

Dongoor Plaza - Imperial College lawn re-opens as statue plans seen

Sam Lovatt Editor-in-Chief

Dangoor Plaza was opened on Wednesday, allowing access to the renovated space for students, staff and the public.

The works, originally scheduled to be complete by the beginning of this term, are the result of a £5 million donation from the Dangoor family and the Exilarch's foundation. The Dangoor family say "Our family has a long history in South Kensington and many of us are also Imperial College alumni".

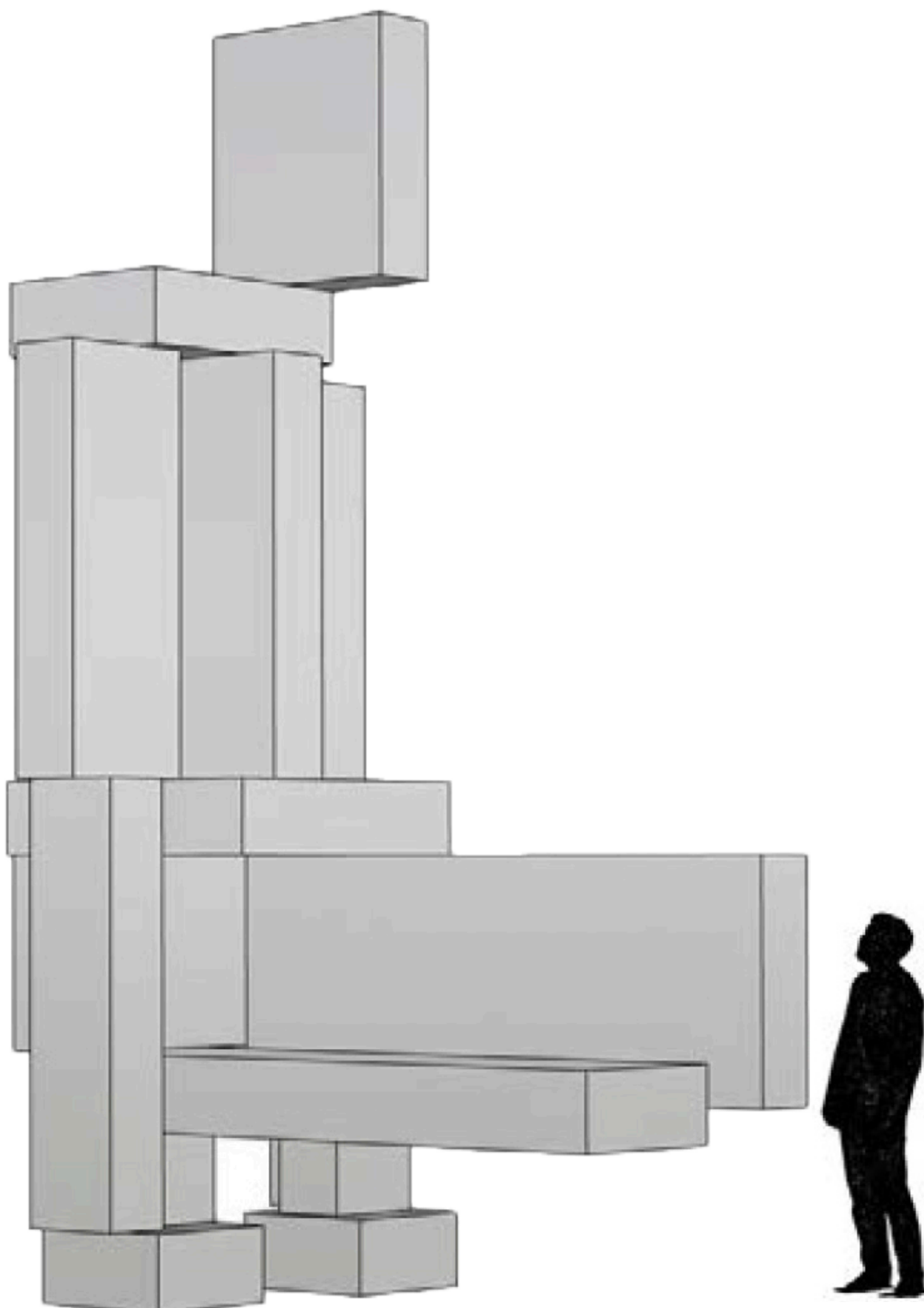
The donation has been used to transform the plaza, as well as funding a cancer research centre on the South Kensington campus and The Invention Rooms at White City.

The sculpture, called ALERT, will weigh 67 tonnes and be comprised of a type of steel called Corten. It will stand 6.12 meters tall, 2.7m wide and 3.9m, um, deep.

The, er, shaft, will be 1.14m in girth and 81cm off the ground.

Donated by alumnus Brahmal Vasudevan and his wife Shanthi Kandiah, the piece will be installed at a prominent location where Imperial College Road used to run. The suggested positioning can be seen in the accompanying images. The figure will be inserted into the South Kensington landscape in Summer 2022.

The sculpture is the latest work of renowned artist Antony Gormley, whose previous work includes the widely-known sculpture the Angel of the North, which remains the largest sculpture in Britain. On his work, Gormley said "Through the conversion of anatomy into an architectural construction I want to re-assess the relation between body and space. Balancing on the balls of the feet while



Continued on page 4...

EDITORIAL

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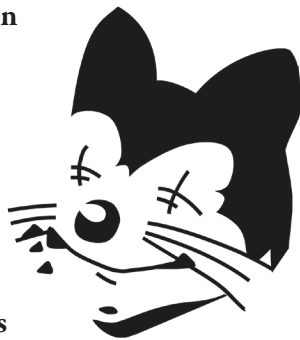
And our numerous contributors



The Felix Editor on

“Hypocrisy”

Ever since Alok “charmer” Sharma became COP26 President a year or so ago there has been chatter of hypocrisy, coming in the form of criticising the man tasked with saving the world for using a large number of flights to travel on diplomatic endeavours, giving what we can assume was his best effort in strengthening ties between nations in order to achieve the best COP outcome possible (charming delegates from different countries I



imagine, therefore Charmer, Sharma, etc, etc, you get it). Charmer went to over 30 countries during the run-up to COP26, including Indonesia, Kenya, and Brazil, according to the Guardian. For reference, it took Greta Thunberg 15 days to sail from Plymouth, UK to New York in 2019 for a climate conference. Whilst this offsets an immense amount of carbon from the average person’s annual footprint, kind on the calendar it is not.

COP26 was widely received as bitter-sweet. There was no tectonic shift that left the world net zero by 2025, but equally there was significant progress made on many fronts. Deforestation to end by 2030, with Brazil (one of Charmer’s haunts, as mentioned) as a signatory. 30% methane reduction pledge signed by 104 countries and a “death knell” for coal power, the world’s dirtiest polluter. Estimates of the reduction in global heating, whilst not where they need to be, are still colossal.

Now, call me crazy, but I reckon 30 or so flights around the world are worth it. Considering around 100,000 flights leave the runway every day (pandemic not included), and this tiny number has contributed to an estimated 0.9 degree decrease in global heating by 2100, I think it’s probably alright that they went ahead.

Cuts on domestic flight duty, which are 100% unnecessary as anyone can cross the UK by train within a day, get quietly swept under the budget rug whilst Sharma, who was brought almost to tears at

the crux of the COP summit, gets lambasted by comment sections and even national newspaper columns.

Some commentators see Sharma flying around the world to different countries in the spirit of COP as hypocritical because aviation is such a large contributor to global emissions. Whilst this is true, surely the reason for the flights should be taken into account? He’s making some of the biggest changes anyone has ever

made to climate change with each flight. Asking you to get the train to Edinburgh rather than fly to Lisbon for your weekend away is not quite the same as flying to Brazil, resulting in the home of the Amazon pledging to end deforestation by 2030. The word hypocrisy just does not apply here.

Sharma is a particular example of media persecution, however an example far closer to our community’s heart is epidemiologist Neil Ferguson, who was torn apart by the media near the beginning of lockdown #1 for seeing his girlfriend in his home. He ended up handing his resignation to SAGE as a result. Ferguson had contracted COVID just weeks before and there was essentially zero chance that he could spread the virus further. Aside from misleading allegations of adultery, this was also seen as a flagrant display of hypocrisy of the elites by much of the media. The BBC even reported in May that “it is currently unclear whether people who have recovered from the virus will be immune or able to catch it again”, as if we’ve ever come across a respiratory virus that doesn’t convey immunity once the host has recovered. Obviously he should not have done it from a PR point of view, but this was one of the most epidemically well-versed men in the country seeing a single individual when he was all but certain that he could not transmit the virus. Clearly this is not the same as the average person who might be contagious dismissing the rules, but don’t let that stop the criticism.

Statement of Intent

At Felix we believe that it is always in the interest of the students to know. Transparency in the workings of the College and the work of your student representatives is key. Therefore I, the Felix Editor, on behalf of the team promise that:

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

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

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

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

Signed by Sam Lovatt
Editor-in-Chief

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Write for Felix!

Felix is a longstanding institution which has produced some of the finest student journalism in the country, won awards and broken stories that end up in national news.

Felix provides an outlet for all students and staff to review, read about and report on whatever they want. Anything you feel passionate about can be transcribed, honed to perfection with the help of our Section Editors and published both in print and on the website

Writing on what you're passionate about is the best way to deepen your interest and expand your horizons (also, if we're honest about incentives, a lot of the sections get you free tickets and it looks good on the CV)

If you're interested in writing for us, get in touch with any of the section editors at their submissions inbox (e.g: if you want to write for Arts, email arts.felix@imperial.ac.uk), or the Editor-in-Chief at felix@imperial.ac.uk

We need writers, editors, copy-editors, illustrators, photographers and more!

Keep The Cat Free

Since 1974, "Keep the cat free" has been Felix's motto and a central tenet of its operation. The phrase applies in three aspects: editorial independence, free to read and free to write.

Editorial independence does not mean unfettered free speech. Just because we can say something doesn't mean we should. Felix will always be an inclusive environment for as many people as possible. This being said, Felix does not conflate offence with harm, and any content that is not illegal or deeply immoral can be published at the Editor's discretion, with the following statements in mind.

The paper will never hold a formal political agenda, nor will it be reliant on advertising for funding, despite the occasional inclusion of ads.

These ads will never dictate what is run in the paper.

