bar users to help guide what types of food to include."

"I love the food, I thought there was a wide variety which includes healthy options and vegetarian and vegan options."



The bao buns proved a favourite amongst those at the taster session // Joseph O'Connell-Danes

Guardian University League Tables: Imperial Maintains Position

NEWS

Henry Alman
Editor-in-Chief

The Guardian University league tables for 2020 were published on 7th June. The tables rank UK universities both overall and for individual subjects.

Imperial maintained its overall position from last year in 7th, an impressive feat given that many London universities have declined. LSE, King's College, City University, and Royal Holloway all dropped several places. UCL saw the worst drop-off amongst the London universities, falling eleven places from 11th place to 22nd.

The rankings are based on several criteria: satisfaction with course, with feedback, and with

teaching – the scores for which are taken from the National Student Survey responses – as well as spend per student, graduate employment rates, a 'value added score' which compares students' degree results with entry qualifications as a measure of teaching effectiveness, and the 'continuation rate' of first year students who stay on for second year.

As in previous years, Imperial was rated highly for most criteria, but was let down by poor student satisfaction – in particular, Imperial rates eighth worst in the country for satisfaction with feedback. Imperial also has a relatively low 'value added score'. In contrast, it has the 6th lowest student-to-staff ratio, the 4th highest spend per student, the highest employment rate after six months of any UK university, and tied 9th for continuation rate.

The subject rankings are mixed. Engineering

subjects at Imperial continued to excel, with Civil and Mechanical/Aeronautical Engineering taking the top spot in the UK for another year running, and Chemical Engineering climbing from 4th to 2nd. EEE/EIE and Materials both dropped just one place, from 4th to 5th and 6th to 7th, respectively.

Joining the engineers in their dominance are the Computing and Earth Sciences courses, placed 4th and 1st, respectively. Mathematics showed the greatest improvement, rising from 21st to 8th place. Medicine and Biosciences each also rose several places, from 11th to 9th and 13th to 8th.

The Faculty of Natural Sciences, however, continues to struggle. Physics came in at 38th, falling for the third year in a row, while Chemistry placed in 42nd. Both have seen catastrophic declines over the past several years; just three years ago, Chemistry placed 19th and Physics

placed 8th. St. Andrews students will be happy, given that they have finally overtaken Oxford for 2nd place. The order of the top three universities has been Cambridge, Oxford, then St. Andrews in 3rd since the 2015 tables. This sort of "reordering" is common outside of the top three – the top ten universities from the 2019 rankings are all in the top eleven in the 2020 rankings, the newcomer being Exeter, who rose four places from 14th to 10th.

The falloff of London, one of the UK's education hubs, accompanies an overall decline in UK universities as ranked in international tables. The QS world rankings for 2020, released earlier this week, saw two thirds of the UK's ranked universities falling in the wake of financial constraints due to the economic uncertainty caused by Brexit.

2020	2019	Institution
1	1	Cambridge
2	3	St Andrews
3	2	Oxford
4	4	Loughborough
5	5	Durham
6	6	Bath
7	7	Imperial College
7	9	Lancaster
9	8	Warwick
10	14	Exeter

"Imperial maintained its overall position from last year in 7th, an impressive feat given that many London universities have declined" // Guardian



Resistance, Resilience and Revolution

A brief insight into the humanitarian crisis and the Sudan Revolution, as well as little steps we

POLITICS
Eva Tadros
Food Editor

For the first time ever in the lives of the Sudanese youth community, we get to see and experience a Sudan that isn't ruled under Omar-Al-Bashir's dictatorship. For the past 30 years, Sudan has seen Bashir's rule take everything away from its people – everything except for the people's resilience.

Since the uprisings began in December following the rise of fuel and bread prices, Sudan's people have made it clear that they weren't going to settle for anything less than the complete removal of the current regime and the reinstatement of a completely new government composed solely of civilians. People made these demands clear through peaceful sit-ins, and were met with the use of force by Sudan's militia. That didn't stop Sudan's people from continuing to demonstrate tremendous strength and courage at the face of brutality and harsh inhumanity, and eventually led to the toppling and overthrowing of Omar-Al-Bashir on 11th April – a revolutionary success deemed legendary by international spectators, and deemed tradition by the locals, who have peacefully toppled two previous governments, once in 1964, and again in 1985.

The Rapid Support

Forces, or the RSF, led by Mohamed Hamdan Dagalo – better known as Hemedti - replaced Bashir's rule following his overthrowing on 11th April, as well as the overthrowing of his successor less than 48 hours later. They proposed a three-year transitional period in which a military government was to lead the country, but were met with resistance from the Sudanese public through peaceful sit-ins. The public made their demands very clear through the Sudanese Professionals Association (SPA), as their "official" voice, and a democratically elected civilian government topped the list of demands.

This time round, the protestors were met with a horrific slaughtering campaign led by the RSF, aka the rebranded Janjaweed (which translates to "devils on horseback"). Systematic rape of men and women was being carried out on the roads of the capital, Khartoum, with endless accounts of children having had to watch their parents being raped in front of their own eyes. Accounts of bodies washing up on the banks of the Nile river were flooding social media, with graphic photos and videos reaching everyone's timelines. Stabbings, muggings and lootings became the norm as the militia lurked the streets.

Internet access was also shut down in an attempt to silence the protestors and prevent news of the barbaric acts from reaching the outside



Washington D.C. Protests // Deena Elomararabi

world. However, the militia underestimated the power of the Sudanese youth, who broke the internet without any internet.

Following the past few weeks, we've watched social media turn various shades of blue in a show of solidarity with protes-

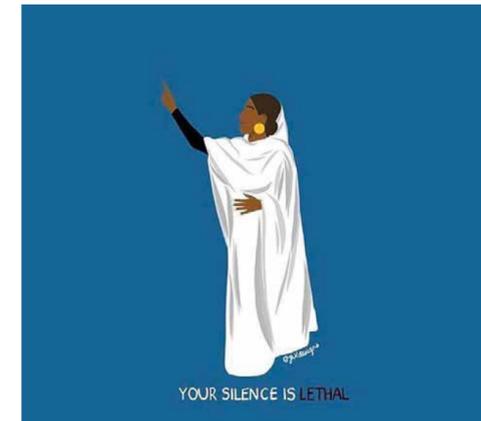
tors in Sudan, as well as a tribute to the martyrs of the revolution, often accompanied with the hashtag #BlueForSudan. The colour was chosen following the martyrdom of Mohammed Hashim Mattar, who had just arrived in Khartoum from London, and was only 26

when he became one of the 100s of people gunned down by the RSF on 3rd June.

As a member of the Sudanese diaspora watching this violence unfold back home, my only solace came from talking to friends and

family also watching this from afar, filled with dread and panic as to what was going to happen next. With internet being shut down and access to my friends being impossible, it was time to find out what I, as an individual, could do to help my

can all take to help



Your silence is lethal // Instagram

country, and these things are little steps we can all take to give Sudan the justice it deserves.

1. Educate yourself and read more around the situation in Sudan

The 'Sudan Uprising Master Document' is currently one of the biggest databases with information on the Sudan uprisings, and has an extensive list of articles and resources accessible.

'Tasgot Bas Archives' was also set up as an easy medium to help you navigate the Sudanese Revolution, with information on all the aspects of the revolution available at a click.

There's also an abundance of videos released on social media platforms that explain the revolution in detail, with one of the most popular being Hasan Minhaj's *Patriot Act* episode on Netflix.

2. Spread the word

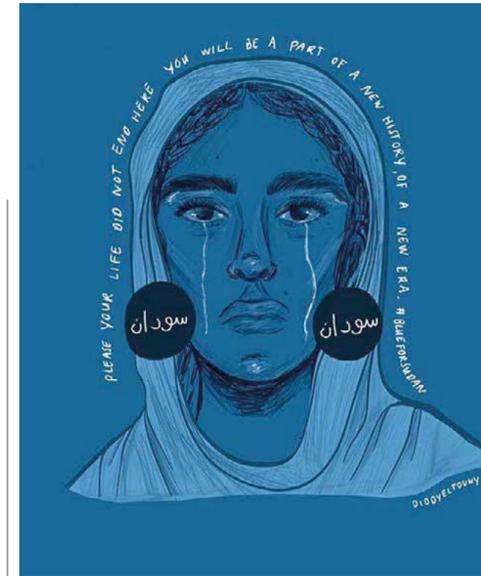
Many were dubious as to what changing your profile picture to blue would do but it was only after social media turned blue that Sudan started

getting any form of Western media coverage.

Use the hashtags #BlueForSudan, #IamTheSudanRevolution, #SudanUprising, #SudanCivilDisobedience and #SudanRevolts in your posts to raise awareness. It was also due to the use of these hashtags on Twitter that the world finally learnt of the ongoing crisis in Sudan.

Share information about Sudan on all your social media platforms. There's an abundance of information available online to help you fact-check, and most Sudanese people you contact would be more than happy to share their stories and verify reports.

Finally, a simple retweet or repost can go a long way. Look for verified accounts on social media and amplify the voices of Sudanese activists and organizations on the ground. @BSOnBlast, @aElgady, @YousraElbagir and @Qoutoufy are just a few of the activists who have been doing a great job at keeping the world updated on the Sudanese revolution.



You will be a part of a new history, of a new era // Instagram: @Diddeltouny

3. Donate what you can to registered non-profit organisations helping Sudan

Look for legitimate aid organisations you can donate to. Save the Children has been working in Sudan since 1984 to help children displaced by conflict and poverty. The International Rescue Committee started work shortly afterwards in 1989 to help displaced families by providing food and shelter, as well as vital resources. UNICEF has also worked extensively in Sudan and has verified means of donating to help with the crisis.

There have also been several fundraisers set up by the Sudanese diaspora in hopes of making donations from the international community easier. Check their pages before donating – most of the legitimate ones have photos up as proof of where your money is going. The GoFundMe "Emergency Medical Aid For Sudan" has been verified and is currently where most UK donations are encouraged.

Amidst all the social media coverage, there have been numerous Instagram accounts which have taken off, the most

popular of which was @SudanMealProject, claiming they would donate meals and aid to Sudan in exchange for follows, likes or story shares. Following basic investigations, it was revealed that these click-bait accounts were created for attention and were not actually working with any aid organisations, and this was later confirmed by UNICEF communications specialist Joe English, who says, "it's incredibly difficult to send meals to Sudan". This further highlights the significance of ensuring you are donating to verified sources.

"Sudan has seen Bashir's rule take everything away from its people – everything except for the people's resilience"



Internet access was also shut down in an attempt to silence the protestors and prevent news of the barbaric acts from reaching the outside world // Instagram: @WhyForYasmine

4. Attend protests and vigils being held near you

In London, Manchester, and Nottingham, as well as other major UK cities, protests are being held weekly, if not more often. The saying "strength in numbers" is more true now than ever. It is vital that we all show up whenever we can to support the movement and do our bit for everyone standing up for democracy on the ground in Sudan.

"The militia underestimated the power of the Sudanese youth"

Recently, there have also been vigils held to commemorate the fallen martyrs of the Sudan Revolution – peaceful protestors who have been brutally killed under the military regime. Whilst being proactive is essential to the success of the revolution, it is also vital that we take time out to grieve and heal, and it is so important that we give ourselves the platform

and space to remember everyone who gave their lives for the sake of a better future for all of us.

More information on both can be found on Instagram: @SudanUprisingUK.

5. Put pressure on your local government and lawmakers

With numerous petitions taking off on Change.org, there is so much that can be done to pressurise the government to acknowledge and condemn the lethal use of force on peaceful protestors by Sudan's militia. Condemnation, which isn't necessarily the most effective approach, is essential in recognising the situation in Sudan as a crisis, and paving the way for international observers and mediated talks that could finally give democracy a chance.



Psychedelics research at Imperial College enters a new phase

SCIENCE

Joe Sheppard
Science Editor

The second phase to be exact. This year the newly minted Centre for Psychedelic Research at Imperial College London began conducting a first-of-its-kind phase II clinical trial designed to test how effective the hallucinogenic compound psilocybin is at treating patients with major depressive disorder versus a current prescription antidepressant, escitalopram. While several clinical trials using psilocybin have been catching headlines recently, the research at Imperial College is taking the next step by comparing psilocybin, the active ingredient in magic mushrooms, with the current standard of care, to see just how much better, if at all, psychedelics can make the lives of patients.

Why the sudden interest in psychedelic compounds?

It may surprise you to know that the idea of using psychedelics during psychotherapy has been around for some time, and can be traced back to the modern rediscovery of psychedelics in the 1940s and 50s. Less than 10 years after its rediscovery by renowned chemist Albert Hoffman, psilocybin was already being synthesised in commercial labs and sold as a novel psycho-therapeutic drug under the brand name indocynin, sharing a place on the shelf with over-the-counter LSD, branded as Delysid. Despite showing promise as psychotherapeutics

in many clinical studies throughout the 50s, the spread of psilocybin and LSD out of the clinic and into the general public worried the American government. Afraid that the values of middle-class Americans were being eroded, the government banned psychedelics, labelling them as being “without any currently accepted medical use in treatment.” Research into the medicinal benefit of psychedelic compounds was almost completely abandoned by the end of the 1970s and yet the idea that the intense experiences induced through the psychedelic state might help patients reconcile grief or engrained addictive behaviour persisted in the minds of a few pioneers.

Interest was reignited in 2001 following FDA approval for a clinical trial showing that psilocybin could reduce obsessive behaviour in patients with OCD, and again in 2006 with a study showing that psilocybin-induced spiritual experiences could have long-lasting positive effects on well-being and behaviour, even in healthy patients. In effect, these two studies opened the floodgates on FDA approval for clinical trials using psychedelics and granted long sought after credibility to the emotional significance of “the trip” and what is now called the psychedelic therapy model, in which patients without a history of schizophrenia are given high-dose psychedelics and are guided through the trip by trained therapists under controlled conditions.

How does psilocybin-assisted psychotherapy work?