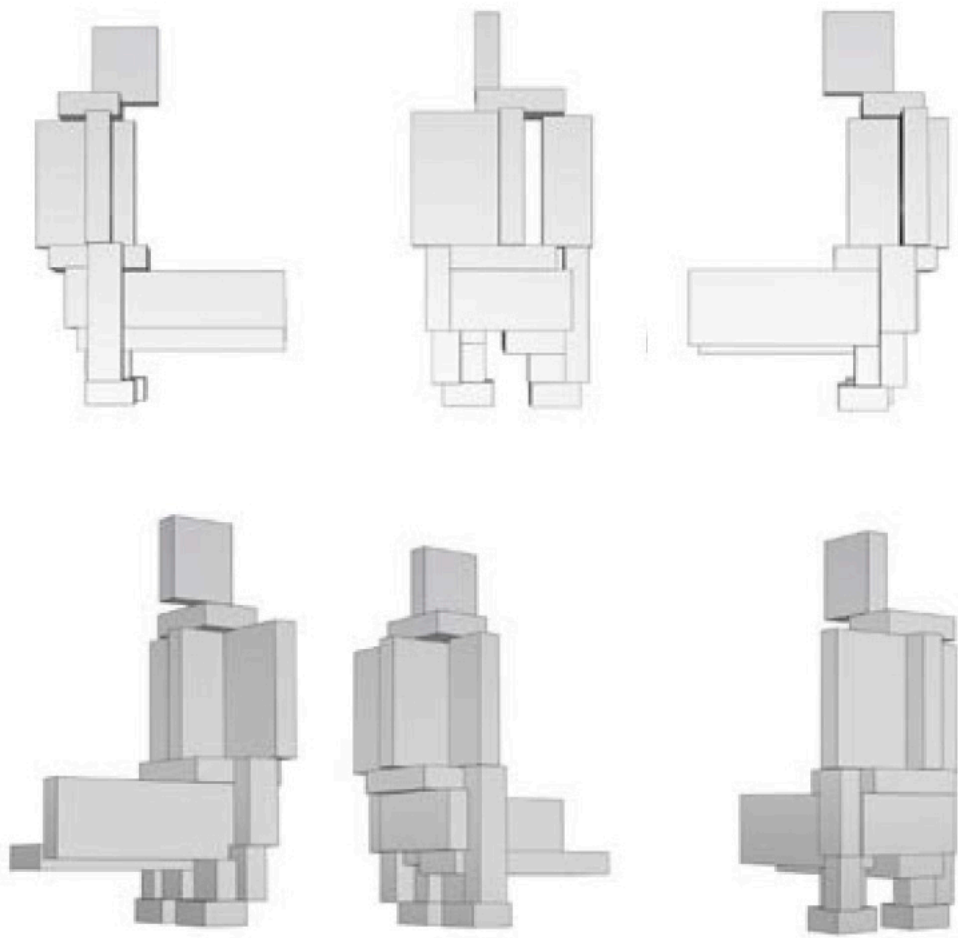
Felix retains the right to criticise anyone and is accountable to the law in terms of defamation. As part of the Union, Felix is part of a charity that exists to represent and support students. The paper will always seek to strike a balance between public interest and student welfare.

Since 1971 the paper has been free to pick up and read and will remain this way indefinitely.

The paper will always be a place that students, staff and alumni can write freely. This statement applies exclusively to the aforementioned groups, and guest posts, paid or otherwise, are never accepted. In the same spirit, Felix will never financially reward any contributions from the above groups.

NEWS

Continued from page 1...



squatting on its haunches and surveying the world around it the attitude of this sculpture is alive, alert and awake”.

He added “The work will beckon towards the passers-by on Exhibition Road, providing a point of interest and intrigue, and encouraging a closer look”.

A College spokesperson said “Sir Antony Gormley is one of the world’s foremost living artists, and we are grateful to have been gifted one of his iconic sculptures”

The renovations will leave the most central part of Imperial College’s South Kensington campus with 250 meters of extra green space, with parking spaces and part of Imperial College Road removed. The road has now been pedestrianised. Deliveries to the College can still be made using this section of the road, however planning documents state that this will generally be kept to the early morning hours, leaving the area pedestrian-only for the majority of the day.

Most significantly, a 3m wide path has been added diagonally across Queen’s Lawn, connecting the SAF and Sherfield buildings. The path and surrounding areas are lit up by ground lights which will provide illumination for people using the path after sunset.

Effort has been made to remove unnecessary changes in levels, making

the whole plaza more accessible to everyone. Particular care seems to have been taken to avoid damage to the trees that line Imperial College Road.

The Plaza makes up part of Imperial College’s “Masterplan”, commissioned in 2018 with architects Allies and Morrison to set out “a vision for the best version of the campus we can imagine”.



Surveying the Queen’s Lawn

The Masterplan includes potential for “animated spaces” being installed around Queen’s Lawn, which can be altered to facilitate different activities depending on requirement.

Despite the opening of the plaza, Queen’s Tower will remain fenced off. Restoration of the Tower will commence in January 2022, and will involve replacing the copper domes at the top of the tower as well as generally cleaning the masonry and windows.

The tower has been fenced off for safety reasons, as debris recently fell, presenting a hazard to passersby.

Both the Plaza and sculpture came at no extra cost to the College.



VP Neil Alford at the opening ceremony



Period product pilot rolled out

Sam Lovatt Editor-in-Chief

From 6th December, a trial of providing free sanitary products in female and gender-neutral bathrooms around Imperial College campuses will begin.

The trial run will last for between three and six months to test viability, costing and monitor potential abuse of the system. Feedback will be gathered in the spring, which will be used to assess the scheme going forward.

Installation of vending machines to provide these products has already begun across campuses. Coverage will consist of a dispensary in one female bathroom and one gender neutral bathroom in each building across all campuses. Coverage may be expanded if the pilot proves successful.

This pilot follows the success of more small-scale pilot schemes carried out by the Department of Infectious Disease (DoID) and the Department of Earth Sciences and Engineering. The trial carried out in the DoID was run

in a single female bathroom for three months earlier this year. The scheme, which provided free sanitary towels and tampons, was estimated to have cost around £90 per month and was warmly received by staff and students. One staff member involved in the organisation of the pilot expressed that the scheme seemed to have largely been used in emergencies, rather than to replace purchasing one's own supply of products.

Professor Stephen Curry of the Department of Life Sciences, who is also Vice-Provost for Equality, Diversity and Inclusion, brought the paper suggesting the pilot scheme to the Provost Board. He highlighted that such a scheme would not be breaking new ground, as such access to sanitary products is already common in Scotland, in a number of English schools and in several other UK universities.

A survey sent to Imperial College's Athena SWAN Committee, a panel which oversees action on the Athena

SWAN charter of gender equality at higher education institutions, showed that the committee were overwhelmingly in favour of the move. Of the 26 members that took part in a vote on the issue, 24 were in favour, one was neutral and one was against the motion.

Nathalie Podder, Deputy President (Welfare) in the Union said "This is a huge win for inclusivity at Imperial. It is also an incredible sign of goodwill on

the part of the College. Many thanks to Stephen Curry for spearheading this effort within the College and making it a reality. And massive props to Grace Fisher (Working Class Officer) and the rest of the Working Class Network for campaigning on this issue long before I took office; we couldn't have done it without you!"

Campaigning for such a scheme began in 2019 as part of a Period Poverty campaign.

Credits: Envato Elements



History Group controversy and a call to action

Sam Lovatt Editor-in-Chief

The window in which students and staff can get involved with the dialogue around the College's History Group's controversial decision to recommend the renaming of campus buildings remains open until 13th December.

The Group recommended that Beit Hall and the Huxley Building be renamed, and that lesser-known women and people of colour who contributed to Imperial's history be celebrated more.

The History Group undertook extensive research and spoke to a number of stakeholders, internal and external to the College.

One student consulted by the History Group, who wished to remain anonymous, reached out to Felix with disdain at the report's final form.

The individual described the report as "a whitewash", as "the main issue that was repeatedly raised was that College culture could only improve with accountability for the leadership", and made explicitly clear that this referred to Alice Gast and the bullying scandal. They said the issue was "overwhelmingly the main issue raised in the consultation [they] took part in" by students and staff alike.

Whether you think the recommendations are woke idiocy, or that the Group's recommendations didn't go far enough, get involved using the links on the right!

To get involved separately email history.dialogue@imperial.ac.uk

Link to more information on the dialogue



Link to get involved in a discussion group



Retraction - errors in last week's piece on policy around spiking

- The security review will be led by senior management, not the DPW/ DPCS. OTs will lead on acquiring student consultation
- Consent training will actually be rolled out by the Friday following last week's issue (today)
- A wording change occurred on spiking posters, not Ask For Angela posters, as previously stated

The forgotten pandemic: HIV in Africa

► *With World AIDS Day 2021 coming up next Wednesday, Science Writer James Desmet reports on the ongoing AIDS pandemic in East and Southern Africa*

Image credit: Wikimedia Commons

James Desmet Science Writer

37.7 million people globally were living with HIV in 2020. Of those, more than two thirds of the world's HIV-positive population is located in sub-Saharan Africa. HIV still remains one of the most serious global health threats of our time, but this appears to be stalling. While the consequences of the COVID-19 pandemic on the HIV response are not yet known, there is renewed concern that the annual number of new HIV infections among adults has remained static in recent years and are unlikely to reach the World Health Organisation's targets for 2030.

Except for the rare occasions when a new therapy is announced, we don't see much about HIV/AIDS in the news. It is understood and generally accepted that with the advances in antiretroviral drug (ARV) adherence, a person infected with HIV can live a long and healthy life. As a result, HIV and AIDS is no longer seen as the unstoppable monster it once was, and for all intents and purposes, engagement in meaningful conversations around its eradication and mitigation does not appear to be a priority. However, this perspective is one taken from a position of privilege; it is only in developed nations that such medical advances have translated to actual, sustained improvements to quality of life.

HIV/AIDS continues to ravage developing nations, particularly in sub-Saharan Africa. It is affecting human development of African countries through its devastating impact on quality of life, life expectancy and access to healthcare assistance. It has destroyed the social fabric of communities; many adults, often parents, have died from the disease, which has resulted in labour shortages and child-headed families, adversely affecting the economies of such nations and contributing to widespread poverty.

Life expectancy has been dramatically reduced by the virus, with some areas having expectancies as low as 50 years.

With recent data suggesting that 2030 United Nations targets are not on track to be met, what exactly is going wrong and what should we do about it?

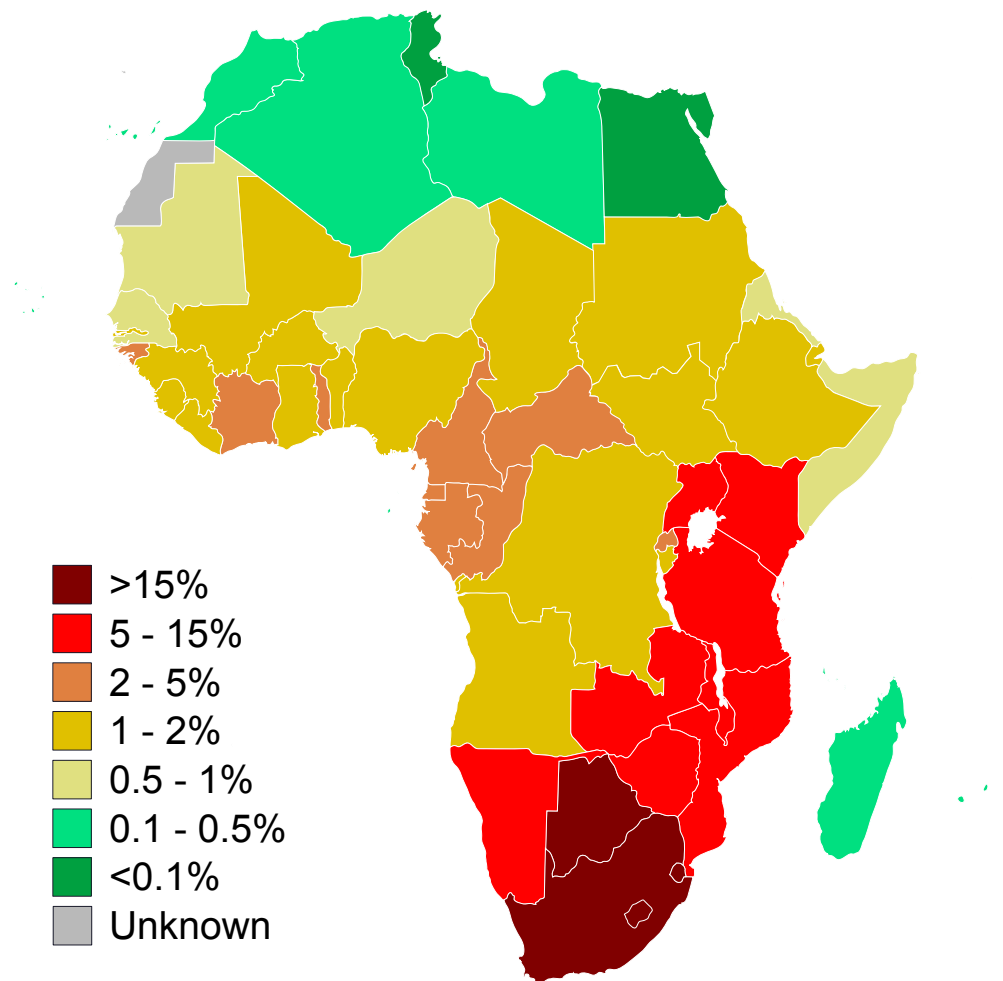
WHAT'S GOING WRONG?

East and Southern Africa are the regions in the world most affected by HIV and are home to the largest number of people living with it. Improved availability of HIV testing services now means fewer than two out of every ten people living with HIV are unaware of their status. However, the number of people living with HIV in East and Southern Africa continues to increase. Although laws and cultural traditions vary between East and Southern African countries, there are a number of ingrained cultural, structural, and legal barriers to HIV prevention.

Strategies to prevent the spread of the virus across other continents such as Europe do not work as effectively in Africa. Among the challenges are strong religious beliefs with regard the use of contraception and polyamory. This is only one of many factors that allow the virus to run rampant across the continent. Other influencing factors include medication compliance, availability of ARVs, the large size of rural communities, and the stigma of the disease.

Humanitarian aid has played a significant role in mitigating the impacts of HIV in sub-Saharan Africa, but it is still not enough.

The humanitarian aid is centred around the UN's 2030 goal to have 90% of the HIV-positive population diagnosed, 90% of the HIV-positive population on some form of treatment, and 90% of the HIV-positive population undergoing viral suppression therapy, coined the "90-90-90 target". Organizations such as the Desmond Tutu Foundation and UNICEF, as well as large first-world government organizations such as the UK's Department for International Development (DFID) spearheaded the effort.



Prevalence of HIV/AIDS in Africa, total (% of population ages 15–49), in 2011 (World Bank)

The pathway taken aims to educate the population on HIV/AIDS and how to prevent it, while also providing the necessary resources for prevention such as contraception and medication. A variety of different initiatives have been implemented; for example, the "ACT against AIDS" campaign (now known as "let's stop HIV together") sponsored by the CDC. Their efforts were successful, and improvements in the situation were seen in the long term. A study comparing key statistics between 2005 and 2012 (which were the years in which the majority of campaigns began) saw that seven times more people were on antiretrovirals in 2012 than 2005. Furthermore, over that period, the number of annual deaths decreased by 33% and the number of annual new infections was down 25% across Africa.

In light of this progress, many organizations, particularly ones associated with foreign governments, began to pull out

of Africa, believing that the continent could handle the disease on its own from here. Two of the largest benefactors who stopped their funding were the United Kingdom and the United States. The greatest impact was on NGOs (non-governmental organisations), many of whom had to either stop their work altogether, or drastically cut back on their services in local communities.

WHAT HAS BEEN THE IMPACT OF COVID-19, CLIMATE CHANGE AND OTHER ISSUES?

Let's start with COVID-19, the simpler one to address. Africa's public healthcare systems were already in a sorry state and in no way prepared for a global pandemic, ...

Continued on page 7...

WORLD AIDS DAY 2021 - WEDNESDAY 1ST DECEMBER

With World AIDS Day coming up next week, what can you do, as a university student, to get involved?

1) Education

Learn more about the reality of living with HIV, and share what you learn with others. The QR code below links to the WHO's page on HIV/AIDS, where you can learn more about it.

2) Societies

University societies can get involved too. You can run a bake sale, order free red ribbons or one of the National AIDS Trust's event packs (from worldaidsday.org) in order to help fundraise.

3) Donate

It is important to note that the National AIDS Trust is a UK-based charity. In order to help combat HIV in sub-Saharan Africa specifically, you can donate to the Egmont Trust or AIDSfreeAFRICA. UNAIDS and the Elton John AIDS Foundation operate with a more global scope.



Poster credit: National Aids Trust

1 People on effective HIV treatment can't pass it on
Effective treatment for HIV suppresses the virus to such low levels that it can't harm you and you can't pass it on.

2 HIV can't be passed on through day-to-day contact
HIV can't be passed on through things like touching, kissing, sharing cutlery or glasses.
HIV can be passed on through sex without a condom but only if a person is not on effective treatment. It can also be passed on through sharing needles and during pregnancy (but in the UK this is extremely rare because we have great treatment).

3 HIV can affect anyone
Some groups of people are affected by HIV more than others, but it can be passed on to anyone.

4 People living with HIV can live long and healthy lives
There isn't a cure for HIV, but there is excellent treatment. If you are diagnosed in good time and take your medication, you can have as long and healthy a life as everyone else.

5 There are many ways to prevent HIV

- Getting regularly tested for HIV if you are sexually active
- Taking PrEP or PEP (tablets which prevent HIV either before or just after you've been exposed to it)
- Using condoms
- Never sharing needles
- Taking your medication if you are living with HIV

NATIONAL AIDS TRUST
Securing rights. Stopping HIV.
www.nat.org.uk

Continued from page 6...

... with many patients in major public hospitals already finding themselves without beds, and only the wealthy having access to good healthcare. Moreover, imports (even of major drugs) have been severely restricted during the pandemic. This has meant that antiretroviral medication has become much scarcer, meaning many patients previously on viral suppression therapy have had to go without their medication.

Interestingly though, the impact of COVID-19, while very real, has not played as significant a role as climate change. Drought, flooding, and changing weather has affected disadvantaged communities, most of which are headed by women. Such families are very dependent on weather patterns and climate to provide a source of income and food (often through crop yields such as sugarcane that can then be sold or bartered). Climate change is meaning that crop growth is becoming increasingly less reliable as a source of food and income. This can lead to families being displaced, as they move to metropolitan areas to look for work. They live in squalor in shanty towns with no access to basic amenities such as

water and sanitation. Often as a means to generate income, women will resort to sex work.

Additionally, Africa continues to experience record levels of forced displacement. 32 million Africans

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“THE WITHDRAWAL OF OVERSEAS AID AND DEVELOPMENT ASSISTANCE FOR HEALTH TARGETING HIV/AIDS NEEDS TO BE RECONSIDERED”

are currently displaced as a result of predatory governments, political fragmentation, and violent extremist groups.

These factors among others have had a significant impact on the ongoing struggle of HIV in Africa, and the once upward trend of diagnosis, viral

suppression, and survival rates are slowing or stagnating at a concerning rate.

A study presented at the 2021 HIV Research for Prevention Convention, showed that while more developed sub-Saharan countries such as South Africa seem to be managing to contain the spread of HIV, other less developed nations are showing alarming downward trends, particularly in HIV testing as well as condom use.

The co-author of this study, Professor Stuart Gilmour of St. Luke's International University, Japan, said: “This is important for African countries and citizens of those countries to understand since HIV is a major health concern in Africa and it appears from our results that more needs to be done to control it... HIV cannot be eliminated without very high coverage of testing and low levels of behavioural risk”.

He also criticized the international community on their decisions to withdraw from relief programs, saying, “From an international perspective the withdrawal of overseas aid and development assistance for health targeting HIV/AIDS needs to be reconsidered”.

Michel Sidibé, Executive Director of UNAIDS emphasises that they are sounding the alarm. ‘Entire regions are falling behind, the huge gains made for children are not being sustained, women are still most affected, and key populations continue to be ignored.’ All these elements are halting progress and urgently need to be addressed head on.

‘We cannot have poor countries at the back of the queue. It should not depend on the money in your pocket or the colour of your skin to be protected against these deadly viruses. We cannot take money from one disease to treat another. Both HIV and COVID-19 must be fully funded if we are to avoid massive loss of life,’ says Winnie Byanyima, Executive Director of UNAIDS.

It would appear that the developed world is once again turning a blind eye to a continent that is, unfortunately, all too used to being ignored and exploited. Without international aid returning to the level it once was, it is likely these less developed countries will slide back to a seriously dangerous condition, undoing almost all of the good work that was done to ease the situation across Africa.

SCIENCE

Endosymbiotic Theory

► *The origins of the eukaryotic cell and comparisons between the Margulis' and Darwin's understanding of evolution.*

Wang Guo Science Staff Writer

Charles Darwin, the author of *On the Origin of Species*, shaped our interpretation of the origin and evolution of life from a fixed perspective to a scientific and dynamic one. The evolution of life is a slow and gradual process established on natural selection, which in simpler words is the survival of the fittest for a particular environment. These ideas are often misinterpreted, generating an extreme view of nature as a merciless competition. However, there are many examples of cooperation, such as lichens or insect colonies. Dividing the tasks makes the organisms specialise in one task in particular, so they perform better. For example, in lichens, the fungus provides nutrients to the alga and this in return, shares a part of the sugars it produces from photosynthesis. If the idea of cooperation can be applied to the multicellular world, why can't the same principle be applicable on a cellular level?