The experiences that follow taking a psychedelic are highly contextual and deeply personal, the word psychedelic is itself derived from the Greek words *psyche* (mind) and *dēlos* (manifest), alluding to the highly individual effects of taking these molecules. The types of experiences that participants encounter during guided sessions can vary hugely, but cases of reconciliation with past grief, deep personal introspection or feelings of bliss are consistently reported. This is an important factor in the treatment mechanism of the psychedelic therapy model. Rather than blunting the emotions of patients with depression, which is a commonly reported side effect of antidepressants, psilocybin-assisted psychotherapy has granted them insights into the emotional root of their issues, with some patients revealing that they had achieved one of the most significant emotional breakthroughs of their lives during psilocybin-assisted psychotherapy. It is easy then to misinterpret psilocybin as a wonder drug which can fast-track the benefits of visiting a psychologist or taking antidepressants, which often require months of sessions or repeat prescriptions to achieve results. But this is not the case, psilocybin is thought to push the brain into a more flexible state wherein negative thought patterns can be loosened and through heightened association new personal insights can be uncovered. Combined with the support of trained therapists, the psychedelic



A typical setting for psilocybin-assisted psychotherapy // Centre for Psychedelics Research

state can lead patients to find new perspective on events in their past. Indeed, it may be through reconnection with the past that the benefits of psilocybin are achieved, in line with a newly proposed feature of depression called derailment, which suggests that an inability to identify with past versions of yourself can cause a loss of identity and purpose which may lead to depression.

Pharmacology versus psychedelics

Rather than aiming to treat a single chemical imbalance in the brain, as do traditional antidepressants, called selective serotonin re-uptake inhibitors (SSRIs), psilocybin assisted psychotherapy uses the brain states created through altering about lasting emotional improvement. But how good is it? Does the psychological benefit persist or do patients relapse shortly afterwards? The lack of head-to-head comparison has so far prevented researchers from objectively quantifying the benefit of psychedelics versus antidepressants. This is where the clinical trial at ICL comes into play. In this

trial, patients with major depressive disorder will be randomised to receive psilocybin at varying dosages and six weeks of daily escitalopram or placebo, with all patients participating in guided psychotherapy. The effectiveness of both treatments will be determined through self-assessed questionnaires on depressive symptoms as well as fMRI scans of the brain, paying special attention to areas of the brain sensitive to emotional stimuli.

“Does the psychological benefit persist or do patients relapse shortly afterwards?”

As previous research has shown, depressed patients show greater activation of the amygdala, an area of the brain sensitive to emotional stimuli, when they are confronted with visual stimuli that evoke negative reactions, such as angry or fearful faces, a response that is dampened by antidepressants. Conversely, psilo-

cybin has been found to cause increased amygdala activation in response to both negative and positive visual stimuli and the strength of this activation predicted reductions in the severity of symptoms in patients with treatment-resistant depression. The attenuation of visually stimulated amygdala activation in patients receiving antidepressants and enhancement in patients receiving psilocybin gives credence to the hypothesis that psilocybin can put patients with depression back in touch with their emotions.

Using fMRI to study how psilocybin and SSRIs can alleviate the symptoms of depression despite their different mechanism in the brain can offer researchers insights into the complex neurobiology of these conditions. fMRI also offers researchers a chance to more objectively assess the magnitude of relief from depressive symptoms and, by combining this analysis with questionnaires, conclusively demonstrate the therapeutic potential of psilocybin-assisted psychotherapy. When the results of this study are published it will be interesting to see, not only which treatment offered the most benefit to patients, but also what aspects of the psychedelic-trip can predict the best outcomes for patients and if these meaningful experiences can be sought out and encouraged in our daily lives.

If you would like to volunteer for this study, please contact the study coordinator Bruna Giribaldi on b.cunha@imperial.ac.uk.



How to recognise measles: symptoms include fever, a cold, and, eventually, a spreading red-brown rash // Wikimedia

The revival of measles

Measles is on the rise in the wake of the popularisation of ‘anti-vaxxer’ rhetoric, decreasing herd immunity, and increasing risk. Make sure you are protected!

SCIENCE

Madeleine Openshaw
Science Writer

When Max was 18, he woke up one morning feeling very unwell. “I just couldn’t get up,” he said, “I had been out the night before and my boyfriend at the time thought it was just a hangover, but his flatmate came in and said I looked truly awful.” Eventually, Max was taken in a taxi to Whitechapel Hospital. It was there that he was diagnosed with measles.

was so unwell. I had just started an art degree, and I was away for nearly half the term,” he recalled.

“We have all been urged to check that we have had two doses of the MMR jab.”

Despite having been on the brink of elimination in 2015, unfortunately measles cases like Max’s are once again on the rise in the UK. Last week, Imperial students were informed by email of an outbreak in the local community. As a result, we have all been urged to check that we have had the recommended two doses of the MMR

(Measles, Mumps and Rubella) jab. But the reasons why we may have missed out on having the vaccine as children are not straightforward.

We all think we know the story. “In 1998, Andrew Wakefield published a, now discredited, paper linking the MMR to autism,” Public Health trainee Dr Catherine Huntley explains, “leading to intense media coverage, which had an important impact on MMR coverage.” Those children who missed out on having the MMR as a result of the scandal are now populating UK universities. “This group of people is more susceptible to measles because immunity levels are low,” Dr Huntley continues.

As a result of the scandal, the latest wave of measles cases can, in part, be attributed to Andrew Wakefield. And vaccine

hesitancy, as it is politely known, is thriving once again. Social media is bringing together communities of so-called ‘anti-vaxxers’, feeding them fake news and fuelling scepticism of expert opinion (which, for the record, is that the MMR vaccine is very safe). It is the perfect populist storm. Or at least, this is the story we read in the papers.

But the ‘anti-vaxxers’ are only partly to blame. There are other reasons why Imperial students might have missed their MMR: a childhood spent living overseas, or a change of GPs at a critical moment. I grew up in London, yet I only had my MMR when I arrived at Imperial. My parents simply forgot to take me for my jabs. Max, too, did not miss his MMR on purpose - his family moved to the UK from Hong Kong when he was

six and his records got lost on the way.

“There are plenty of reasons a student may have missed their MMR, not just as a result of vaccine hesitancy!”

Fear of being branded as an ‘anti-vaxxer’, or an assumption that, because you have pro-vaccine parents, that you must have had the MMR, may in fact be acting as barriers to checking that you’re covered. Instead, it’s possible that, like Max

and me, you just slipped through the net. It will only take one phone call to your GP surgery for you to find out. If you don’t have a family doctor or you’re unable to find out your immunisation history, Dr Huntley says “You can go ahead and arrange to be vaccinated again”. It is safer to do this than to potentially be left unprotected.

I asked Max what advice he would give to someone trying to decide whether or not to have the MMR. “I would definitely have it,” he said. “Measles is a horrible sickness to have. It’s very contagious and can be dangerous to others.” Measles is preventable, and it will take little effort to check that you’re protected. So, don’t be afraid, don’t assume, just go and check. It is only together that we can bring an end to measles in the UK.

Time to go to sleep

Almost all animals sleep, but we don't know why. Modern research is revealing how sleep is essential for numerous

SCIENCE

**Yizhou Yu
Chiao Lee**
Science Writers

During the day, our consciousness sails on the surface of an unfathomable, electrochemical sea into which it sinks every night when we sleep. How – and why – we lose consciousness, which some may argue is the most important part of the human experience, is still an unsolved mystery. With the emergence of technology playing a larger role in our day-to-day lives and the added stress on hard-working university students, many people are experiencing more and more disrupted sleep. Of course, there are also a few ultimate questions we all want answered: how do we fall asleep, what happens during sleep and how can we sleep better?

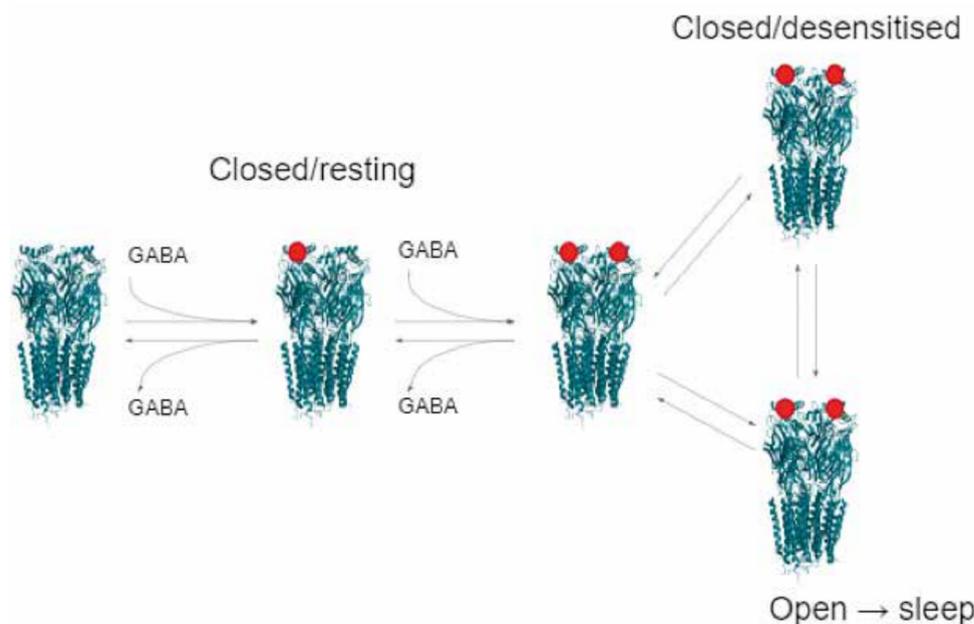
“How - and why - we lose consciousness, which some may argue is the most important part of the human experience, is still an unsolved mystery”

Inhibitory neurons: the sleep switch

A balance of excitatory and inhibitory signals underlies the function of the central nervous system. When we are awake, the neurons in the brain fire simultaneously to generate a kaleidoscope of neural activity. During sleep, inhibitory neurotransmitters, such as γ -aminobutyric acid (GABA), are released, allowing us to fall into a calm, deep slumber. Specifically, two of these inhibitory neurotransmitters bind to their receptors, which facilitates the inflow of negative ions upon activation (as shown in the image to the right). These negative ions hyperpolarise the neuron, which make the neuron less susceptible to be activated. In summary, when falling asleep, a few neurons release GABA neurotransmitters to inhibit the activity of multiple downstream neurons, which makes us lose consciousness. While scientists have a relatively good understanding of how we fall asleep, why we sleep is currently a matter of debate.

Sleep to remember: the hippocampus is reactivated when you sleep to consolidate memory

Sleep is thought to be crucial for the ability to recall past events, and its deprivation may significantly impair cognitive performance. A nap as short as even six minutes have been reported to improve retention. How scientists gain insights into memory is quite interesting. The novel object recognition (NOR) paradigm (as shown in



Two GABA molecules bind and activate the GABA receptor. This activation transiently induces an open state, which allows negatively charged ions to flow in the neuron, inhibiting its activity // Yizhou Yu

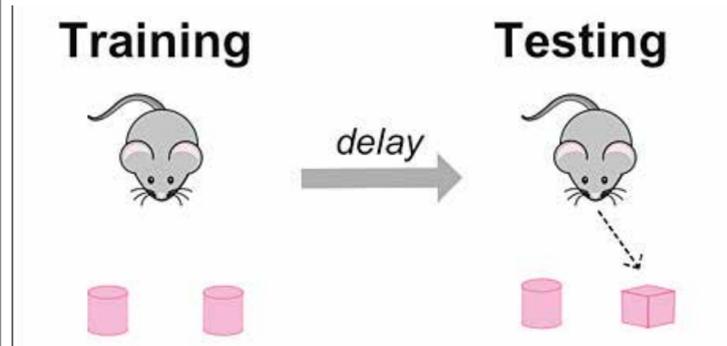
“While scientists have a relatively good understanding of how we fall asleep, why we sleep is currently a matter of debate”

the image to the right) is a commonly used experiment to test memory consolidation in rodents. A mouse is first exposed to two identical objects (cylinders) in the training phase for ten minutes. After a considerable delay, during the testing phase, one of the two familiar

objects is exchanged for a novel object (the cube), and the mouse is expected to remember its interaction with the cylinder and shows an interest in the cube. Using this experiment, a recent article in *Nature* by Swanglit et al. 2018 reinforced the idea of neuronal replay, stating that memories stored

in the hippocampus are replayed during sleep. It was also observed across animals that the artificial reactivation of these memories during sleep further allows consolidation, while the inhibition of the hippocampus during sleep hinders the formation of long-term memory.

“Memories stored in the hippocampus are replayed during sleep”



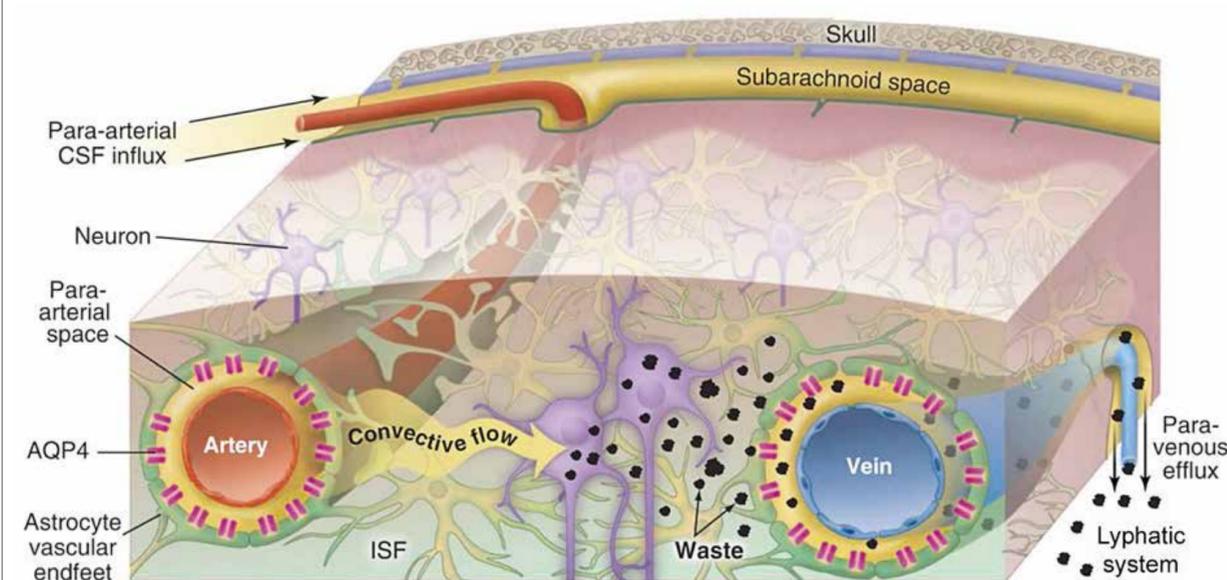
The novel object recognition paradigm tests the ability of a mouse to remember an old object // Yizhou Yu

brain functions such as learning, memory and immunity.