During the 19th century, a controversial debate was happening around the world. How did the eukaryotic cell

first appear on Earth? Not surprisingly, the theories of eukaryotes' origins were influenced by Darwinism. However, as mentioned earlier, cooperation occurs in nature and is often beneficial. Therefore, some scientists were advocating for a disruptive theory called symbiogenesis. Its principle exponent was Lynn Margulis, whose paper, *On the Mitoising of the Cells*, parallels Darwin's book, *On the Origin of Species*, in terms of influence and innovation.

Symbiogenesis or the endosymbiotic theory suggests that eukaryotic cells came from symbiotic relationships between ancient prokaryotic cells. Around two billion years ago, the atmosphere of the Earth changed. Ancient cyanobacteria started releasing millions of tonnes of oxygen

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ENDOSYMBIOTIC THEORY SUGGESTS THAT EUKARYOTIC CELLS CAME FROM SYMBIOTIC RELATIONSHIPS BETWEEN ANCIENT PROKARYOTIC CELLS

rapidly due to one of the most important innovations in life: photosynthesis. Most cells were heterotrophs (organisms that feed on other organisms). Oxygen was toxic for them, causing a mass extinction across the globe. In those times, most organisms employed inefficient anaerobic respiration pathways such as fermentation or glycolysis to produce ATP, the energetic currency of the cell. Howev-

er, some oxidative bacteria developed a mechanism called aerobic cellular respiration that uses the excessive oxygen available to produce ATP. From a single molecule of glucose, the yield of glycolysis is only 2 ATP, whilst cellular respiration is 36 ATP.

The theory suggests that some cells could catch and digest smaller organisms by a process called phagocytosis which involves deforming their membranes and forming digestive vesicles to contain the “food”. Phagocytosis is a type of endocytosis; this is where the name ‘endosymbiotic theory’

comes from. Endocytosis, in a nutshell, is the introduction of substances from outside into the cell. At some point, a predatory cell trapped an oxidative bacterium through phagocytosis, but the engulfed bacterium was not digested, as would usually happen. Now, the new environment of the oxidative bacterium was the cytoplasm of another cell, from which it was able to receive resources for its own chemical reactions, and produce ATP for both itself and its former predator, now also known as the host cell, establishing a mutualistic relationship between them. The host cell provided the oxidative bacterium nutrients and protection in exchange for energy. Endosymbiotic theory (and it is just that - a theory) suggests that this started a process of coevolution which ended up with the modern eukaryotic cell and the mitochondrion, respectively. This relatively sudden cooperation changed the rules of the games. As the host cell had a surplus of energy, it could increase its motility, which allowed it to take more

resources from the environment than its competitor, and have enough energy to carry out a greater variety of actions. The increase in the energy and material available for the host cell allowed it to form non-membranous and membranous organelles over time. These had their own spaces and were responsible for different tasks inside the cell. The eukaryotic cell has emerged, life is compartmentalising, but what happened to the ancient oxidative cell – probably, an α -proteobacteria? With time and through the accumulation of mutations, the independent identity of the oxidative bacterium gradually disappeared; they started behaving more like an intrinsic part of the cell, forming the mitochondrion. Indeed, this organelle has its own DNA, but over time it has been diminishing and many of the genes it codified are now transferred to the nucleus of the eukaryotic cell. Plastids are also an example of symbiogenesis. They are exclusive to plant cells, including the chloroplast, which realise photosynthesis, and seem to evolve from ancient cyanobacteria because both of them share a similar internal organisation.

First, it assumes that an oxidative prokaryote was not “miraculously” digested by a bigger one. Second, phagocytosis was instrumental in the incorporation of the oxidative bacterium into the host cell, but the deformation of the cell membrane required a lot of ATP. Evolution is constant and the advantage of a particular trait can increase or decrease depending on the environmental changes.

The symbiosis theory demonstrates how living beings will do everything in their power, including working together, to survive. There is more than enough evidence to strongly support that the endosymbiotic theory is true.

Continued on page 9...

WRITE FOR SCIENCE!

If the article above has got you interested in writing about issues or anecdotes from the fields of computer science, mathematics, engineering or the natural sciences, please email us at:

science.felix@imperial.ac.uk

Continued from page 8...

Firstly, mitochondria can synthesize their own proteins using a type of organelles called ribosomes. There are no other organelles in the cell capable of doing this, apart from plastids. Furthermore, mitochondria's ribosomes bear a closer resemblance to those of prokaryotes' than eukaryotic ribosomes, which are bigger. Mitochondria have one circular single strand of DNA, which is

again similar to bacterial DNA. There are two membranes in mitochondria; the outer membrane was probably acquired through phagocytosis, while the inner one was the original membrane of the ancient oxidative bacteria. Having said that, the endosymbiotic theory is not exempt from certain flaws in its argument as any other scientific model.

CALLING ALL ICMS CLINICAL STUDENTS!

Hi everybody, we are Quaranteam and we are working on a cross-collaborative research project centring on medical education adaptations to COVID-19.

We would like to get your personal views on how you felt ICSM managed to adapt to COVID-19. We would appreciate it if you could take around 10 minutes to fill out our questionnaire!

We will be giving £5 Amazon vouchers to 50 random survey participants! And those who complete the survey and sign up for the interview will be guaranteed a £10 Amazon voucher.



This week in Science...

FROM IMPERIAL...

Psychotherapy in combination with MDMA could be used to treat alcoholism

Alcoholism often has trauma as a root cause. Academics from Bristol University and Imperial College London say that psychotherapy conducted under the influence of MDMA could help patients process traumatic experiences. Psychotherapy is a treatment for alcoholism, but it is often limited by how comfortable patients feel discussing their traumatic experiences. MDMA decreases anxiety and depression, and its mild stimulators effect via norepinephrine and dopamine could motivate patients to engage during therapy. Psychotherapy would allow patients to process their emotions so they do not relapse every time they think about the traumatic event. Whilst the study could not estimate the treatment's efficacy with the control group, 8 weeks after the treatment, only 21% of participants reported drinking above 14 units of alcohol per week, compared with 76% of those who had psychotherapy alone.

Pianists quickly learn to play with robotic third thumb

6 experienced piano players and 6 beginners were tasked with learning how to play the piano with a third thumb, attached to next to their little finger and controlled by their feet. They were able to learn how to play the piano with the extra finger within an hour. Beginner players were also able to use the thumb, which demonstrated that familiarity with the task did not determine how easily they could manipulate the robotic appendage. This could prove very interesting research for prosthetic limbs and aerospace and manufacturing industries, where people work in confined spaces and robotic appendages could enhance their dexterity. The next step is to use a whole robotic arm and control the device using brain signals rather than foot controllers.

FROM AROUND THE WORLD...

NASA spacecraft will crash into asteroid in planetary-defense test

To test whether spacecraft could be used in the rare chance an asteroid puts Earth at danger, the spacecraft Double Action Redirection Test (DART) will slam into the asteroid Dimorphos at a speed of 6.6km per second in late September / early October of next year. Dimorphos is orbiting the asteroid Didymus, and the crash should increase the orbit's speed by at least 73 seconds, which will be viewed through changes in brightness over time through telescopes on Earth. The project has cost \$330 million. A small probe on DART which will be released 10 days before the crash will capture pictures of the crash, and in 2026 a follow up spacecraft will take more detailed pictures.

Meat-eating bees have very unique gut microbiomes

A species of stingless bee in South America is the only known bee which has evolved to eat meat. They enter a carcass through its eyes and can strip a large lizard to a skeleton in two days. A team of researchers set out to determine whether or not their gut microbiomes reflect their unique diet and how. Bees have had the same core five microbes in their gut for around 80 million years of evolution. By setting out raw chicken bait traps and collecting other stingless bees with different diets, they found the greatest differences in gut microbiome in meat-eating vulture bees. Their bacteria are acid-loving, similar to those found in actual vultures, which could help in the breakdown of meat. The team hope to investigate the genomes of these bees gut microbes and learn more about their role in bee health.

ARTS

» JEWELLED VESTIGES OF A RUSSE AFFAIR
 BY VAIDHISWARAN RAMESH
 FABERGE EGGS ARRIVE IN ALL THEIR GLORY
 AT THE VICTORIA AND ALBERT MUSEUM

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Edited by:
 VAIDHISWARAN RAMESH
 ALEX JACKSON

Theatre

Vibrant and Salubrious and Mirthful and Sassy

Vanya and Sonia
 and Marsh and Spike

★★★★

Where? Charing Cross Theatre
When? Until 8th January, 2022
How much? From £17.50 (Students)

Reviewed by **Disha Bandyopadhyay** Arts Writer

Christopher Durang's Tony award winning play Vanya and Sonia and Masha and Spike has finally come to Charing Cross Theatre in London via Bath after being postponed by the pandemic. From smashing coffee cups in the morning to the eponymous Sonia and Masha bawling on the floor, worried that their life is devoid of meaning – the play touches on a lot of sentiments that university students feel.

Vanya and Sonia, captured beautifully by Michael Maloney and Rebecca Lacey, are 50-something-year-old siblings who live together in their parents' home. They spent all their lives taking care of their parents and now that they've passed away, the 'kids' (now middle-aged adults, far from their prime), find themselves adrift with no career or purpose in life. That is, other than "feeling like a wild turkey". They are joined by their glamorous, confident, and successful actress sister, Masha (Janie Dee) who returns after a very long time to the family home that 'she's too good for now'. Masha who returns home for a costume party with a young, hot boy, Spike, in arm.... Masha who has been out there in the world dazzling stages with her performances while her siblings slaved taking care of the parents... And now, Masha wants to sell the family home.



An all round performance of midlife crisis

The story is aided by the psychic fortune-teller Cassandra and the neighbour's niece Nina who provide ample eccentricity to their quaint country home. Both comedically aggravating in their own ways, Sara Powell and Lukwesa Mwamba do an excellent job of bringing fresh waves of tears of laughter to the audience, playing us almost like they had voodoo dolls for us, just as they did to sway Masha's decision to sell the house.

Vanya and Sonia and Masha and Spike is a well-acted heart-warming comedy that touches upon sibling rival-

ry, midlife crises, and family responsibilities, delivered simplistically in the style of an American sitcom. However, unlike the days in London, that are getting shorter, the monologues did keep getting longer and less bearable as the play went on. Some of these sections are better preserved as just a literary piece, no matter how much gusto they are delivered with.

An overall enjoyable experience, Vanya and Sonia and Masha and Spike is a touching and affectionate story that will be running till 8th January 2022.

Exhibition

Over the Amazon and through the Andes

Peru: A journey in Time

★★★★

Where? British Museum
When? Until February, 2022
How much? £15 (Students)

Reviewed by **Ioanu Esanu** Arts Writer

What we call Peru today lies on a fascinating piece of land in the central Andes, the longest continental mountain range in the world. Although not particularly welcoming from a topographical point of

view, this territory has been home to many different civilizations for over 15,000 years. The British Museum with its latest exhibition invites us to take a "journey in time" and explore the people, the culture, and the way of life in Peru.

The exhibition is organized in Room 35 of the Museum, the circular central gallery flanked by grandiose marble stairs. Upon entering, visitors are greeted with a carefully crafted atmosphere. Speakers are playing soft sounds of antaras (pan flutes), pututus (conch shell

Credits: The Trustees of the British Museum



Vessel of a man and woman copulating Nasca 100 BC-AD 650

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ARTS

trumpets), rattles, and drums, emulating the music of Andean religious ceremonies. The dark walls are covered with projections displaying Peruvian views: coastal deserts, highlands, the Amazon River. The scene is set very effectively and drives home the main question of the exhibition: how do people survive (and thrive) in such a strange collection of extreme landscapes?

The items on display belong largely to the British Museum, with a few additions from South and Central American galleries, such as Museo de Arte de Lima. The items themselves don't exactly "tell a story" as such: they are mostly ceramic pottery, textiles, small sculptures, and decorative objects. But the British Museum curators have done an excellent job contextualizing the work by accompanying each gallery section with

descriptions of Andean mythology and traditions. Visitors learn about the apus, spirit of the mountains, protector of the highlanders. The reason Peruvian civilizations coexist peacefully with the landscape is because they see it as alive; nature is itself a living being that sustains human survival. We are also told about the Paracas and Nasca people, treating the desert like a canvas and creating incredible geoglyphs.

Disappointingly, the greatest empire of the Americas – Inca – gets little to no attention. The exhibition highlights their feats of agricultural engineering, growing crops at extreme altitudes, but brushes over their religious beliefs and state administration. Regardless, British Museum's 'Peru: a journey in time' paints a holistic image of civilizations old and new; the take-home

message is that modern society would not be what it is today without the knowledge and consciousness of the ancestors.

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Theatre

Salt flats and precious metals shine in Rare Earth Mettle

Rare Earth Mettle



Where? Royal Court Theatre

When? Until 11th December, 2021

How much? £10 (Students)

Reviewed by **Alexander Cohen** Arts Writer

Like the Salt Flat that is at the heart of story, there is more than meets the eye to Al Smith's new play *Rare Earth Mettle* at the Royal Court Theatre. Half satirising scheming capitalists, half haunted by the ghosts of Imperial legacies of trauma, the play manages to juggle multiple themes, questions, and perspectives. But because of the this, some questions are left unanswered, and some ideas undeveloped.

70% of the world's lithium under a Salt Lake in Bolivia lies. Anna (Genevieve O'Reilly), a doctor who wants to use the lithium to create a new medicine to alleviate the mental health crisis in the UK, and Henry Finn (Arthur Darvill), a tech tycoon who wants to build batteries for electric cars, must battle for possession of the land and the attention of its only living inhabitant. Both Darvill and O'Reilly characters' moral ambiguity becomes more uncomfortable to watch as the narrative unfolds. Darvill's character, an amalgamation of Elon Musk and Mark Zuckerberg with a bit of Elizabeth Holmes thrown in for Machiavellian measure, is particularly vibrant. He balances malice and charm to never be too unlikable. At one point he bribes a professor to sacrifice his academic integrity to literally rewrite history. Because the gruesome scene is played for laughs, any sense of seriousness is lost and the underlying themes go undeveloped. We do not know when to laugh or be appalled by moral outrageousness. The play struggles develop a sense of identity as a result.

Darvill and O'Reilly are supported by a strong ensemble. It is rare to see a large cast at the usually intimate Royal Court. It is even rarer to see a large cast

filled with layered characters. Each performer expertly manages to hint at their rich inner lives plagued by past trauma and sacrifice. They are united by the same question: Does the end justify the means? What are we as a society willing to sacrifice to achieve as a society? Take iPhones, something that previous generations could only dream of, that are made in factories with appalling human rights violations. What about the production of eco-friendly cars and the climate crisis?

Rare Earth Mettle had been the subject of controversy as the name of the Musk/Zuckerberg tech tycoon "Henry Finn" was originally "Hershel Fink", an osten-

sibly Jewish name even though Jewishness is irrelevant to the character and not mentioned at all. The name was changed a few weeks before previews. Having seen the play, the decision made was a very wise one. Given the Imperialist undertones of the character, a Jewish name (and one as distinctly Jewish as "Hershel Fink" at that) would have recalled anti-Semitic stereotypes about Jews and capitalism.

I hope that this play will be remembered for its intriguing story and incredible performances. Not this aforementioned controversy.

Credits: Photo/Helen Murray



Genevieve O'Reilly (left) and Carlo Albá (right) in *Rare Earth Mettle*

Exhibition

Jewelled vestiges of a Russe Affair

Faberge: From Romance to Revolution



Where? Victoria and Albert museum

When? Until 8th May, 2022

How much? £15 (Students)

Reviewed by **Vaidhiswaran Ramesh** Arts Editor

The last few decades of the Romanov dynasty and late-nineteenth early twentieth century Russia is one of aberrant dichotomy. The Empire was at its strongest yet and was even beating the British at their own game of diplomacy with The Great Game in Central Asia, and yet it had only just been served with an upset-loss in the Russo-Japanese war of 1905. Opulence bustled in St. Petersburg and Moscow and yet, discontent and revolution was brewing in the countryside. And within a couple of decades with the turn of the century, starting with the Potemkin mutiny, the 300-year-old dynasty would meet a sudden and rapid death.

It was in such a climate, when opulence and dismay were both equal food for thought for the Russian populace, that a jeweller by the name of Gustave Faberge enamoured the ruling class of Europe with his artistry. Perfecting what was, until then, a tradition into a respectable vocation and profession, Faberge became a common place name synonymous with excellence. With a workshop in Russia working like clockwork and by drawing on Russia's vast natural resource; Faberge carved out an empire in jewellery that has indeed stood the test of time, even if the enterprise he built didn't outlast the Romanovs for much longer (he died in 1920 in Switzerland having fled Russia after the Romanovs' fall).

The Victoria and Albert Museum's latest exhibition, 'Faberge: From Romance to Revolution' showcases some of the best artistry from that generation in what is the largest exhibition on the famed jeweller in well over a generation. Featuring multiple effects drawn from the State Museums of Russia (many possible for the first time since the end of the Cold War) and anonymous donors, including arguably the headline-grabbing highlight of 15 Easter eggs, the exhibition is elaborate in telling the story of how Faberge set up an empire in jewellery and the story of its exuberant clientele all the way from Russia to London



Credits: McFerrin Foundation, Houston

via Paris.

The repertoire here is without a doubt exhaustive. We see numerous artefacts, including cigarette cases and personal effects that adorned the purses of famous folk, from the King of England to the granddaughter of Marshal Murat. Bookkeeping from the workshop highlight the detailed plans that Faberge and his artists made for their clients; the detail and orthodoxy of the documentation looks to be from another age altogether.

The exhibition is also one of many firsts. The reunited Cossacks, mini figurines of the household guard of the Romanovs (lost since the revolution, only to be re-discovered in the attic of a Manhattan apartment in 2013) are displayed here for the first time in over 100 years.

Faberge had a workshop in Russia and a highly sought-after shop in London to cater to the far-flung clientele (which included Maharajas from India and the future King of Siam). His workshop was run by talented artisan families like the Holstrom! This enterprise angle is not amiss in the exhibition and together one can really sense the vision and grandiosity of Faberge; one that was cut short by the advent of WW1 and the collapse of the Empire soon after.

The fifteen Easter eggs, the highlight of any exhibition on jewellery, sit in a single room at the end of the exhibition. Arranged in a honeycomb fashion forcing us (the audience) to dance around to view them. I will save any description of them here as arguably in my opinion, there aren't enough words to praise them in them in this review. Only that their allure is so strong that, being surrounded by the opulence and craft of these eggs, for one moment transports us to a more exotic setting, perhaps in one of the state rooms of the Hermitage, and we feel like we are the Romanovs in that instance. The winter

Credits: The State Hermitage Museum



Copy of the Imperial Regalia, Fabergé. Master Julius Rappoport, Master August Wilhelm Holmstrom, 1900

egg is, in particular, a spectacle that is able to capture the Russian ethos and milieu even when viewed a century later.

In the beginning of the exhibition, we see household items of the Romanov's presented, including personal jewellery, study books, cigarette cases, the reunited Cossacks, and clocks that must have adorned their private quarters in the Hermitage. The exhibition strikes a master-stroke herein by hanging large portraits and photographs of the Romanov's brood over these exhibits looking down on us. They seem like common folk going about their lives — and Tsar Nicholas holds the withdrawn look that has come to symbolise the man who owned the world... and lost it in the blink of the eye. Princess Tatiana looks us at — a mere 23 years old when she was shot dead — as we peer at her necklace, snatched from her before the firing squad did their 'duty'. We watch their personal effects and wonder, whilst they probably watch and wonder too! This poignancy amazingly captures the tone of the rest of the exhibition and Faberge's work itself — amazing works of art caught up in a turbulent time, destined only for disappointment in a short turn.

Go for the jewels and you would not be disappointed. Only, amidst the glitter and glory of these pieces don't forget that there is a story behind as well. A sad story that only the Romanovs and Faberges of the world knew too well. Pay attention to them, and you are bound to walk out feeling awed and moved all the same!

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ENVIRONMENT

Edited by: MONAMI MIYAMOTO

MARIE MORI

MONIKA YORDANOVA

JACK CRIBB

What has COP26 achieved?

Bohra Shrey Sustainability Writer

COP26 in Glasgow started and ended in the same way – optimism tinged with a sense of inaction. Hordes of world leaders and famous faces descended upon the Scottish city, with impassioned speeches trying to set the tone for a conference many had described as the last chance to control runaway climate change. Sir David Attenborough, in his powerful address, told the room that the world was looking at them to work together and rewrite the future.

The problem with this speech was that some of the most important people in the world were not in the room to hear it. China's President Xi Jinping chose to remain in China, as did Russia's Vladimir Putin and Brazil's Jair Bolsonaro. Together, these countries symbolise some of the biggest challenges in the path to net zero – cleaning up manufacturing, reducing dependence on fossil fuels, and ending rampant deforestation. Their absence was not a good omen for the conference, and the agreements signed have undoubtedly suffered as a result.