Sleep to clear toxins from your brain

Another important function of sleep is thought to be to facilitate the clearance of a toxin called amyloid- β which is an underlying cause of Alzheimer's disease. After induction of sleep through GABA activity, the extracellular space between the cells in the brain increases. A clear liquid called cerebrospinal fluid then flows from the arteries of the brain into the space between the neurons. This fluid flushes toxins in the brain into the veins, which then transport the toxins into the lymphatic system. The process which flushes out toxins from the brain is called the lymphatic system of the brain, or the glymphatic system, as this process is regulated by glial cells. When we forgo sleep, these toxins accumulate in our brain, which in some cases is believed to lead to devastating diseases. So, Imperial, how is your sleep?

“When we forgo sleep, toxins accumulate in the brain, which in some cases is believed to lead to devastating diseases”



The glymphatic system clears toxins from the brain. First, cerebrospinal fluid flows into the periaxonal space. The water component crosses aquaporin channels to reenter the brain, where the solutes can be cleared with astroglial transporters or channels, or can pass through the astrocytic endfeet clefts. Then, cerebrospinal fluid and interstitial fluid exchange within the brain, which is finally drained into the perivenous space of deep-draining veins. // (Jiang, 2019), *Stroke and Vascular Neurology*

Sleep to perform: how much sleep are Imperial College students getting, and how much is enough?

In the knowledge that poor sleep hygiene negatively impacts cognitive and physical abilities, we conducted a brief survey on how Imperial College Students sleep. Our study showed that lower sleep quality correlated with difficulties to stay awake when performing social or cognitive activities. More precisely, a low quality of sleep negatively impacted function in the morning and afternoon, but not in the evening. This suggests that, while our body adapts to the need to perform during the day, toxin accumulation as well as other damage incurred by our brains from sleep deprivation are not recovered. Visit the Sleep Imperial website for a detailed analysis of the

data. Furthermore, a study published in January 2018 reported that people who prefer to sleep and wake up late are at increased risk of a range of disorders, ranging from psychological, neurological and respiratory disorders to diabetes and even premature morbidity. With the 9-to-5 schedule being so ingrained in the society, how can one improve their overall sleep?

Sleep better!

One major change everyone can make is to their lifestyle, which can include weight management, quitting cigarette smoking, avoiding late night food binges and reducing alcohol and caffeine intake. Notably, the circadian rhythm, an internal clock that determines our sleep-wake patterns, is hereditary (so if you're having trouble

catching those worms, your parents may be to blame!). Blue light emitted by our phones and laptops may also alter the circadian clock and affect our ability to go to sleep. Therefore, it is advised to avoid the use of technology in the evenings, and if you really have to watch that next episode, consider installing a blue light filter on your laptop. For those who have trouble waking up early, exposing yourself to sunlight the moment the alarm goes off (yes, we're looking at you chronic snoozers) can help you feel more alert during those 9am lectures. Finally, finding a comfortable sleep position is important for musculoskeletal pain, breathing and gastro-oesophageal reflux.

All in all, the path to maintaining healthy sleep patterns will include a

“The circadian rhythm is hereditary (so if you're having trouble catching those worms, your parents may be to blame!)”

lot of trial-and-error. Listening to your body is key. There is no exact, 'one size fits all' way to sleep – you have to be mindful of what works and doesn't work for you. In fact, our ability to sleep differs from one another, and it is sometimes hard to wrap our head around what is good sleep. The Sleep Imperial team has

thus created this short evidence-based quiz, which will give you a score on your sleep to help you sleep better: tiny.cc/sleep-imperial.com. Feel free to try it! Who knows, maybe when you begin to sleep better, you might even find that your academics and wellbeing start to improve! Try out the free quiz to get your sleep score:



SCIENCE

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Oxygen: the generator of life

New research indicates that oxygen abundance was strongly correlated to cycles of flourishing and declining biodiversity during the development of prehistoric multicellular life.

SCIENCE

Juan Rubio Gorrochategui

Science Editor

When your peaceful summer nap is interrupted by the constant buzzing of a fly, do not think of it as the predetermined behaviour of a bothersome insect, but that of a many-times-removed cousin. Most animal phyla (the major groups under which the animal kingdom is divided, based originally in their body plan and then on genetics) first appeared on the fossil record 540 million years ago, during an event known as the Cambrian Explosion. Worms, molluscs and even the very first recognisable ancestors of vertebrates started crawling the seabed during that period, all in a timespan of around 20 million years, which is a negligible amount of time in geological terms. The causes of such an increase in both the number and diversity of species are still heatedly debated by palaeontologists and biologists, with theories ranging from an increase in calcium concentration in the oceans to an arms race between predators and prey. But recently, researchers think that they have found the one major reason behind the event.

Apparently, it was oxygen. “More specifically, what we have found is that the variations in oxygen concentrations during the period can be correlated with cycles of ‘boom and bust’ in the biodiversity of the Cambrian. Higher con-

centrations of oxygen are found in periods where species thrived; lower ones are related to extinction events,” says Dr. Tianchen He, one of the leading researchers from the University of Leeds.

The researchers measured oxygen concentrations in the atmosphere at the time by studying two isotopes of sulphur

“correlations between oxygen abundance and the blooming of life could not be clearer”

and carbon that are present in rocks of the period excavated in the banks of the Lena River, Siberia. In a chemical process known as reduction, compounds with both oxygen and sulphur or oxygen and carbon lose their oxygen atoms (they are “reduced”), and oxygen in gas form is released. Thus, when high concentrations of reduced carbon and sulphur are found in rocks from the time, it can be deduced that the amount of oxygen in the atmosphere was also substantially large.

The variation of oxygen in the rocks was compared to past palaeontological worldwide records on species biodiversity throughout the Cambrian, and the correlation between oxygen abundance and the blooming of life could

not be clearer. “This cycle continued for 40 million years, causing micro-extinction events when oxygen concentrations decreased,” says co-author Professor Graham Shields from University College London. “There is a singular, final and globally evidenced episode of oxygenation around 500 Ma at the end of the Cambrian Period called the SPICE event. The subsequent geological period, the Ordovician, was quiet by comparison.”

It seems that oxygen variations were instrumental for explaining the radiation of multicellular life, but, once this class of organisms was established, it gave way to other environmental and geological factors as the main driving force behind biodiversity dynamics. The end of the Ordovician

(440 million years ago) saw a major extinction event that drastically reduced the number of marine species. This time, though, it was a global glaciation that caused the catastrophe.

The researchers are

“oxygen variations... gave way to other environmental and geological factors”

optimistic that the data so far confirm their theory, with the data recovered, but samples from other parts of the planet need

to be analysed in order to confirm that the variations were, indeed, a global phenomenon. Provisional results from rocks found in China appear to comply with the hypothesis. “We have found a similar pattern at least for one of the excursions in South China. However, we are still working to confirm our findings in Morocco and Mongolia,” says Dr. He.

One of the most essential elements for our survival was most probably instrumental in triggering the changes that made us what we are. Breathing not only keeps you alive, but may also have been responsible for generating multicellular life in the first place. Every creature in that group, from flies to us, should be thankful for that.



A fossilised trilobite, Aldonaia, dating from the Cambrian Period // Andrey Zhuravlev Lomonosov, Moscow State University

TECH

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Impromptu Part V - Detailing Impromptu

Founders of Impromptu detail the app itself

TECH

Sahir Khurshid
Tom Burgoyne
Impromptu

Hello again, Felix readers! Congrats on finishing your exams! Our prior instalments have touched on some of the general do's and don't's of setting up a tech start up, and also our personal journey. In this final issue of the term, Tom and I detail Impromptu.

The inspiration for the app stems from our time as students at Imperial where we found that our social life revolved

around our department. Unfortunately we did not feel integrated to the rest of the college, let alone our surrounding neighbourhood, and we would have welcomed the means to do things with people nearby (to both make friends and explore the capital). Having surveyed, we found this to be a common theme amongst students, academics and, also, young professionals who struggle to develop a social life outside of their work place. The overriding criticism in this regard was that there is no efficient means of interacting with fellow citizens and that prevalent events apps simply regurgitate "TimeOut" listings,

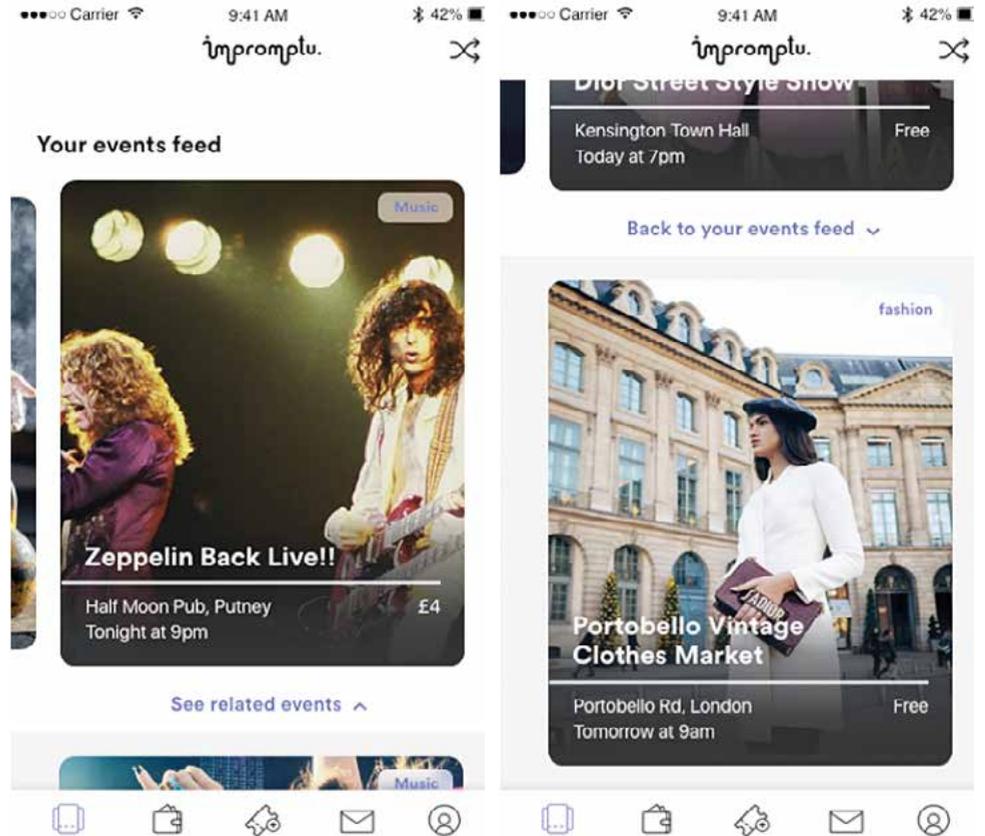
or solely cater to dating/corporate events.

Our solution to this problem was the development of a peer-to-peer (p2p) events platform which tempts users with random events involving people nearby. When thinking about potential USPs, several points were crucial to us. Variety was the first; our own experience had shown that Google was a powerful tool to do specific things but broadening horizons by doing new things was not as easy. Spontaneity was the second; despite the wealth of opportunity London offers, finding

"The inspiration for the app stems from our time as students at Imperial"

things to do at short notice is famously problematic. The third was cost; we are both passionate about ensuring students and charities have free access. As cheesy as it may sound, our motivations are centred on enhancing the student experience. These USPs were bolstered by the creation of a unique x/y browsing interface, and some unique code which we are not at liberty to discuss at this moment.

Practical examples of Impromptu's use might entail coming out of work with the evening free and no plans in place. A simple browse of the user interface will provide a host of interesting options. One might find someone keen on playing tennis



Impromptu is launching to Imperial students in two months' time // Impromptu

"Our solution to this problem was the development of a peer-to-peer events platform which tempts users with random events involving people nearby."

and needing a partner, a group of girls looking for another to join them for a movie, a tourist in town looking for a local to share a drink with, or perhaps, even a group of

friends happy for others to join them watching the football. Furthermore, the nature of Impromptu will benefit amateur

"Our motivations are centred on enhancing the student experience."

promoters, university societies and charities (think recruiting people to food drives etc.).

The concept lends itself to any city or town with a university. Our predominant user base will comprise students and young professionals aged 18-30. We also endeavour to engage local businesses that cater to this demo-

graphic. Social media will play a major role in our marketing campaigns but we really hope that Impromptu will grow organically and build a loyal userbase. We have plans that will enable the app to evolve with reference to content and to different demographics. We look forward to sharing this information in the new term along with updates of our progress over the summer.

We are on target to launch during Freshers' week. Prior to this we will be group testing for 6 weeks. **If you would like to be a part of this process and have your feedback contribute towards the final product, please forward your email address to impromptusocial@gmail.com**

Have a great summer break and join us in September....



Spontaneity is at the core of the app // Impromptu

MUSIC

music.felix@imperial.ac.uk

The noisy, discordant sound of history: Black Midi

MUSIC

BLACK MIDI



Support Artist: Rattle.
Venue: EarthH. Date: 18th June 2019.

Jonathan Lu
Music Writer

Black Midi had released very little music as I walked down the steps to the EarthH concert hall. In fact, when I first heard of the band from a friend of a friend of the band at a gig a year ago, they had released no music at all.

Much of the band's following has been formed in a similar way, through word of mouth. Their enigmatic presence turns their live shows into an exclusive experience, a rare feat in the modern age. For much of the set the band is in darkness illuminated only by a faint red, occasionally pierced by strobe lights like lightning in a thunderstorm.

The band say nothing between songs; in fact there is barely a second in the entire set when they aren't playing, making it difficult to tell when each song starts and ends. The only music played between the set and opening act. Rattle comprises of droning synths. The only personality the band show is while playing.