The conference itself was questioned by some climate campaigners. President Joe Biden made his way to Scotland on his private 747, travelling to the climate conference in a motorcade made up of 25 heavy American SUVs flown specially from the United States. He did not stay for long, as the US President obviously cannot be seen negotiating at a summit that Xi Jinping has refused to attend – he made the return journey back to Washington after attending just two days of the fifteen-day summit. While he was here, he joined about 30,000 delegates flown in from around the world at great expense—both financial and environmental. Some of these delegates were hosted on two cruise ships hired specially for the occasion, seemingly by someone with a twisted sense of humour, considering cruise ships are effectively floating climate disasters. Never one to miss out on a chance to embarrass the UK publicly,

PM Boris Johnson admitted he would be flying back to London rather than use the train. In a world that has learned to meet virtually, it feels strange to try and save the planet at a conference that is estimated to have emitted over 100,000 tonnes of CO₂ in just two weeks – more than the emissions of 250,000 UK residents in the same time period.

Fortunately, some agreements were struck that will more than offset this. The first pledge was made on the second day of the conference, with over 100 countries agreeing to reduce methane emissions by 30% by 2030. While the total reduction is not exactly ambitious, it is nevertheless an important factor that will contribute towards overall climate goals, as methane is a greenhouse gas that is approximately 85 times more potent at trapping heat than CO₂ while in the atmosphere. This agreement should function as a way of measuring how serious signatories are about adhering to commitments they have made, with the short nine-year timespan meaning significant progress should be visible in a short timescale. The majority of methane emissions are concentrated and well known – for example leaky natural gas equipment and landfills—and as such improvements should be easy to implement. While not legally binding, this is a commitment that most should achieve without further persuasion. Some countries have gone beyond the 30% number, with Canada promising a 75% reduction by 2030. This, unfortunately, will not be enough to make up for the list of notable absences, including Russia, China, India, and Australia, who make up a sizeable portion of worldwide methane emissions.

The second day of COP26 brought another welcome announcement. 141 countries, covering more than 90% of the world's forests, agreed to end and even reverse deforestation by 2030. While a 2014 attempt at a similar agreement failed rather miserably, this agreement has several crucial differences. Despite the absence of Presidents Bolsonaro,

Putin and Jinping—or perhaps because of it—this new agreement has been signed by Brazil, Russia and China, all of whom have been cutting down vast swathes of their forests. £14 billion of financing has already been committed to support the transition for developing countries, with plans for direct payments to countries such as Indonesia and the Congo in return for protecting their forests. Governments have also received support from private corporations in this agreement, with more than thirty financial institutions agreeing to end investment in activities that lead to deforestation.

Some financial institutions have also agreed to consider the environment when planning their investments. Firms controlling £95 trillion of assets—40% of the global total—have said they will 'align themselves' with the Paris Agreement, aiming to limit warming to 1.5C. While this has clearly been done for selfish reasons—green investments have been performing better than traditional infrastructure and will eventually be the only option—it is still a net benefit to us all, as there is now more capital available to deploy technologies that will help in the transition to net zero. The agreement has been signed by a voluntary and self-regulated group known as the 'Glasgow Financial Alliance for Net Zero' and is completely non-binding. However, it is hoped that the sheer momentum of these firms turns their promise into a self-fulfilling prophecy.

The next major agreement took some time, but it was a pleasant surprise when it finally came. The USA and China, in a rare joint declaration, committed to working together in order to achieve the 1.5C goal set in the Paris Agreement. Nothing specific was mentioned, possibly due to the absence of both countries' leaders, but the very fact that they have committed to collaboration going forward is cause to celebrate. A war of egos between these two superpowers would have been disastrous for the rest of the world, as

both countries have a vital role to play in how we all transition to net zero. A virtual summit between the two leaders has been scheduled, and this will play an important role in the legacy of COP26.

COP26 came to a rather underwhelming conclusion, with the final day's headline agreement being aggressively passive in its wording. The first statement was that all parties should pledge to cut their emissions further – after meeting again next year. While yearly meetings are a good way of allowing the public and the rest of the world to police a country's climate commitments, delaying the first round of promises feels like a pointless move. Current agreements will only limit warming to 2.4C, well beyond what is considered disastrous. Developed countries agreed to significantly increase funding available to poorer states to aid them in their transition to net zero. This is not legally binding, and considering that total funds provided have not yet reached the lower previously-agreed number, developing nations are not delighted at this deal. In another promise with no weight, countries agreed to end subsidies for fossil fuels, with no deadline for them to do so. The final, controversial agreement was a statement to 'phase down' coal use, with the phrase replacing 'phase out' in the final hours of the conference after a late intervention by China and India, another unlikely partnership. The move drew widespread criticism, but is an understandable one that deserves to be considered beyond the headlines.

It is important to not forget what has happened at COP26. In a year's time, COP27 will be held in Egypt, and it is imperative that pressure is maintained on governments and companies. Change will only happen if the decision makers feel it is the best option for them personally—not for the planet—and so politicians and brands must be reminded that this is something important.

ENVIRONMENT

Reducing transport emissions - are electric vehicles really the solution?

Monami Miyamoto Sustainability Editor

A new announcement by Prime Minister Boris Johnson on November 22nd stated that all new homes built from next year onwards would be required to have electric vehicle charging capacity. The UK's transportation sector accounts for approximately 27% of emissions, and this law, which will see an estimated 145,000 new charging points, is anticipated to drive the transition towards more sustainable modes of transport (pun intended).

The electric vehicle (EV) market has boomed in the last few years, with sales in the UK increasing from 2.5% of all cars sold in 2018 to 10% by 2020. But one of the roadblocks to further expansion has been the lack of charging infrastructure — an issue further compounded by the high cost of using public ones. Home charging stations that are cheaper should help overcome this.

But are EVs and their charging stations really the solution to reduce transportation emissions for good? Although the new law does sound like we're heading in the right direction, it still has complications that must be overcome.

Firstly, if we want the whole of the UK to gradually increase EV adoption, we must address the existing disparity in the availability of charging stations between the North and South of the UK. Much of the rural regions are lagging far behind in the transition. Even if home charging stations are put in place, it becomes incredibly difficult for individuals to make the switch if public ones aren't readily available.

This also means that those in urban areas who purchase an EV might struggle when it comes to driving into the countryside. The unreliability of EV long-distance travel is also exacerbated by the impacts of extreme cold and hot weather on battery capacity. Similar to how your iPhone battery drains faster under these conditions, the stress imparted by high or low temperatures will shorten the battery life, requiring more frequent charging stops—which are not as common outside of London.

If we want to incentivise widespread adoption of EVs, the bare minimum is to ensure that they can be used as reliably as our current cars, including ways to improve the distribution of public charging stations across the UK. On the manufacturer's side, the development of more robust batteries will be crucial.

Another issue that arises when questioning whether home EV charging stations will actually incentivise EV

In the last year, companies including Toyota, Volkswagen, Ford and Hyundai have successfully manufactured, or are in the process of manufacturing, solid-state batteries. These overcome performance issues resulting from temperature impacting the electrolyte surrounding current EV batteries and the dangers of the battery catching on fire. However, given the difficulty and high costs to produce them, scaling up to mass-production levels has been a challenge.

purchases is the extremely high upfront costs. This financial barrier imposes a barrier for low-middle income families to switch over. The average price of an EV in the UK is currently hovering around £44,000, ranging from £17,350 up to £138,826—not exactly an easy purchase decision.

One solution might look like something like the federal EV incentives implemented in California as part of its Clean Fuel Rewards program. Eligible vehicles for this program, such as Tesla and GM vehicles, are sold with up to \$1,500 taken off the upfront sale price. That might not seem like a lot, but it's just one example of many other incentives in the US, such as the federal tax credit of \$7,500 and the clean vehicle rebate project, all of which can help cut down purchase costs. Unfortunately, price reduction still requires much more government support in the UK.

There's also the question of jobs—EVs tend to have fewer moving parts than the standard cars we see today that

use internal combustion engines. This means that if or when our economy transitions towards EVs, there may be less need for workers to manufacture, repair, and maintain our cars. Therefore, it will be crucial for the government to provide guidance and funding that facilitates employees currently in the automotive industry to adopt skills needed in the green economy.

The geographic divide, economic barrier and potential associated job loss of EV adoption point to the reality that this new technology transition is still very much focused on urban, middle and upper-class individuals. Whilst the new law is significantly better than nothing, and technological improvements in coming years should improve batteries and reduce costs, it's worth considering whether fitting houses with charging stations is truly the most effective approach to push this transition.

This raises a fundamental question: Are our attempts to knuckle down on EVs for reducing emissions in the transport sector a wise decision in the first place?

Dr Audrey de Nazelle, a Senior Lecturer at the Centre for Environmental Policy, has been researching the topic over the last several years. She looks at the intersection between transportation, environmental sciences, health behaviour, and urban planning. In one

of her studies, Dr de Nazelle investigated the overall cost-benefit of single-focused approaches vs holistic approaches for reducing air pollution. The prior includes solutions like improving vehicle technologies solely aimed to reduce emissions, whilst the latter encompasses broader solutions like encouraging modal shifts. The results showed that holistic approaches have a significantly higher overall cost-benefit in the form of increased physical activities and improved health of individuals.

All of this is to say that because we're too fixated on the new technologies surrounding EVs, we're disregarding the most basic way to reduce emissions: reducing the use of cars in the first place. This is achievable through measures such as strategic urban planning to encourage alternative transportation modes like biking and walking. The journey of reducing transport emissions can therefore massively benefit from expanding its horizons to encompass a broader range of policy solutions. It might not be as fancy as having a nation full of Teslas and charging stations in every home, but it's accessible to all and has the potential to improve our health alongside that of the planet.

Photo credits: Wikimedia Commons/Michael Movchin & Felix Muller



Are EVs really the solution here?

FUCWIT

- 1. Pancakes, surely? 94
- 1. Deep-Fried Charizard 94
- 2. Plont Palace 87
- 3. AKGroup 75
- 4. Hea-ing 71

Congrats to this week's leaders! As always, you can send your solutions to fsudoku@ic.ac.uk before this Wednesday, 12 noon.

You can check our complete leaderboard by scanning our QR code:



Easy Sudoku

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

Normal Sudoku

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

Difficult Sudoku

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

Nonogram

6 6 6
6 3 3 6 6 6 3 6
3 6 6 6 1 1 3 6 6 3
7 2 2 7 1 1 7 2 2 7
2 2 29 11 5 1 4 16 16 4 1 5 10 2 2
2 2 7 13 4 1 1 9 8 6 6 8 8 1 1 33 14 8 2 2

Killer Sudoku

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

Nonogram



CRYPTIC Crossword

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

REGULAR Crossword

P	G	F	A	S										
S	M	E	A	R	I	L	L	U	S	I	O	N		
T	N	O	E	L	E	A	D							
R	A	D	I	C	A	L	C	A	P	S	I	Z	E	
I	U	E	D		P	U	N							
F	U	L	C	R	U	M	B	A	H	A	M	A	S	E
E	U		O		L	I								
			M	A	C	H	U	P	I	C	C	H	U	
C			O	S		T	Z	I	G	Z	A	G	S	
R	E	C	L	U	S	E	Z	I	G	Z	A	G	S	
O	I	C		K	A	L	P							
R	A	T	C	H	E	T	R	I	D	D	L	E	R	E
E	I	E	O	I	G	I	E							
H	E	A	D	L	I	N	E							
S			L	G	T	D								

Easy Sudoku

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

Normal Sudoku

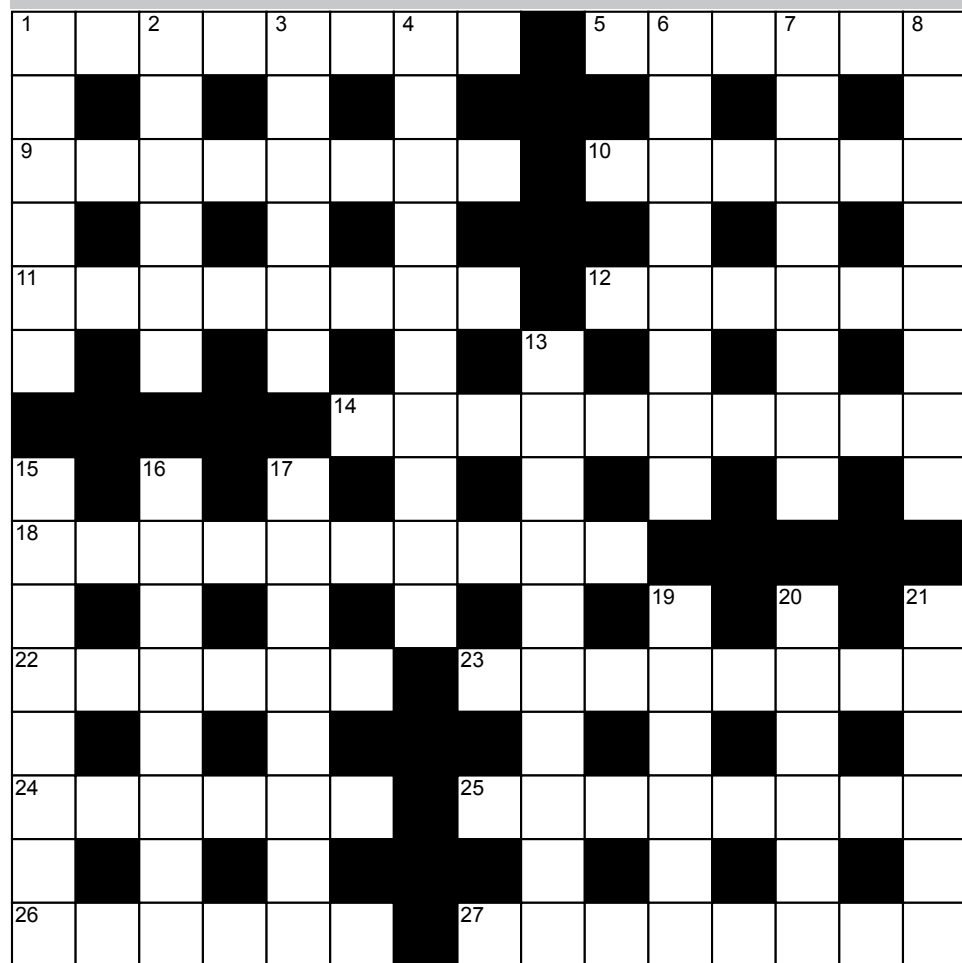
8	6	1	3	9	7	4	5	2
4	5	7	6	2	1	3	9	8
3	9	2	5	8	4	6	7	1
2	1	6	9	4	5	7	8	3
9	3	5	1	7	8	2	4	6
7	8	4	2	6	3	9	1	5
5	7	9	8	3	2	1	6	4
6	2	8	4	1	9	5	3	7
1	4	3	7	5	6	8	2	9

Difficult Sudoku

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

PUZZLES

CRYPTIC Crossword Grid



CRYPTIC Crossword Clues

Across

- 1) Totally defeated and thrown away outside the hospital. [8]
- 5) Change the guard! [6]
- 9) Magi and orcs having a romp together – it’s intensely pleasurable! [8]
- 10) In the cape, an utterly delicious crop is found. [6]
- 11) “Repent!” – wild church display. [8]
- 12) Pedal useful in a critical moment? [6]
- 14) See rust by an ocean? Fish out no crab. [10]
- 18) Broke down when one removed one’s cloak? [10]
- 22) Twisted over and over? [6]
- 23) Chemical they play around with to get lean, you hear. [8]
- 24) Grave of you to start being a gamine. [6]
- 25) It’s almost a no-brainer – coronavirus is like this! [8]
- 26) Shouted to the girl in the yard. [6]
- 27) It was shuffled, so I dealt by myself. [8]

Down

- 1) Right in wig company. [6]
- 2) Badly made lipstick shades that escaped rejection? [6]
- 3) Ceremonial adornments worn when Southerners win cricket series. [6]
- 4) Passionately vies to create, and then violently destroy. [10]
- 6) Next page in your LATEX editor! [8]
- 7) Might you long for its wood? [4 4]
- 8) Heaving as you cut into the ring. [8]
- 13) Idiot certain in what he works out. [10]
- 15) Tory lad I found mixed up in sin. [8]
- 16) How you carry on after being rotated 90 degrees? [2 6]
- 17) Shut this when told to be quiet – or when you’re full on your birthday? [8]
- 19) Sign that 1050 boys make. [6]
- 20) Two rooks at the feet of this creature. [6]
- 21) Plant again the tangled reeds around the East. [2 4]

REGULAR Crossword Clues

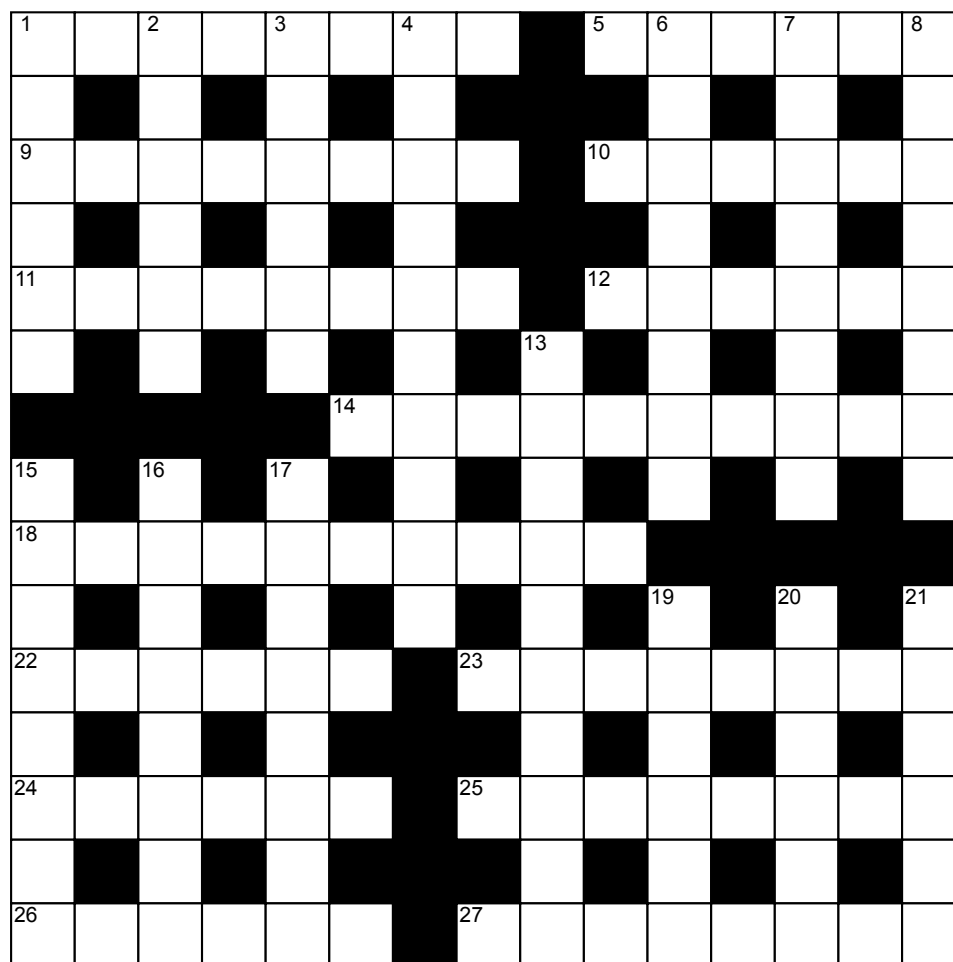
Across

- 1) Wind instrument traditionally danced to. [8]
- 5) Levelled. [6]
- 9) Charitable person. [8]
- 10) False. [6]
- 11) ‘In _____’ – in the most serious of circumstances. [8]
- 12) Longest river in the Britain. [6]
- 14) Peeping Tom’s implement of choice. [10]
- 18) Superfluous, unconnected. [10]
- 22) Vine fruits. [6]
- 23) “I reckon”, archaically. [8]
- 24) Writer’s vessel. [6]
- 25) Boris Johnson was found guilty of unlawfully attempting to _____ Parliament in 2019. [8]
- 26) Least crazy. [6]
- 27) Sword sheath. [8]

Down

- 1) Nurse, for example. [6]
- 2) Possess angular momentum. [6]
- 3) Trimmed (of a plant’s leaves). [6]
- 4) They’re poisonous in the garden. [10]
- 6) Out for a blood feud. [8]
- 7) Ancestors of Danes and Swedes. [8]
- 8) Profundity. [8]
- 13) Of a three-dimensional magnitude. [10]
- 15) Crime in the US. [8]
- 16) Affected, hit [8]
- 17) Having a great appetite. [8]
- 19) Angel baby. [6]
- 20) Mystery. [6]
- 21) Climb. [6]

REGULAR Crossword Grid



Puzzles Notices

We thank our contributors:

Freya Morris for the sudokus
 Stanley Scott for the crosswords
 Mihaly Ormay for the nonogram
 Raluca-Anamaria Constantinescu for the leaderboard, and
 Lito Chatzidavari for laying out these pages.

Hello puzzle solvers! Hope you enjoy our not-so-easy crosswords for this week (as well as the rest of our lovely puzzles).

As always, feel free to send us your suggestions for new puzzles. We look forward to hearing from you!

Points

Normal, Difficult sudokus each	3, 4 pts
Cryptic Crossword	7 pts
Regular Crossword	5 pts
Nonogram	3 pts

CLASSIFIED ADS

HIRING: RECRUITMENT SPECIALIST WITH EXPERIENCE IN WRITING ENTICING JOB DESCRIPTIONS

Apply below:

HEADING TO COURT SOON? CAN'T AFFORD AN EXPENSIVE LAWYER? SHIT OUT OF LUCK WITH LEGAL AID?