"A chaotic amalgamation of noise rock, math rock, no wave, and experimental rock"

Vocalists/guitarists Geordie Greep and Matt Kwasniewski-Kelvin wear cowboy hats. Towards the end of the set Matt falls while jumping off a raised section of

stage holding Morgan Simpson's drum kit and kicking it away, meanwhile Geordie throws what I can only guess to be a carpet tile across the stage. Their guitars are left face down on the stage at the end of the show while bassist Cameron Picton helps stagehands clean up. At the start of the second song Geordie peels a banana and takes a bite out of it before throwing it back and singing the first verse; after the show I catch a glimpse of him finishing it backstage.

Even with their lack of released music a respectably large crowd fills their sold-out show in the EarthH concert hall, after all they have been called "the best band in London" by the NME. One thing is certain however, Black Midi have not gained their following through the accessibility of their music.

The band's name refers to the act of using MIDI files to remix songs to contain a huge number of notes. And they live up to their name, a chaotic amalgamation of noise



Yee-haw // Jonathan Lu

rock, math rock, no wave, and experimental rock held together by Morgan's aggressive drumming (described as "the best drummer in London" by the same fan who introduced me to the band). Geordie's voice is nigh on incomprehensible, varying between an almost spoken word style and high-pitched howls while Matt delivers his own post-hardcore screams. Between the angular guitar riffs and heavy dis-

torted basslines there are several moments where the band comes together to form an explosive wall of pure discordant noise. Actually, for the majority of the show this is the case.

Nobody in the audience seems to mind. Despite the fact their music could reasonably be described as "painful", there is a sense within the crowd that something great is being witnessed; a feeling that, through the searing

avalanche of sound, history is being made. Some claim modern rock is dead, that the genre has become stagnant, continuously recycling and diluting sounds until nothing original is left. By the time Black Midi walk off stage any notion of this has been utterly obliterated by a sledgehammer forged from a fire of screeching guitar noise.

Reverb: society events made easier

MUSIC

Emem Umoh
Music Writer

As the year draws to a close, many societies will begin the transition to a new committee. Running a society at Imperial is not easy, and perhaps the hardest part of running a society is planning the associated events. A lot of things have to be taken into consideration when preparing for them. You

want to plan events that not only engage your current members, but are also inviting to new members and give the wider community a glimpse of what exactly your society is about.

We're going to put it out there. Planning events isn't easy. If you're not struggling to book a venue, you're emailing external speakers, or perhaps even trying to convince your members to come – the list really does go on. However, what I've found is that one of the most understatedly

difficult choices to make when planning an event, is choosing what platform to host your tickets on. The process and ease of ticket procurement sets the tone for the rest of the event. An easy and smooth ticket purchasing process puts the customer at ease, and incites excitement for the event.

You might choose Eventbrite, or you might choose to sell through the Union. Using the Union, you don't get the revenue from ticket sales until after the event has taken place. What happens if you

need the money urgently, for example to book the venue? Damn. On the other hand, when using Eventbrite, the company takes a percentage of the revenue from your ticket sales AND they don't give you the money until after the event has been held. Double damn. What if we told you we have the solution to your problems?

Reverb is a ticketing platform made by students. We are a professional, creative team of undergraduates who understand (trust me, we do)

just how hard it is to plan events. We know the kind of experience and vibe you want your members to have when they attend your events, and we are passionate about helping you execute that vision. Our passion is managing behind-the-scenes details so our clients don't have to worry about them.

With Reverb, we provide tickets at a lower cost than all our other competitors (we've done all the research, so you don't have to). In addition, we have early pay-out options, which provide

you with a variable proportion of revenue from ticket sales before the event has been held. This helps you improve your short-term cash flow position, so you have the funds needed to improve your event. It's a win-win for everyone!

If you're interested about finding out more about Reverb, or you'd like to register early interest, visit our website reverbintl.com. We can't wait to hear from you guys!



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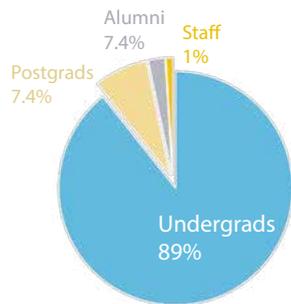
felix sex survey 2019



It's that time of year again - time to compare, contrast and compile your scandalous shenanigans and frisky fetishes in this year's Sex Survey. We've received a whopping 1768 responses to our call to arms, from a wide cross-section of the Imperial populus. Our committed team of Felix reporters turned 'sexy-time' investigators (STIs, if you will) have spent the better half of yesterday trawling through all the data, filtering through all the responses to make sense of all your bedroom shenanigans. To be quite honest, some of the responses to the survey were, well, unconventional, but we're not here to judge. However, we might be signing up for Counselling. This year, we thought we'd switch up our writing style just a smidge (why take things seriously when none of you lot did).

So, without further ado, here's the 2019 Felix Sex survey.

As with everything vaguely fun at Imperial, undergraduates are overrepresented in the Sex Survey this year, comprising nearly 90% of respondents. Shoutout to the 9 people who identified as other - not sure how you can other yourself in this category, but thanks for your input anyway! We're assuming you're just unemployed.

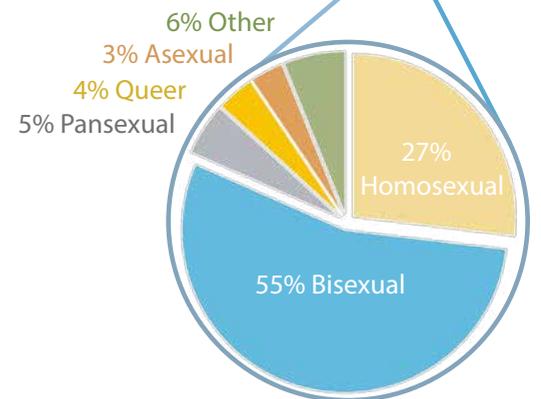


Who took the survey?

Assuming our very scientific sex survey is indeed indicative of Imperial as a whole, then the skew in the male:female ratio (61:38) should come as no surprise to anyone. Non-binary (don't identify fully as male or female) account for 0.9% of respondents, and 0.4% of all participants identify as a gender different to what was assigned to them at birth.



Which way do you swing? Well, most Imperial students (78.6%) identify as straight, with the non-heterosexual component taking up the remaining 21.2%. These include people identifying as bisexual (11.6%), homosexual (5.7%), pansexual (1.1%), queer (0.8%), asexual (0.7%) and other (1.3%), as unfortunately our list is not nearly comprehensive enough to include other possible sexualities (e.g. demisexual, aromantic, etc.)

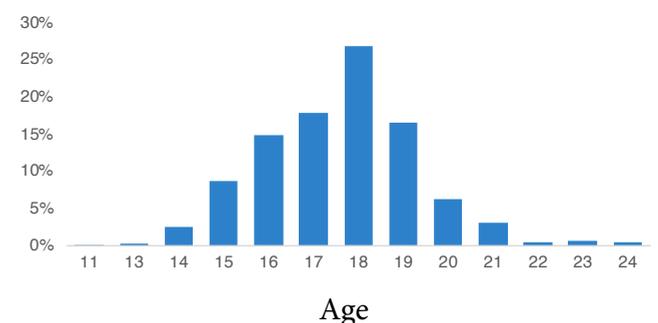


sexuality

Virgins



Contrary to popular belief, most Imperial students have indeed had 'the sex'! In hindsight, this would actually make sense, given that it's a good form of exercise (finding a sexual partner that is, but also the sex part). The data suggests that the average Imperial student loses their virginity at 17 years, 7 months and 27 days, at approximately 2:24 in the afternoon, give or take a few decades. This would indicate that the average Imperialist pops their cherry just in time to start uni - maybe to prevent appearing inexperienced following their first conquest at Sports Night.



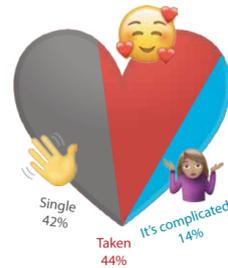
Relationships

Is you is, or is you ain't my baby?

Who's single and over-eager to mingle? Who's up for datin' and/or fornicatin'?

Again, shattering stereotypes of Imperial students, the minority of respondents find themselves lonely at night with no one but their pillows for comfort. This is, of course, assuming they don't sleep in the library.

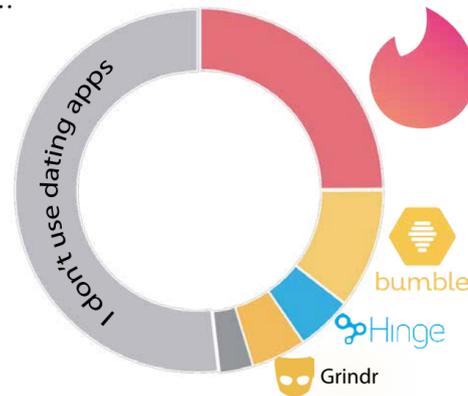
Of the 1104 respondents to this question, 45% of survey respondents claimed to be single and ready to mingle. 46% of you claim to only have one person in your lives, whilst 4% have more than one main course on your plate. There were a few of you who seemed to be confused as to your relationship status, such as those of you in 'situationships'. Of course, there's also the small contingent of you who might be married, but you didn't say so we'll assume you're still free as birds.



Dating

How do Imperial students find a hot date? The majority of you don't, apparently, if we're going by your use of dating apps. But maybe we're wrong, and you're more of a face-to-face person yourself, with your charms and social skills...

Of the platforms used, Tinder is the campus favourite, with Bumble following up a bit further behind in second place (can you really blame the women here though?). Hinge and Grindr are equally popular - suggesting the number of people searching for a meaningful relationship is the same as the number of gay people looking for a hookup. It's basic science.



Cheating

What do Imperial students consider cheating? Thank you to the number of you who said 'plagiarism' and 'taking your phone into exams'; we appreciate you staying on brand. The rest of you who have been better socialised generally....

Interestingly a few of you don't agree that penetrative sex doesn't constitute cheating, which is rather interesting - no judgement, though. It's just, interesting.

About 22% of respondents have admitted to cheating - this is a tricky one, as the definition of cheating differs between individuals and relationships (so some of you who said no might actually be adulterers in denial).

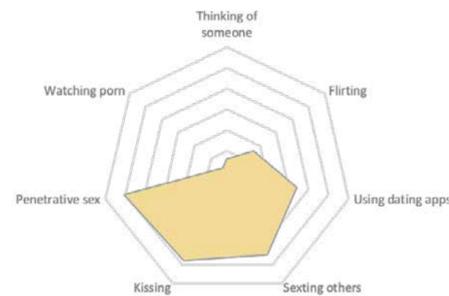
Of course, your reasons for cheating are very different - here are a few of your excuses:

"I forgot I was technically dating the guy, he was fuming when I walked into where he works with another guy"

"My gf was a lesbian"

"I forgot I was technically dating the guy, he was fuming when I walked into where he works with another guy"

"Mind your business" (a lot of you said this, which begs the question, do you understand the point of a survey?)



Sex Songs

The Pokémon Theme Song

Ding Dong Song (You Touch My Tralala) - Günther

Anything by The Weeknd

'The sound of her moaning'

Use Me - Bill Withers

Promiscuous - Nelly Furtado

Thank u, next - Ariana Grande

Porn



Favourite porn category?

60fps

"The ones where the people look nice"

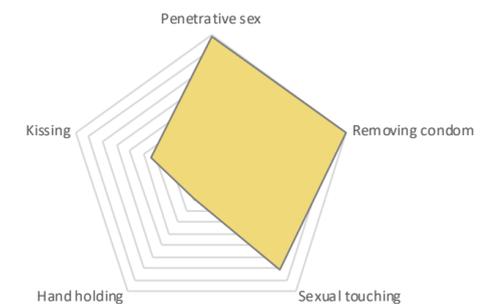
"female friendly - because normal porn is boring"

"i don't enjoy it, i just watch anything in the hopes that i'll feel something"

"I really don't have to watch porn and I won't even bother getting a VPN for that."

"The videos of Hezbollah"

Sexual Harassment



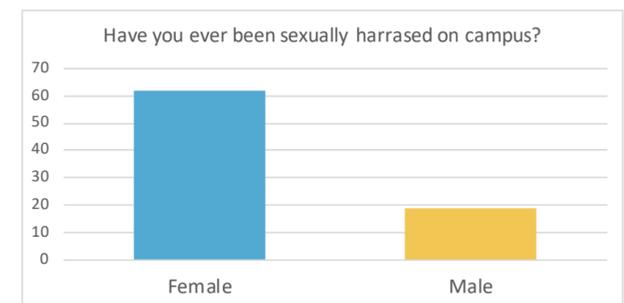
Why did you cheat?

"I forgot I was technically dating the guy, he was fuming when I walked into where he works with another guy"

"I fucked one of my best friends, my gf wasn't happy but he had a huge cock, I'm a naughty boi"

"I fed another person by sicking down their throat like a mother penguin"

"My gf was a lesbian"





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Yu (Ronnie) Zhang • Zack K. W.

— Keep the cat free —



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Back Row - Imraj Singh (Sports Editor), Henry Alman (Science Editor), Lisa Hey (Puzzles Editor), Chimdi Igwe (NegaFelix), Rhi

Adrian LaMoury (Music Editor)

Not pictured: Joanna Wormald (Deputy Editor), Frank Leggett (News Editor), Rosie Dutt (Science Editor), Eyad Abuelg

Divyen Vanniasegaram (Politics Editor), Sung Soo Moon (Film Editor), Aidan Chan (Film Editor), Claire Chan (Arts Editor), Hel

Jingjie Cheng (Books Editor), Connor Winzar (Games Editor), Anthony Onwuli (Games Editor), Krithika Balaji (Tech Editor), H

Joana Correia (Travel Editor), Aina Naim (Travel Editor), Tom Alston (Investment Editor), Xerxes Chong Xian (Investment Editor), Joseph

Anand Krishnakumar (Copy Editor), Jia Qi Tan (Copy Editor), Jonathan Robert

ARTS

arts.felix@imperial.ac.uk

A Midsummer night's dream

The Bridge Theatre brings us an ambitious, funny and immersive production of William Shakespeare's play

ARTS



Where? The Bridge Theatre
When? Until 31st August
How Much? From £15 for students

Maria Marques Portela

Arts Editor

There is no line between audience and stage at The Bridge. Or rather, there are multiple lines, but they are constantly changing, with raising platforms, movable staircases and rolling beds; the actors jumping to the middle of the crowd or shouldering an unsuspecting audience member. The action happens all around and above the stage, and you have to be part of it, move with the sets and make way for the next scene. Don't worry, nice and helpful crew members will be around to direct you! However, sometimes this means you will miss one or two sentences from the play, and that you have to choose smartly where to stand or else you might find your

"one-meter-sixty" self behind an annoyingly tall guy. Theatre meets strategic planning. Unless, of course, you opt for one of the seats in the galleries, where such problems don't exist.

"There are multiple lines, but they are constantly changing, with raising platforms, movable staircases and rolling beds"

This means the action is always performed very close to the audience. A daunting task to which the actors respond beautifully, giving life to their characters often just a few centimetres away from scrutinising eyes. David Moorst as Puck, the naughty fairy, is particularly impressive, able to keep his impish tics and posture even while boasting some aerial circus skills.



"Oberon, the Fairy King, who is enchanted into falling in love with a man turned into an ass" // Manuel Harlan

Hammed Animashaun as Bottom is purely adorable at all times and probably responsible for the louder laughs of the evening. Sure his character was meant to be comical, but his knowing winks and expressiveness added a new layer of amusement.

Some roles in the original play are swapped: it is Titania, the Fairy Queen, who uses the love-in-idleness flower to manipulate four young lovers through a series of misunderstandings, and Oberon, the Fairy King, who is enchanted into falling in love with a man turned into an ass. A cheeky way to re-examine the power balance in the relationship between their mortal counterparts, Theseus, Duke of Athens, and Hippolyta, leader of

the subjugated matriarchal tribe of the Amazons. And, of course, an excuse to have a shirtless dance from Oliver Chris, and a lovely mischievous grin from Gwendoline Christie.

"A cheeky way to re-examine the power balance in the relationship between their mortal counterparts"

All other cast members were brilliant in their



"The action happens all around and above the stage, and you have to be part of it" // Manuel Harlan

roles: the relatable "rude mechanicals", honest and well-intentioned, the only ones unaffected by the magical events of the night; and the fairies, a troupe of glittering, tight-fitted dancers who enter and marvel with their aerial and pole stunts.

The technical aspect of the performance is as well polished as the acting. From act to act, the stage gradually turns into a wild forest, with ivy growing on the props, mysterious fog, nighttime animals' sounds, and an expressive balance of darkness and light. The costumes are gorgeous, all timings are perfect and the music either builds the required ambience or is in itself a comical element.

Overall, this is a truly amusing produc-

tion. Greatly thanks to Shakespeare's genius in devising such a convoluted plot, with all its witty remarks, word plays and unexpected turns, but also thanks to fun acting gags, a clever choice of props, metatheatrical references, and a turning of the pit into a party dance floor.

Of course, it could all have just been a dream.

"Of course, it could all have just been a dream"



"The costumes are gorgeous, all timings are perfect" // Manuel Harlan



"A lovely mischievous grin from Gwendoline Christie" // Manuel Harlan



"David Moorst as Puck, the naughty fairy, is particularly impressive" // Manuel Harlan

GAMES

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E3 - You've heard of the good releases that came from

With some of the good releases that arrived with E3 came some that didn't quite meet the mark- featuring mobile games galore, surprise TV shows, false advertising to kickstarters, and more! Being the hypefest that E3 is, not everything lives up to the standard set by fans that is not being a blatant cash grab!

GAMES

Connor winzar
Games Editor

E3 has always been Christmas for gamers, with plenty of good releases that fill you with surprise and wonder, as well as a fair handful of bad releases, the ones that make you question how the marketing directors keep their jobs. Now, I can imagine most people have heard about some of the better releases like Cyberpunk 2079, Doom Eternal and Watch Dogs Legion, and that's why I wanted to focus on the

less thrilling events that transpired during E3, so let's get right into it.

Stepping up to the plate first is the announcement of more human NPCs and a battle royale mode in Fallout 76, which was somehow met with a great deal of applause. Let me elaborate, when your audience is applauding you for having more human NPCs in a game, it speaks volumes about the already poor quality of your game, especially given the past controversy that has followed Fallout 76. So, to suddenly hear the applause for such a simple addition to an already very broken game is saddening to say

the least. What would have been better is an announcement that they were going to actually make the game playable, as opposed to adding a battle royale mode and a few human NPCs. All-in-all, it's a depressing feat in itself.

Now I like to consider myself a man of finer things, those finer things being binge watching *Always Sunny In Philadelphia* and learning bird law. However, I was by no means anticipating Rob McElhenney (Mac) coming onto the stage in all his muscle-bound glory and revealing a new show during the Ubisoft conference. Despite pos-



Game aesthetics that only a developer could love // Wikimedia

sessing the same charm and charisma as his acting role, it seems that gaming fans were not thrilled by the announcement due to it being a show as opposed to a game. The

“When your audience is applauding you for having more human NPCs in a game, it speaks volumes about its already poor quality”

show itself is focused around the life of game developers and features the likes of *Community's* Danny Pudi and *Always Sunny In Philadelphia's* David Hornsby. The response from gaming fans is expected given E3's predominant focus

on gaming as opposed to any other media, regardless of if they relate to a game. Regrettably, Rob's charm couldn't win the fans over.

And with that unfortunate tale told, I shift my cynicism towards the blatant cash grabs of E3. Now by cash grabs I'm not referring to the classic triple A titles with horrific micro-transactions - looking at you EA. Thankfully, this E3 dodged that matter only to swerve into the oncoming truck that is mobile game releases, which are notorious for their micro-transactions and supposedly 'free' price tag. Just like the degradation of the *Command and Conquer* series to a mobile game, another IP received the same treatment, *Commander Keen*, originally a classic on the MS-DOS in 1990, the once sacred childhood memories have now been desecrated with its return as a mobile game. Now I understand that a mobile game on its own is perfectly fine, however, more than likely micro-transactions will

be applied to this game in another blatant cash grab. So for those who were gaming back when it was initially released, get ready to play it again with none of the original

“E3 Dodged triple A micro-transactions only to swerve into the oncoming truck that is mobile game releases”

vintage pleasantries and all of the cash grabbing mechanics that come with the modern age; fingers crossed that it doesn't turn into a raging dumpster fire.

Speaking of blatant cash grabs, another mobile game to unpleasantly surprise fans is the very much undesired pop vinyl mobile game featuring

GAMES

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E3, now get ready to read about the downright awful!

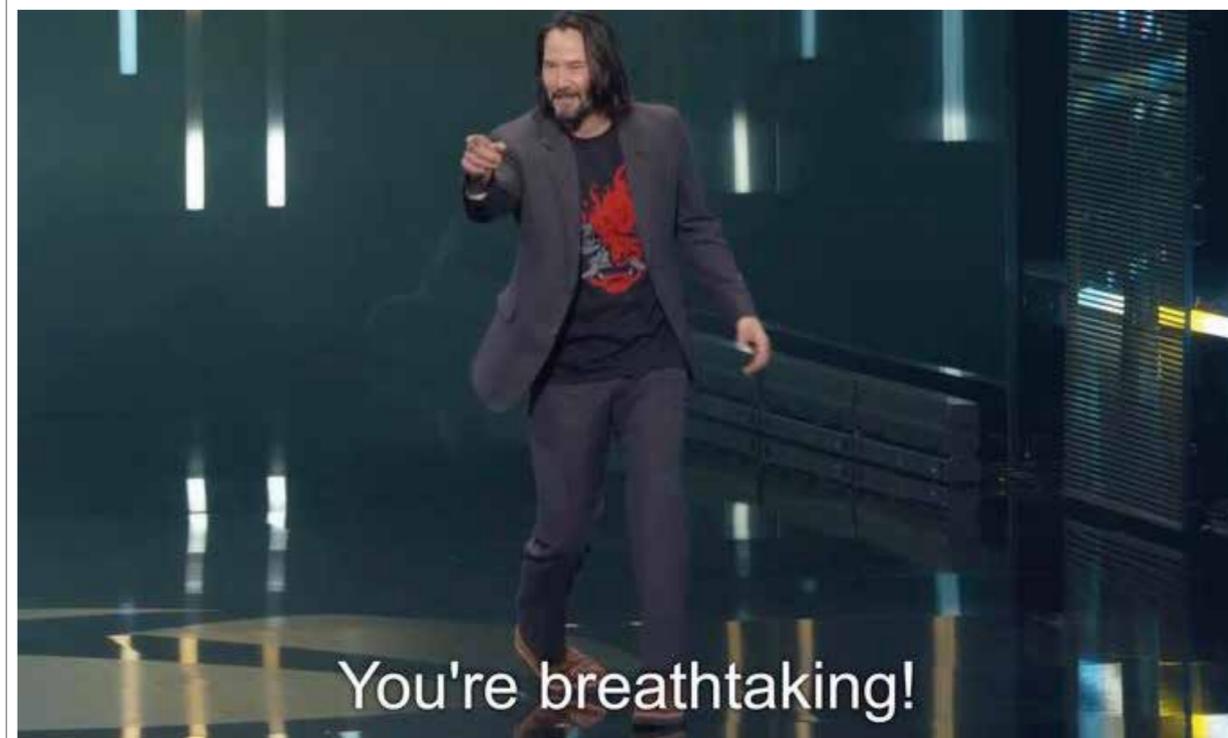
Gears of War. Honestly, I don't know what was going through their minds when they made this but it was most likely dollar signs at this point, but at least they announced another Gears game rather than what they did to Sam Fisher (from the Splinter

“Network hero returned only in mobile game form instead of an actual triple A title”

Cell franchise). What happened to Sam Fisher, you ask? Well I want you to imagine this - you're a hardcore Splinter Cell fan and have been waiting for another addition to the series since its last release in 2013, suddenly a news notification appears on your phone with the text “Splinter Cell's Sam Fisher returns...” your eyes lighten up only to realise that he's now an add-on character in a new Tom Clancy mobile game.



Ryo Hazuki also looks down on mistreating fans // Neilo & Ys Net



Even in low resolution Keanu Reeves is just as beautiful on printed paper as he is on stage // Xbox

So, long story short, fans were, as you would imagine, very disappointed with the news as their *Network hero* returned only in mobile game form instead of an actual triple A title; something which developers thought

adequate to boast at E3 as opposed to announce it any other point in the year where the spotlight wouldn't be as near as bright, nor focused.

Developers of *Shenmue 3* should have taken that advice when

they abruptly announced to their Kickstart funders that they were now being funded by Sony and that the game was also going to be an epic store exclusive. Refusing to offer refunds to said Kickstart funders, they claimed that their money was used to show interest in the game as opposed to fully fund a new entry to the series. With blatant dishonesty also being shown by the fact that *Shenmue 3* already has a Steam Store page, yet the developers have now gone back on their word to crowdfunders with its exclusivity to the Epic Store. Here's hoping that the refunds eventually come through.

What may not be received particularly well are reboots of the *Battletoads* and *Contra* series which both look fairly awful, to say the least. Having seen better days,

the *Battletoads* reboot features Rash, Pimple, and Zits in cartoonish form, the game looks like it plays similar to the originals, but by no means does it catch its aesthetic. *Contra*, on the other hand, plays very differently from its predecessors and looks nothing like it, bearing

“All in all, E3 could have gone a lot worse and, even then, it was made up for by some absolutely brilliant releases”

the name of *Contra* in TM fashion, it appears to be a blatant cash grab.

All in all, E3 could have gone a lot worse and, even then, it was made up for by some absolutely brilliant releases, but what truly won my heart was the *Devolver* conference, which took jabs at multiple companies and even going so far as to release a new game which is a bootleg collection of its other games. Presenting itself in a cinematic fashion that continued on from its previous conference in 2018, *Devolver*, came across as comedic but not cringey (looking at you *Anthem* conference, dear God that was painful to watch). With new horizons being sailed towards in the gaming industry, I'm looking forward to see what comes of it.



Nuclear Winter, I hope it's warmer than the cold shoulder given to their fans // Bethesda

TELEVISION

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When They See Us: Ava DuVernay's 'Central Park Five' mini-series asks us to bear witness to painful truths

TELEVISION

WHEN THEY SEE US



Director: Ava DuVernay.
Details: Four episodes, 64 minutes each, available on Netflix now.

Indira Mallik
TV Writer

At the outset of *When They See Us*, we meet a group of young Harlem boys. Kevin Richardson (Asante Blackk), the youngest, is a musical talent encouraged by his older sister to put Spring Break to good use - he could be as good as Miles Davis one day. Korey Wise (Jharrel Jerome) is sixteen and in the throes of a high school romance. Along with Yusef Salaam (Ethan Herisse), Raymond Santana (Marquis Rodriguez) and Antron McCray (Caleel Harriss) they join in with a throng of boys headed to Central Park. At dusk, dozens strong, this crowing, joyful crowd runs into the park, raising a ruckus in their wake. Even without prior knowledge of the real-life fates of 'The Central Park Five' we expect tragedy to strike because we are conditioned to know that especially in film, but also in life, unbridled shows of freedom rarely go unpunished, particularly not for kids who look like Kevin, Korey, Yusef, Raymond and Antron.

In the park, jubilation quickly sours to something with an edge - scraps break out amongst the group; when the police show up, the boys scatter, stumbling through the undergrowth. Unbe-

knownst to them, across the park, Trisha Meili (Alexandra Tipler) has been dragged off the path whilst jogging, brutally raped and left for dead. Faced with the task of finding Meili's assailant and with no leads save for a conference room full of black teenagers arrested for "unlawful assembly", Detective Linda Fairstein (Felicity Huffman) seizes an opportunity.

What follows is a lesson in the lethal chasms in modern American life. Fairstein, who is white and middle aged, is unable to correctly parse the slang phrase "wiling out", written on a report of the boys' activities, to mean "acting out". Instead, she becomes convinced the children were "wilding". The kids held in custody quickly turn from possible witnesses to the rape to probable suspects. Fairstein condemns the twelve and thirteen year olds out too late, to be feral animals on the rampage. With swift and profound venom she labels the children, whose names she cannot remember, thugs and predators - scum to scrubbed away.

During the four part series, we witness 'The Central Park Five' being convicted, imprisoned, and then in 2002, acquitted after a spontaneous confession from a serial rapist. Ava DuVernay's emotive direction which puts the viewer in the place of the five accused, makes *When They See Us* intensely painful viewing - I found it difficult to watch each episode all the way through in one go. Beyond an indictment of the police officers who intimidate and lie to force confessions from the teenagers, this mini-series is wider commentary on



Aunjanue Ellis and Ethan Herisse in *When They See Us* // Atsushi Nishijima/Netflix

the power of privilege in America. Huffman proves a genius bit of (unintentional) meta-casting, as her real life college admissions scandal simmers off screen, her presence is a constant reminder that the law views all as equal, but some more equal than others. The young actors playing the principal five are extraordinary in portraying children whose innocence is quickly chipped away by pain, amongst them, Jharrel Jerome, who played adolescent Kevin in *Moonlight*, gives a particularly shining performance.

Quite by chance this week I was reading about Charles Foster, an Oxford professor who lived a summer as a badger (including eating worms and crawling about on all fours through the Welsh countryside). Foster, by his own explanation, had undertaken this unconventional exercise as a way of stripping away the trappings of what it meant to be human - to ally himself with the bestial parts of his being (though not of

course, it must be said, to the extent of eschewing a book deal or several interviews with high profile national newspapers). I couldn't get Foster out of my head as I watched *When They See Us*. What better delineates what privilege really means? A white, well regarded lawyer, spends months in a dug out "sett", feasting on worms and is called an eccentric, profound, free thinker; a group of black children from the projects come home late from school and are called savage animals by public officials, and locked away for decades for a crime they did not commit.

"When the police want what they want, they will do anything"

"When the police want what they want, they will

do anything", Antron's father tells his son in one of the most powerful scenes of the first episode, begging him to falsely confess: "They will lie on us. They will lock us up. They will kill us". Those of us who have never had to live under the oppression of being institutionally cornered, have never had the burden of knowing that truth means nothing in the face of the colour of one's skin or where one grew up, can never really understand the trauma that inflicts. DuVernay's filmmaking confronts each viewer with the desperation of a life like this.

"They will lie on us. They will lock us up. They will kill us"

The greatest tragedy of *When They See Us* lies in

the realisation that so little seems to have changed since 1989. In the United States today, black Americans are five times more likely to be incarcerated than white Americans. In 2015, though African Americans and Hispanics made up approximately 32% of the US population, they comprised 56% of all those incarcerated. Far from being consigned to history, thirty years on from the Central Park jogger case, the spectre of justice inequality between those who have societal power and those who do not looms just as large.

"The greatest tragedy lies in the realisation that so little seems to have changed since 1989"

FOOD

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Whisk Desserts: A delightfully decadent all-dessert pop-up in Angel

We all know that no matter how much you've eaten, there's always room for dessert... but what if your entire 3-course meal was just that - dessert? Arts Editor, Claire, reviews this sweet pop-up just in time for summer!

FOOD

Claire Chan

Arts Editor

As term ends (at last!) and summer makes its approach, we can all take a well-deserved break from the daily grind of revision and exams. Holidays abroad, lazing around in the sun, ice cream in the park - what could be better? On your list of indolent summer indulgence should definitely be Whisk Dessert Bar, a pop-up restaurant in Angel which serves up a three-course meal consisting only of desserts. That's right, dessert

for the appetiser, dessert for the main course, and dessert for... dessert. It's the dream for anyone with a sweet tooth!

The brainchild of entrepreneur Randon Burns and top patisserie chef Simon Jenkins, this is actually Whisk's second summer running - their pop-up in Bethnal Green last year was so successful they just had to make a comeback. Their new location in Angel is spacious and very chic - dark wood and mirrors, black-and-white tiles and leather seats. It gives off the air of an elegant diner. With Nat King Cole and sensual jazz playing while you eat, it's an excellent place for a date. We had what, in my opinion, was

the best seat in the house - right next to the full-length window on one end of the room, where we could watch the evening melt into dusk over Islington High Street.

The food itself is fantastic. Simon Jenkins, the main man in the kitchen, is an award-winning pastry chef most recently named the Craft Guild of Chefs' *Pastry Chef of the Year* in 2018. The three-course menu he has created is full of innovative flavour pairings and intriguing twists on old classics. You get a fixed starter and dessert, but get to pick from one of six desserts for your main course. For a little extra, you can sample one of the teas or dessert wines specially picked to complement each main course.

Things got off to an exciting start with the amuse-bouche, which was strawberry jelly, vanilla yoghurt mousse and lime foam. The lime foam dissolved into nothingness on the tongue, leaving just a hint of lime to accompany the strawberry and vanilla mousse.

Parsnip ice cream and horseradish zest? Not something I'd ever think of putting in dessert, but there it is on the menu as part of an orange-chocolate confection. Something to try the next time I'm back! I had a beautifully light vanilla parfait with fresh berries, aged balsamic vinegar and basil (though it could have used a little more basil flavour), while my dining companion had a very yummy deconstructed rhubarb crumble. The warm roasted rhubarb, sinfully

rich custard cream, cold verbena ice-cream and crunchy deep-fried ginger topping were a texture and flavour explosion in a spoonful!

Two items on the menu are signature dishes from last summer - desserts with a savoury twist. Avocado-white chocolate mousse with torched sweetcorn and a chai chilli dressing, or the raved-about celery sorbet with crumbled blue cheese and fresh honeycomb. I very nearly went for the blue cheese myself, but was prevented from doing so by my long-standing hatred of celery. Fortunately, Randon brought out one of the new dishes-in-testing for us to have a sneak preview. Whisk's menu will change over the course of the summer to incorporate seasonal produce; what we sampled was a watermelon sorbet with feta cheese, a remix of the classic watermelon-feta salad. Actually my favourite item of the evening. The light and cold watermelon sorbet fills your mouth while the more solid crumbles of feta cheese do little taste explosions of saltiness on your tongue. Throw some pomegranate seeds into the mix and you've got a winner for summer.

"Little taste explosions on your tongue"

We finished off with some little petits fours: a perfect, tiny lemon madeleine, silky milk chocolate truffle and strawberry paté



Delicious vanilla parfait with an assortment of summer fruits and soft meringue // Claire Chan



New dish preview: Mouthwatering watermelon salad with feta, pomegranate and watermelon sorbet // Claire Chan

de fruits.

Plating is very pretty; each dessert comes on a different style of plate designed to fit it. Even the tea is served in delicate glass cups and saucers from JING, with a tiny

hourglass tea timer for the perfect brewing time. With the relaxed ambience and exquisite desserts, it's a Michelin star fine-dining experience without the exorbitant prices. One for the summer list!



"Even the tea is served in delicate glass cups and saucers from JING, with a tiny hourglass tea timer for the perfect brewing time" // Claire Chan

SUSTAINABILITY

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No Silent Spring with Extinction Rebellion

Extinction Rebellion movements are the counter-culturalism of the 21st century



Extinction Rebellion made Central London stop to consider climate change for ten days in April // Artur Donaldson

SUSTAINABILITY

Artur Donaldson
Sustainability Editor

The past nine months have seen the birth of Extinction Rebellion in the UK, the global school strike for climate movement and, of course, the weekly Sustainability column in Felix. Before the newspaper goes on hiatus until October, it seems only fitting to report on the events which, to a large extent, played out just across the park from Imperial College this April.

The aforementioned environmental movements are a counter-culture of the 21st century, opposing

“Extinction Rebellion echoes the message of the Campaign for Nuclear Disarmament”

the elements of society they see as culpable for environmental damage and the present climate crisis, much as the counter-cultural movement of the '60s opposed war, particularly the nuclear variety. The first environmental movement arose in response to the over-use of the insecticide DDT,

whose unintended threat to human and natural life was made known by the biologist Rachel Carson in her book *Silent Spring*. Is the most recent wave of activism anything new? Are Extinction Rebellion, and related movements, having a meaningful impact?

As with the movement against DDT, science has been the trigger for recent protests. Extinction Rebellion cites the 2018 Intergovernmental Panel on Climate Change (IPCC) report, which predicts that emissions of greenhouse gases must reach net zero by 2050 in order to avoid a heating of more than 1.5 degrees Celsius, as one of their sources of motivation. Extinction Rebellion echoes the message of the

Campaign for Nuclear Disarmament when they argue “humanity, as well as life on Earth, is facing a ‘direct existential threat’”. Extinction Rebellion has re-framed the debate on climate change and added urgency to the discourse on climate change. Secondly, it promotes active participation in tackling the climate crisis. The decentralised networks that it builds up in the preparation for the protests give spaces for communities to meet and campaign on environmental issues. This physical interaction, lacking in one-way dissemination of information via traditional and social media, may help to achieve the changes in lifestyle and culture that the IPCC argue “have a

considerable influence on energy use and associated emissions”, and may influence new groups of people such as high street shoppers. Direct action forces want to act as a representative of the environmental movement not just as a citizen, but also as a friend, child, parent, employee, or employer. Of course, activism alone won't achieve the decreases in emissions necessary to avoid a long-term warming of 1.5°C, but equally an economy geared for exponential growth and legislation supporting this will fail.

Unarguably, the Extinction Rebellion movement is controversial. Their policy of advocating non-violent civil disobedience saw 1130 arrests in

“Extinction Rebellion has reframed the debate on climate change and added urgency to the discourse on climate change”

ten days from activists. So far seventy people have been charged but police have admitted that they have limited sentencing powers for further arrests.

SUSTAINABILITY

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“Bottom-up approaches from environmental movements can help to create communities to facilitate changes in lifestyle”

The actions have included acts of rebellion ranging from unfurling a banner saying “don't jail the canaries” from a DLR train in Canary Wharf in response to the role of the financial services in funding environmental destruction, to lining Westminster Bridge with plants during ten days of protest in April. Despite bringing central London to standstill they received a significant amount of support. Just after the aforementioned protests, a quarter of 2000 UK citizens who responded to a poll by ComRes agreed with the statement “I support the aims and



Soup kitchen at Extinction Rebellion also supporting the homeless // Artur Donaldson

tactics of Extinction Rebellion”, the majority (43 %) responded that they didn't know, and a third disagreed.

These mixed responses suggest that environmental movements have the potential to be divisive. Unlike avoiding nuclear war, the benefits and costs of climate change mitigation, the challenges in achieving it, are less obvious. I spoke with a Green party candidate at a later protest who argued that, to achieve a zero-carbon economy by the IPCC deadline of 2050, the UK needs to invest in wind and solar generation, but was unable to give any figures to support his argument nor to counter the challenges of supply and demand, the greatest challenge at present. Giving people facts is key. Human activities have caused a rise in global temperature of one degree Celsius since pre-industrial times. Students and academics have the ability to testify to these facts, and these facts need to be heard on the streets.

Furthermore, civil disobedience can exclude people who could lose the right to work, study or the ability to pursue a certain profession should they be charged. When I visited the protests at Marble

Arch, many protesters seemed to be in fairly financially secure situations and of a left-leaning persuasion. Though the movement describes itself as non-partisan, some of the messages mixed the separate issue about Brexit with the climate debate. In a country which voted, rightly or wrongly, for an exit from the EU, mixing issues which are not related is dangerous. If too much emphasis is placed on tactics which exclude participation of certain members of society, this could be used to paint harmful stereotypes of the environmental movement such as that of the white middle-class “hippie” or the wealthy, tofu-burger-chomping millennial. Role-models of all creeds, countries and classes exist within the environmental movement and can support those from other sections of society to amplify environmentally positive culture. From Wangari Maathai, the founder of the Green Belt movement in Kenya, to Greta Thunberg, the sixteen-year old standing for the climate outside the Swedish parliament, environmentalists span all ages and continents.

Not all protesters I spoke with at recent environmental protests have a



Extinction Rebellion even installed solar panels at Marble Arch // Artur Donaldson

secure income, and it was clear that efforts had been taken to avoid religious or financial obstacles to participation. Coaches provided free low-carbon travel from all corners of the country to London and a self-organized network of environmentalists provided accommodation. Tongue-and-cheek, one might even say that the protests provided benefits to London. They temporarily installed a solar farm at Marble Arch and provided a full-scale simulation of a zero-emission zone in central London. They also brought social co-benefits, protesters supported the local homeless community by providing free food and taking collections for the poor.

So, is environmental activism an effective strategy to tackling climate change? I argue it has a part to play. Extinction Rebellion has an enormous potential to build communities and place pressure on politicians. But there is a risk it could polarize opinions on the climate change. Uninformed activists can project a damaging image on the environmental issue, and its demand to reduce

greenhouse gas emissions to net zero by 2025 are pretty radical to say the least. However, activism can help to create communities which support changes in lifestyle which may encounter resistance if introduced through legislation. The climate emergency requires action globally, and rapidly. Both top-down and bottom-up approaches are necessary to achieve this.

The public uproar from *Silent Spring* resulted in the US administration introducing a nationwide ban on DDT, though it was only in 1972, a decade after the publication of *Silent Spring* that this came into law. Extinction Rebellion achieved some of its goals more rapidly. The UK government announced a climate emergency on 1st May as a result of pressure from the Extinction Rebellion movement and has committed to net zero carbon

emissions by 2050. But is this enough?

No. Governments alone, through a top-down approach, have limited impetus or ability to make the necessary social changes to tackle the climate emergency. Before 2050 there will be at least six general elections and, as has been shown in the US with Trump's withdrawal from the Paris Agreement, future politicians may not respect words written on paper by current ones. What action “the climate emergency” needs is not yet well defined, but surely a cultural shift means more than banning plastic straws. Bottom-up approaches from environmental movements can help to create communities to facilitate changes in lifestyle, and hold governments accountable to their commitments.

See you next year!

A warm welcome to the Sustainability editors for 2019-20 Anthony Cheuk, Sam Owens, and Xiuchen Xu.

Watch this space and the paperless version of the column at felixonline.co.uk/

INVESTMENT

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Has MiFID II demolished the research industry?

INVESTMENT

Tom Alston

*Investment Editor
ICIS Co-Editor*

At the beginning of last year MiFID II was introduced to make the financial industry more transparent. One key aspect of this is the move from bundled to unbundled products brokerage firms provide. Previously, a fund manager buying a security through a broker would pay a hefty commission. This would cover the cost of putting the buyer and seller parties together as well as the research that the brokerage firm provided to the fund to educate it on which security to buy. The research and transaction were bundled under one cost, hence, the firms provided bundled products. This research would include access to analysts who specialise in specific asset classes and industries, libraries of thousands of research papers as well as of meetings with executives. However, this provides a dark cloud under which these brokerage firms operate. Who do they represent and are they providing the best deal for their customers? This is where MiFID II is supposed to shake up the

“One key aspect of this is the move from bundled to unbundled products brokerage firms provide”



European brokerage firms now have to offer unbundled products // FT

industry. Under this legislation brokerage firms are now obliged to separate the charges for operating the transaction and providing research and additionally show how they acted optimally for their client. Consequently, the two services must be offered separately as an unbundled product. This leads to some very important questions. How do you value financial research? Does this mean the end for brokerage firms? How will this affect the global financial industry? Specialised Firms Before the implementation of MiFID II, with the financial industry travelling in such an ambiguous direction, uncertainty was ripe. Brokerage and research firms knew there was a rocky road ahead. As Bloomberg Intelligence analysts Alison Williams and Sarah Jane Mahmud report in their article at the end of last year, MiFID II: Financial industry's disruption on a global scale, “Investor relations may need to scale up activities with fewer analysts covering fewer companies.” Essentially, they highlight that research firms will need to refine and specialise their

research to remain unique and competitive following the introduction of the legislation. So have their radical expectations been met? It has certainly had a global effect. A recent report from Greenwich Associates found that many US investment managers are contemplating, under pressure from their clients, unbundling. This is thought to be due not only to the fact that any fund manager moving money for European clients has to comply with MiFID II but also the increase in transparency is seen as the way forward in financial legislation. MiFID II is also reshaping the industry. With research firms having to offer more bespoke services to clients, meaning fewer analysts covering a specific niche in the market, many analysts fear the security of their career. With decreasing demand and increasing competition, as fund managers decrease their dependency on larger all round brokerage firms, many will perish in the struggle to come out on top. A clear indication of this shift is the comment Richard Buxton, Chief Executive of Old Mutual Global Investors Chief,

makes in the Financial Times article MiFID II leads to an exodus of sell-side analysts, in which he states his firm has become “inundated with CVs”. Who would blame them when JP Morgan is offering access to its equity research for as little as \$10,000 yearly. Fear not though, for it is not all doom and gloom.

MiFID II has paved a way for a brighter future, especially for smaller brokerage firms. Their ability to provide very detailed analysis on a market niche gives them the edge over their larger dominant counterparts. As Mahesh Narayan at Thomson Reuters states in an interview with Finextra, smaller firms

can “distinguish themselves by the quality of their research”. While MiFID II has certainly transformed the European financial industry it has restored client confidence in an out-dated sector, in terms of the legislature, by providing transparency and fairness for all involved.



The FCA has been acting as the regulator of MiFID II in the UK // Financial Times

CLUBS & SOCIETIES

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Israel Trip 2019: What did participants think about Israel ?

CLUBS & SOCIETIES

Imperial College Israeli Society

For the 3rd consecutive year, the Israeli Society organised a seven day trip to Israel last March. The trip aimed to show the growing tech sector of Israel, as well as the cultural side of the country. Want to be a part of it next year? Why don't you take a look at what two participants this year remember from their first time in the Holy Land.

Mohammed Sakir Mahmood, Medecine:

"Israel is rich with history and controversy. Mainstream media today focuses on the political conflict within the region. However, what the Israeli Society has achieved is moving the spotlight away from politics towards something that is undeniably Israeli to its core: the start-up nation. Many students at Imperial College have been involved in the entrepreneurial world, or at the very least, have heard the term thrown around in discussion; but experiencing a nation which has built its current standing on innovation was truly something else.

Human capital is a key resource in the country, and a mindset of challenging the status quo is commonplace. The combination of the discipline instilled by compulsory military service, and the country's focus on STEM education, has produced innovations such as Mobileye and Pillcam. It was truly a privilege to visit establishments

such as the Technion, the Hebrew University of Jerusalem and the Weizmann Institute — the birthplace of many of these world-changing technologies.

As well as the wide-ranging tech visits, the programme included many opportunities to explore the country's rich culture and natural beauty. A highlight of the trip was climbing Masada to watch the sunrise amongst the beautiful vistas surrounding the mountain; the significance of the place was made apparent by the history lesson we received from our tour guide, Ilan Bloch. The story of King Herod's retreat and the Jewish settlers was simply fascinating. Israeli food is also something to behold, from the deliciously sweet and creamy Malabi to the rich and savoury Shakshuka — needless to say our appetites were whetted well.

Last, but not least, the religious significance of Israel wasn't lost to us. The Bahai gardens in Haifa was a spectacle to behold indeed, with lush trees lining the walkways adorned with gleaming white marble, all in the presence of tomb of the BahaUllah. Jerusalem, being a religious epicentre for Jews, Muslims and Christians, showed us how these groups live together.

The committee of the Israeli Society should be lauded for their efforts, as the trip was a truly monumental achievement that they should be proud of. Their efforts led to students from all departments and many different walks of life coming together and creating memories to be cherished as well as lifelong friendships. It was a privilege



"Their efforts led to students from all departments and many different walks of life coming together and creating memories to be cherished, as well as lifelong friendships" // Imperial College Israeli Society

to be part of this trip, and I recommend anyone reading this, to apply for next year's Israel tech trip!

Shalom."

Ryan Tham. Aeronautical Engineering:

"As everybody else went home for Easter, a diverse group of students from different walks of life set out on an eye-opening trip to the Holy Land.

Our goal was to learn about the fantastic technological achievements of the start-up nation, while exploring the rich natural beauty the land had to offer. Each of us had preconceptions of Israel, and we set out to see what the country could offer.

What we got was a glimpse into an ancient culture, a story of a people whose resilience

was embodied, not only by their famous entrepreneurial spirit but also by an unending struggle to find their place in the world. This story was told by the spectacular sights and sounds we immersed ourselves in, from the blood fraught history of Masada, to the harrowing narrative of the Holocaust Museum and the bustling nightlife of Jerusalem and Tel-Aviv. Adding to the narrative was open-ended and thought-provoking discussions with the locals, students from Israeli universities and our various guides, foremost of them Ilan.

We started the trip in Tel Aviv, riding the local Lime rented bikes while savouring the delicacies of Carmel Market. Historical heritage and technological innovation were intertwined in all aspects of the city. Being

Imperial students, we were able to appreciate the country's strong emphasis on technological advancement, best exemplified by institutions including the famed Technion, Weizmann Institute and Hebrew University of Jerusalem. Some of the astonishing displays included a world's first nano-sized Bible and models of Nobel Prize winning quasi-crystals.

Yet with all that modernity, we were also exposed to another side of Israel — the more alluring side. We stayed in a Bedouin camp in the Negev with (God forbid!) no cellular service, enjoying traditional Arab dinner and basking in the starry night.

In Jerusalem, we learned about the rich religious heritage of the Muslim, Christian and Jewish peoples, distinct yet inseparable

in a modern city with a historical core. It was the most enriching experience of the trip, in terms of historical context and cultural understanding. The nightlife of Jerusalem brought another dimension to the city. In contrast to many European cities, the Israeli markets were still well lit and raucous, even at 10pm.

Spending a week in Israel felt long. When it was time to finally say our goodbyes, we did so with vows to return. The enriching experiences invoked a sense of awe and perspective that will remain in our memories for years to come. Someday I will reflect on my life, and I'll remember this one week when we visited breathtaking places, enjoyed great food and had unforgettable experiences with absolutely amazing company."



Hangman



He's even been prepping since day one... // Felix

NegaFelix editor makes dramatic career switch to adult film star following popular demand

The Union newspaper editor is considering alternative uses for his many talents

HANGMAN

Negafelix
Editor-in-Chief

Randy Djibouti, whose tenure concludes at the end of the academic year, made the announcement of his decision at the final Council session last week, where only five people were awake to hear him.

The decision comes after a large number of responses to the Sex survey

calls for the former editor to bare all, with respondents claiming to make queries such as "Randy Djibouti fucks hot bubble butt" in their latest porn searches.

Mr Djibouti was in high spirits as he completed his final rounds dropping off the newspaper. "To be honest, it didn't actually cross my mind until people kept saying it," he told NegaFelix, "then I realised I'm in high demand, you know? Grad schemes are hard to come by these days, so I'll take whatever I can get. Plus, I get a free gym membership!"

"I realised I'm in high demand, you know...plus I get free gym membership!"

Members of the NegaFelix team were markedly unsurprised at the unconventional career progression. "He's been feeling himself ever since the results came in, so I can't say I'm blown

away," said Charlemagne Musttit, resident Shit-Stirrer, "it's all made his head swell, if you ask me."

"He's been feeling himself ever since the results came in"

Inside sources within the Union Building tell us many staff members were distraught to hear of Mr Djibouti's decision, with

some weeping hysterically. "He had so much potential," wailed Abigail Panapopolis, Student Administrator. "He was one of the competent ones; now I'm left to deal with these ingrates."

"Yeah he'd be great at it, he's got spunk," said a staff member, who shall remain unnamed, "wish I'd have been able to help him practice for the role though."

The former editor, who will also perform under the alias Sandy Djembe, is set to star in a number of feature productions to be released later this year,

such as *Djibouti in that Booty*, *Djungle Fever 2: Rumble in the Djungle* and *Djembe Beats: The Rhythms of Africa*.

We at NegaFelix wish Mr Djibouti the best of luck in his future endeavours; we're sure he'll knock it out of the park.

"Wish I'd have been able to help him practice for the role though"

HANGMAN

negafelix@imperial.ac.uk

Union hires psychic to whisper sweet nothings of Summer Ball success

HANGMAN

Negafelix
Editor-in-Chief

Union staff have turned to an unlikely source for guidance after a recent threat assessment suggested an unfortunate turn of events at its annual gala.

The Events team, who are responsible for the planning

and execution of the event, have reportedly enlisted the services of a psychic, in the hopes of foreseeing a fortunate outcome for this year's Summer Ball.

The move was prompted following an internal breakdown in communication, leading to strikes by performers and bar staff over freedom of movement around campus. "Who do they think they are?," exclaimed Jon O'Barnaby-Howell, Farts & Containment Chair. "These are our demands; we will not back down!"

NegaFelix was thankfully able to gain an audio

recording of the meeting with the psychic.

"It's going to be a shit-storm, but quite frankly you don't need to be clairvoyant to see that," they said grimly. "Wasn't there some drama behind the scenes in the Union? Stupid question, there's always drama in your damn building. Anyway, it's your fault; you shouldn't have let any of those goddamn anti-vaxxers into the Union."

Daniella Donatella, Deputy President (White Lies & Erasures), was found to be in a frenzy after the consultation. "Why can't anything go



As if consultants weren't enough of a waste of money... // Flickr

right in this goddamn university?!" she exclaimed, whilst attempting to tear her hair out. "Honestly the

only reason I'm still at this job is because it makes me feel like I'm still young, but the novelty is starting

to wear off."



ARIES

This week you're a second year chemist.

Stop reading this, you've still got exams.



TAURUS

This week you found some free space in the library!

Finally! A free table to get laid on.



GEMINI

This week you're the Felix Editor. They doubted your abilities; said you couldn't do it.

Were they wrong though?



CANCER

This week you in need of a job. You're worried about your chances given your record of workplace harassment.

Don't worry, you'll fit right in here!



LEO

This week, pissed with your useless supervisor ignoring your goddamn e-mails, you mail dung to his office.

It's worth as much as his support anyway.



VIRGO

This week you decide to spice up your love life using the Sex Survey results.

Desperation is taking sex tips from Imperial students.



LIBRA

This week you're the poor soul who had to read through the Sex Survey responses.

Might need a long soak in some holy water because you lot are wild.



SCORPIO

This week you need some cash for the summer. You're considering this Seeking Arrangements thing.

We foresee an STI in your future.



SAGITTARIUS

This week you decide it's time to pamper yourself with a trip to the sauna.

Might as well save money and head to the Sci-Fi library.



CAPRICORN

This week none of the answers in your multiple choice exam seem to make sense.

It's almost a bit like the Conservative leadership contest.



AQUARIUS

This week your housemate breaks your favourite mug and you finally lose it.

Deposit be damned, you're fucking her shit up.



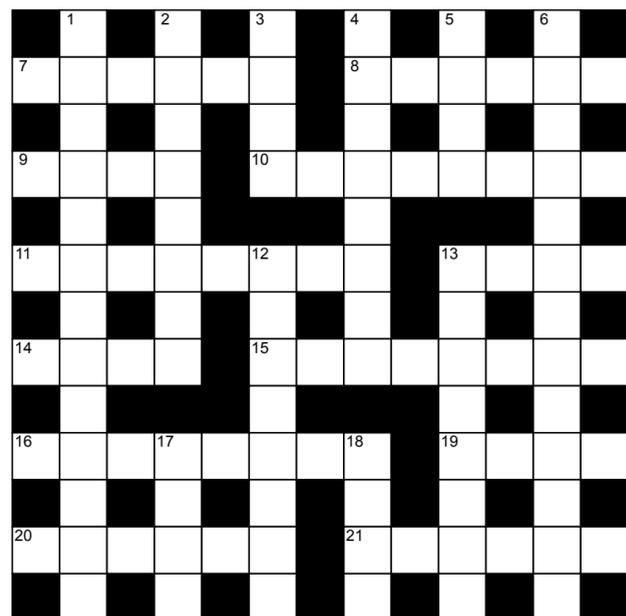
PISCES

This week you finally finish fourth year! You can finally leave Imperial!

Lol you're a medic. Enjoy fifth year on Monday!

PUZZLES

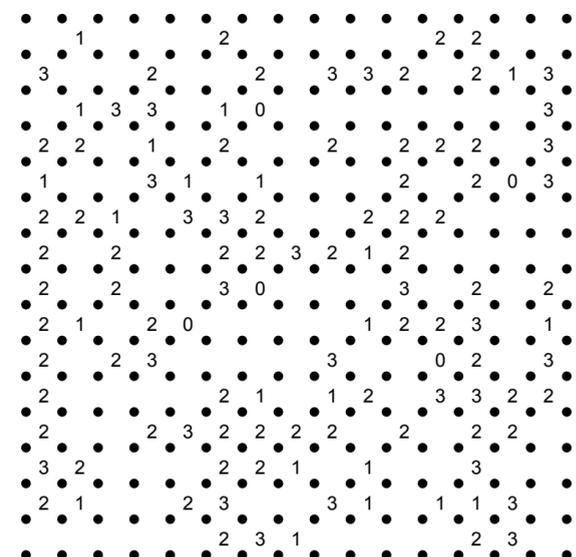
fsudoku@imperial.ac.uk



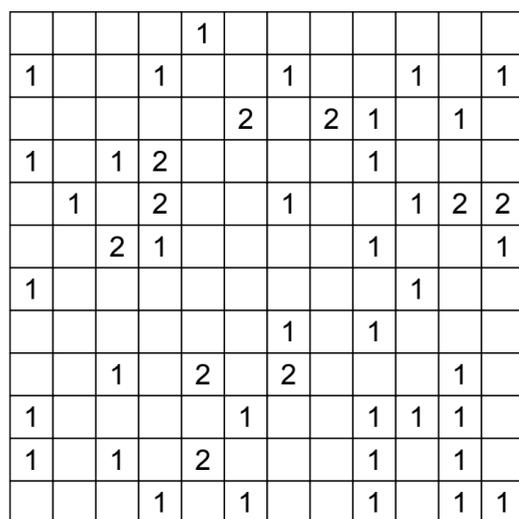
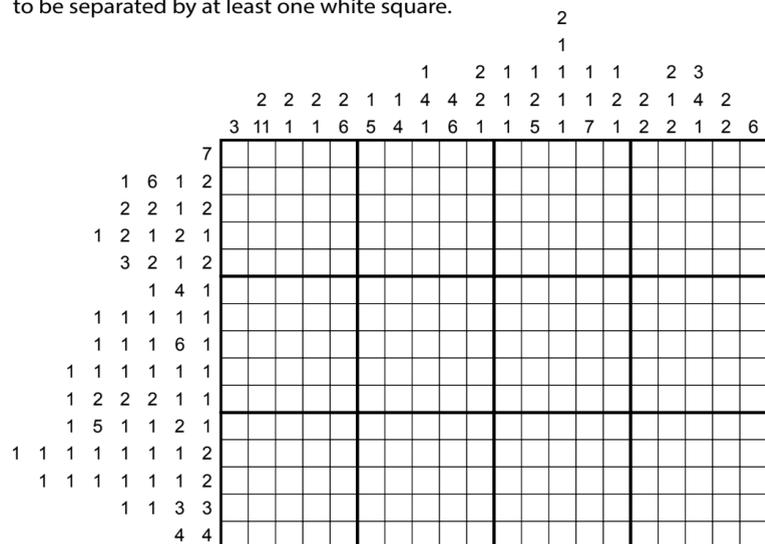
- Across**
7. Tiered tower (6)
 8. All you can eat (6)
 9. Make out (4)
 10. Blood highways (8)
 11. Chill version of songs (8)
 13. Sound that keeps on coming (4)
 14. Outbound email server (4)
 15. Compliant (8)
 16. Petrifying mythical snake (8)
 19. Retreats (4)
 20. Food that won't kill you (6)
 21. Keeps a camera steady (6)

- Down**
1. With great (Latin) distinction (5,3,5)
 2. Olympic sand pit landing (4,4)
 3. Fancy party (4)
 4. Stands in the way (8)
 5. At a distance (4)
 6. The OG Google Maps (9,4)
 12. With a head and a tail (3,5)
 13. Widespread contagion (8)
 17. Long-range missile (4)
 18. Flying diamond (4)

SLITHERLINK
Connect horizontally and vertically adjacent dots so that the lines form a simple loop with no loose ends. The number inside a square represents how many of its four sides are segments in the loop.



NONOGRAM
Colour in some of the squares to make a picture. Each number represents a block of consecutive black squares within that row/column. Each block needs to be separated by at least one white square.



MINESWEEPER
The number in a cell represents the number of mines adjacent to that square (up/down, left/right, diagonal). Find and mark all of the mines to clear the board.

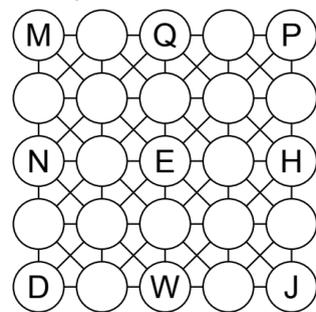
SPOT THE DIFFERENCE
There are 7 differences between the two otherwise identical drawings. Find them all.



PUZZLES

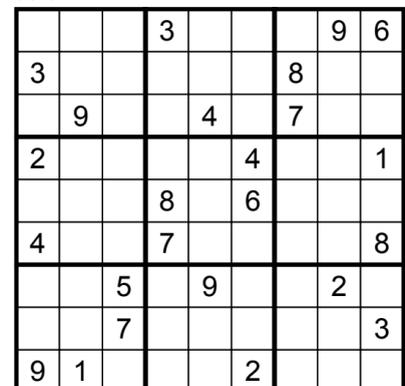
fsudoku@imperial.ac.uk

GOGEN
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.



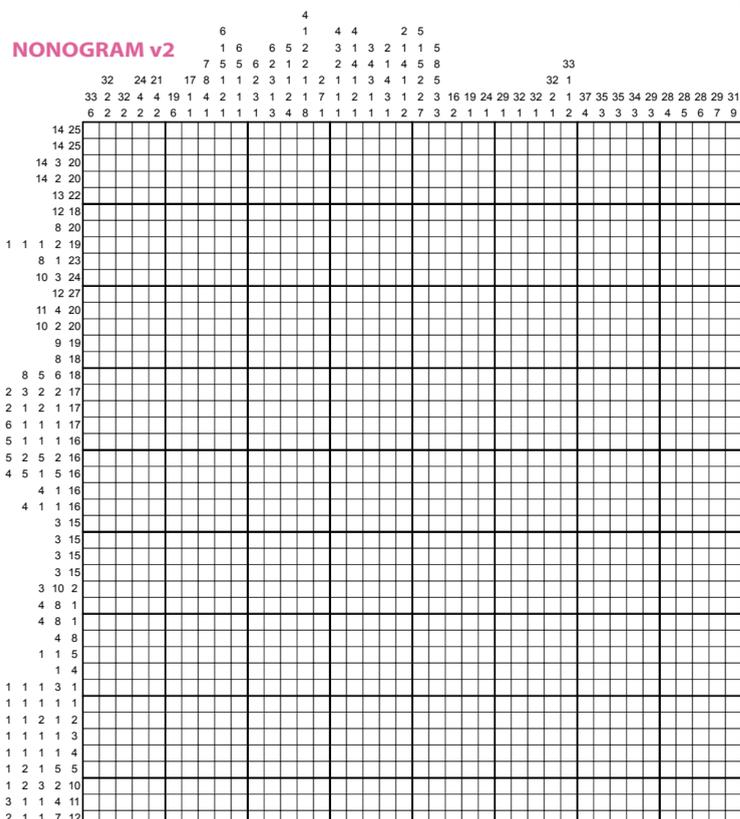
- ANTIQUES FUSE PUBS
CYAN JOGS SHOW
DARKLY MIXER VIRAL

SUDOKU
Fill all the boxes with a number between 1 and 9. A number can only appear once in a row/column, and only once in each sub-box.

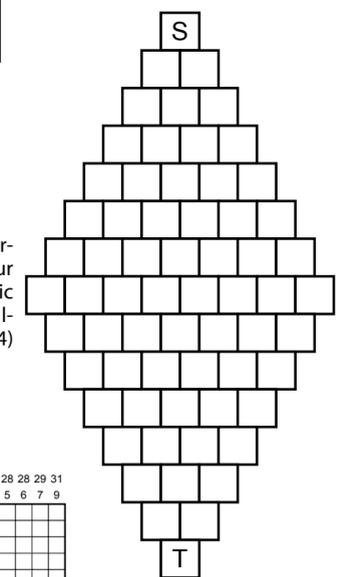
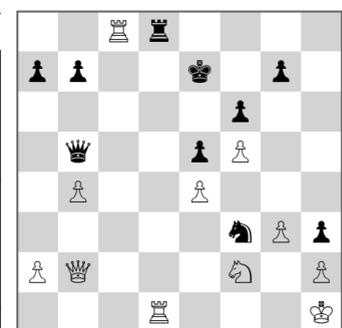


WORD PYRAMID
Each row is an anagram of the previous, plus or minus one letter.

We (2) – Prosecute (3) – Above your password (4) – Old alphabet characters (5) – State of not being relaxed (6) – Bone in the centre of your chest (7) – Where you'll probably end up if you fall asleep on public transport (8) – We all get fifteen of them for fame (7) – Type of ballroom dance (6) – Unfasten (5) – One usually hopes for a good one (4) – After your taxes are accounted for (3) – And, in French (2)



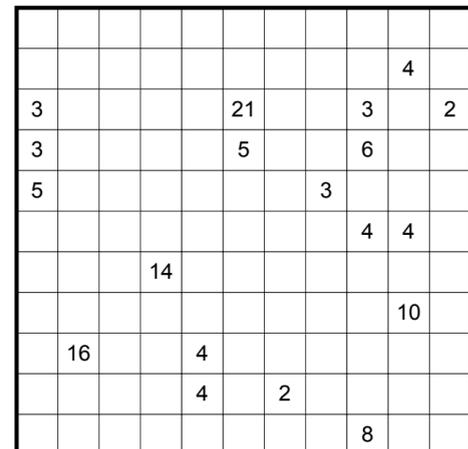
CHES
White to move and checkmate in 2 moves.



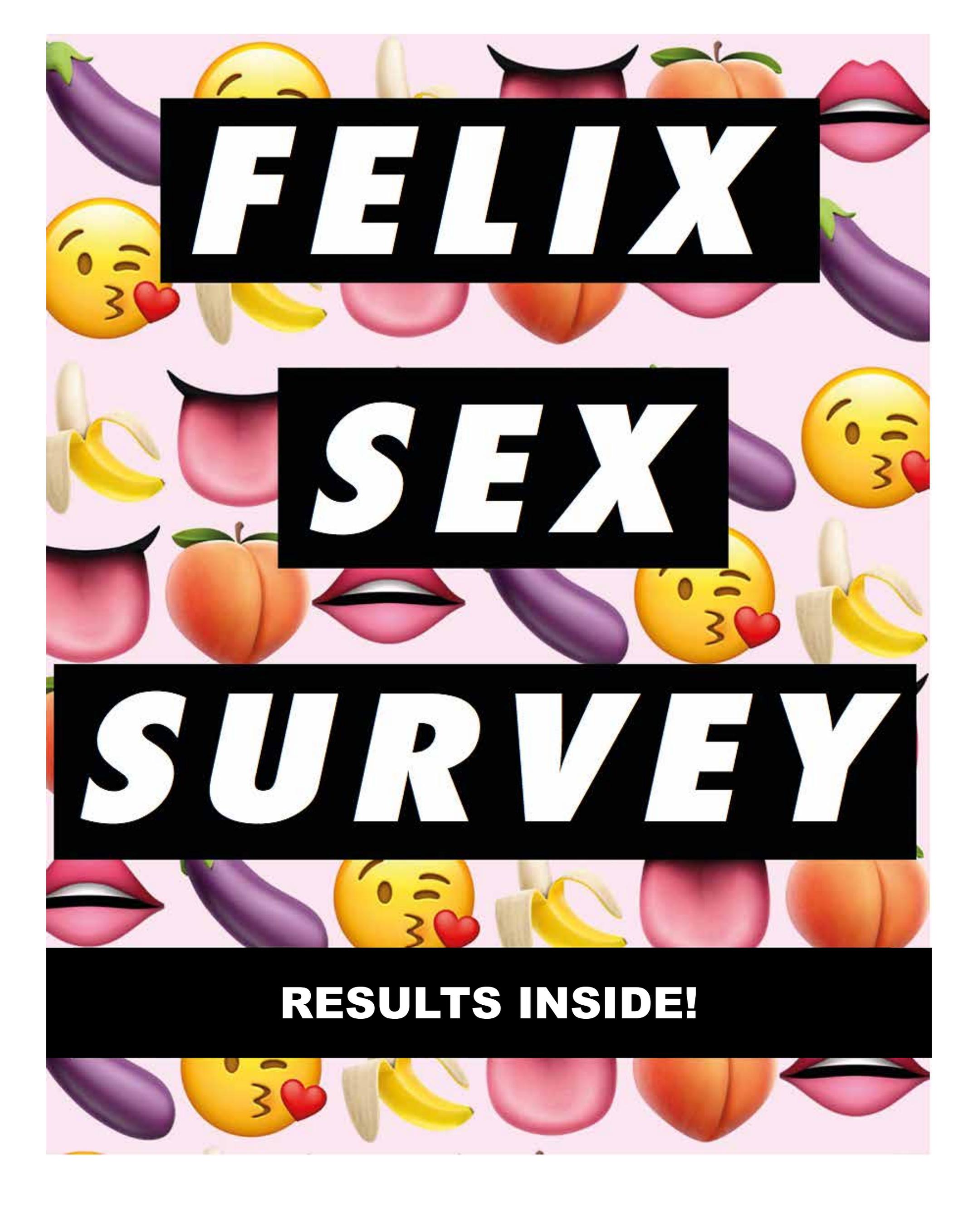
FUCWIT

1	Trollheim	256
2	DQ	252
3	Yeet Infection	248
4	Maxiane	240
5	O1G	204
6	Wooloomooloo	148
7	Computer Magic	133
8	Big H's Boys	126
9	Rock, Flag & Eagle	108
10	S. B. S.	95
11	Quizlamic extremists	87
12	Luncheon Pals	85
13	KBLB	82
14	Fleesh and the tooters	80
15	Shark	74
16	M.C. Potato	65
17	satu lipa	64
18	HoneybunnySnugglepuff	34
18	Those Left Behind	34
20	Fresh.O.G	32
21	Vanilla Chocolate	31
22	müll kidz	25
23	The Indoor Sundial	24
24	Castiel	17
24	Lilmonix3	17
26	Katienoch	16
26	Nemi	16
26	TH3_G1NGA_N1NJA	16
29	Jumping for joy	15
29	when will, then wei	15
31	Dancing Queens	14
32	Philippides	10

This edition marks the last round of the year. Congrats to the winners, and thanks to everybody who sent in solutions this term. It's been grand!



SHIKAKU
Divide the square into rectangles, such that each rectangle contains exactly one number. The numbers given represent the area of the containing rectangle.



FELIX

SEX

SURVEY

RESULTS INSIDE!