Then give me a call on 020 7594 8072. Mark Smith, Barista at Costa coffee for 3 years and runner-up in the shop's internal "best latte art" in 2018 and 2020. I've not had any legal training but I've watched Suits up to season 5 and barista sounds quite a lot like barrister.

HAVING TROUBLE COMMUNICATING WITH THE IMPERIAL COMMUNITY? THEN TRY THE NERDBOX, A SPEECH TRANSLATOR THAT WILL HAVE YOU CHATTING AWAY WITH PEOPLE FROM ANY DEPARTMENT IN NO TIME.

- Slow down your speech x5 so those morons in life sciences can understand you
- Translates to binary for those in JMC and computing
- Takes every word you say and puts it through a thesaurus to make it sounds way more wanky, for when you're talking to someone in DesEng
- Overlays encouraging phrases such as "No, don't say that, of course you have friends" for when you're speaking to people in the Maths department
- Automatically mutes your voice whenever you start to say "finance is immoral" to engineers

HALF PRICE!!! 1/2

EDIBLE HAT MADE FROM THE STUFF THEY MAKE FLYING SAUCER SWEETS FROM

Perfect for when the impossible comes true and you don't want to back down from what you said you'd do earlier earlier

CATNIP

DANGOOR PLAZA'S ALERT STATUE - COMMUNITY RESPONSES

Felix spoke to a selection of the Imperial community to hear what they thought about the sculpture design

Rival sculptor Jeff Koons expressed frustration with having not been selected to design the piece, saying he felt "shafted".

Some members of the public were furious at the design. "You could see the veins popping" said one on-looker, though it was not clear what they were referring to.

Nine out of ten men, when asked, awkwardly laughed and made flailing gestures whilst muttering incoherent phrases about size.

One student wondered whether, if one was to hit the sculpture, would it make a big "dong"?

Many noted that the piece really stood out on the road design, adding that it "penetrated" the view.

SkateSoc said they were excited to ride some new pipe

We heard a number of misguided questions about what would happen to the statue when it was cold.

The registry were happy at the prospect of welcoming Imperial College's new biggest member.



THE HEADLINES THIS WEEK...

Reports of sleep paralysis demons taking the form of Mariah Carey up 7000% in the run-up to Christmas

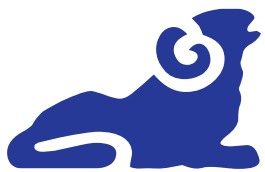
Baseball cap placed on social care invoice does little to soften the financial blow

Kleenex stock price rockets after consistent typos report the prevalence of Tory sneeze

A daring YouTube-crypto crossover leads to the sale of an NFT called "Charlie bit my coin"

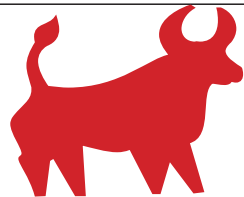
Digestive named "Best biscuit in the world" but only if you're a fucking boring loser

Plastic litter on beaches falls due to sharp rise in animals getting stuck in crisp packets, suffocating



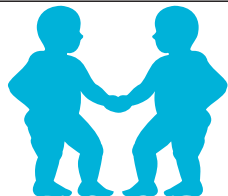
ARIES

Financial crisis deemed imminent as a bird in the hand now worth only half a bird in the bush



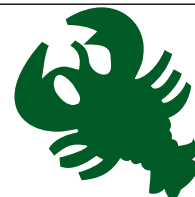
TAURUS

This week, this back, this pussy and this crack



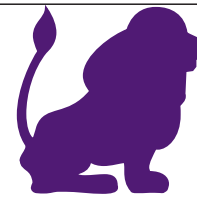
GEMINI

This week plans for HS2 are cancelled but your high speed shits are not



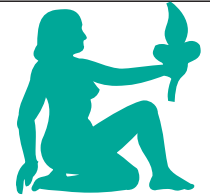
CANCER

This week, instead of a normal wank, you blow your genitals like a clogged nose



LEO

This week you copy the bees and take a shit on some flowers



VIRGO

This week your boyfriend says he would date you if you were a slug, but you think you'd take your chances of finding other hot slugs to date



LIBRA

This week you solemnly attend your friend Aleg's funeral. Why your family told you to break him before your one-off performance in Hamlet remains a mystery



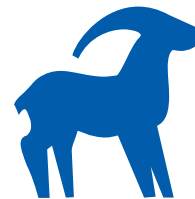
SCORPIO

This week you attend an enjoyable funeral for a heroic swordsman. It was a good mourning for a good knight



SAGITTARIUS

This week you fail No Vember November by vembering all around campus



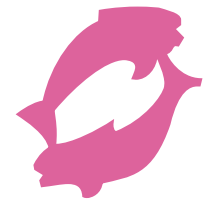
CAPRICORN

This week your appendix erupts in spectacular fashion



AQUARIUS

This week your spotify unwrapped is oddly familiar



PISCES

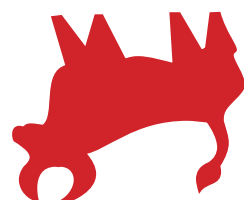
This week a local trenchcoat salesman on brink of ruin acquires a bulk order of 30 coats that saves his business. In unrelated news, 90 ducks have gone missing from a local farm

Pluto is in retrograde - your twists of fate are spelled out below...



NEGA-ARIES

This week you make an Imperial Secrets post blaming Alice Gast for how the Union operates. You would look like an idiot, if only everyone else didn't also incorrectly think she was in charge



NEGA-TAURUS

This week you go to the library to revise and find a seat. It's a fucking miracle



NEGA-GEMINI

This week you buy another houseplant but for some reason still feel cripplingly lonely



NEGA-CANCER

This week the shortening daylight hours let you spend more time in your skunk form



NEGA-LEO

This week, despite everyone in your course being in the same boat, it's particularly hard for you



NEGA-VIRGO

This week you go to Union Council and fall asleep. Everyone else was thinking it, you just had the guts to follow through



NEGA-LIBRA

This week you pin your financial hopes on the North Sea oil reserves being passed solely to you in the event of an IndyRef2 success



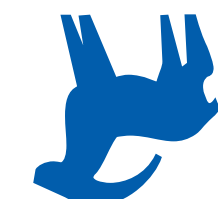
NEGA-SCORPIO

This week you start a campaign to stop the spice vendors, in the firm knowledge that thyme is money and inflation is starting to get out of hand



NEGA-SAGITTARIUS

This week you realise you're old when a first year doesn't know who My Chemical Romance are



NEGA-CAPRICORN

This week you vote in the Union's strike referendum because you love democracy



NEGA-AQUARIUS

This week you go vegan but still allow yourself to eat eggs, cheese, milk and chicken as that stuff doesn't really matter anyway and you've earned it



NEGA-PISCES

This week you narrowly avoid arrest following a poorly judge fist bump-condom ploy you saw on TikTok

ODDS AND ENDS

COMIC INTERLUDE

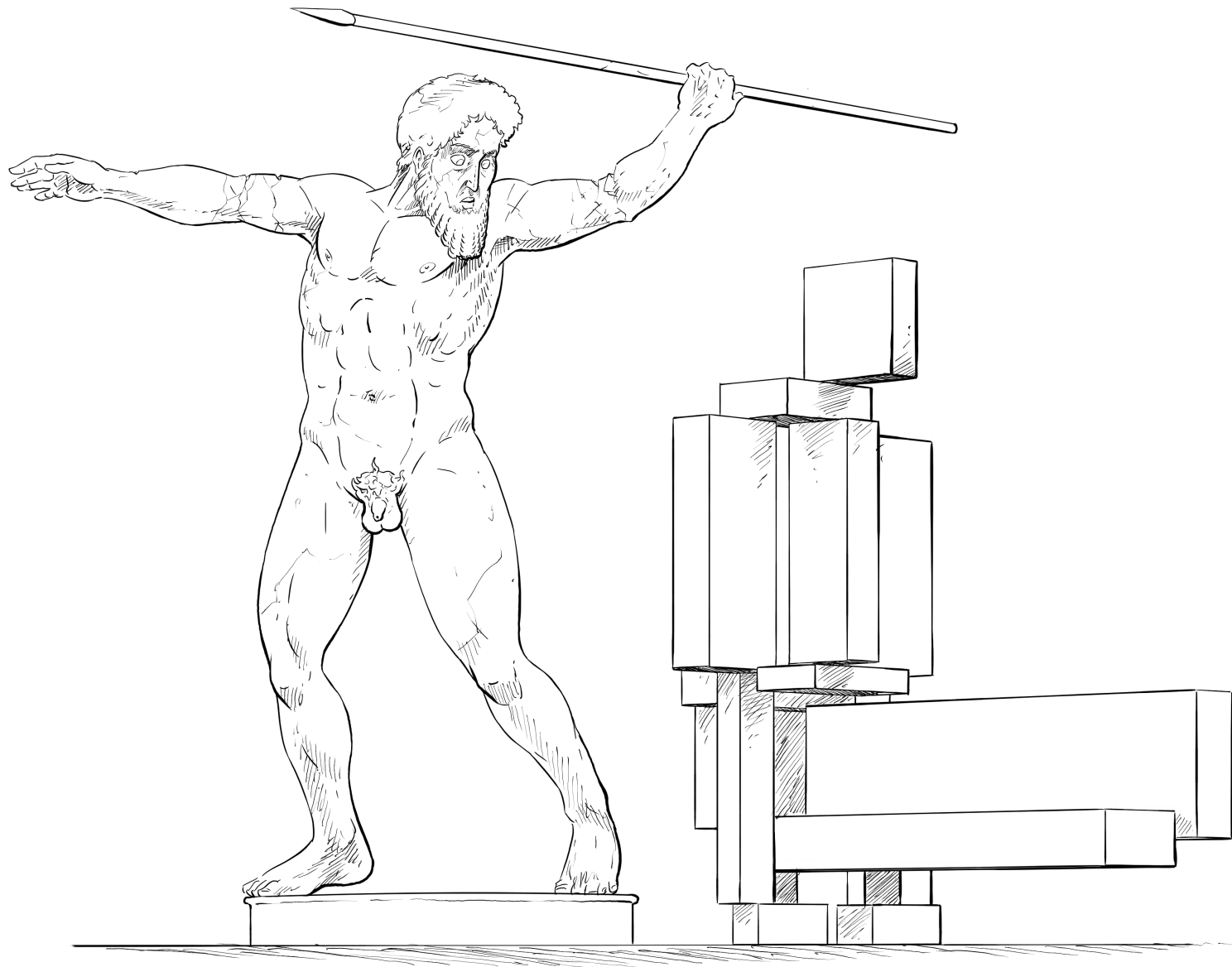
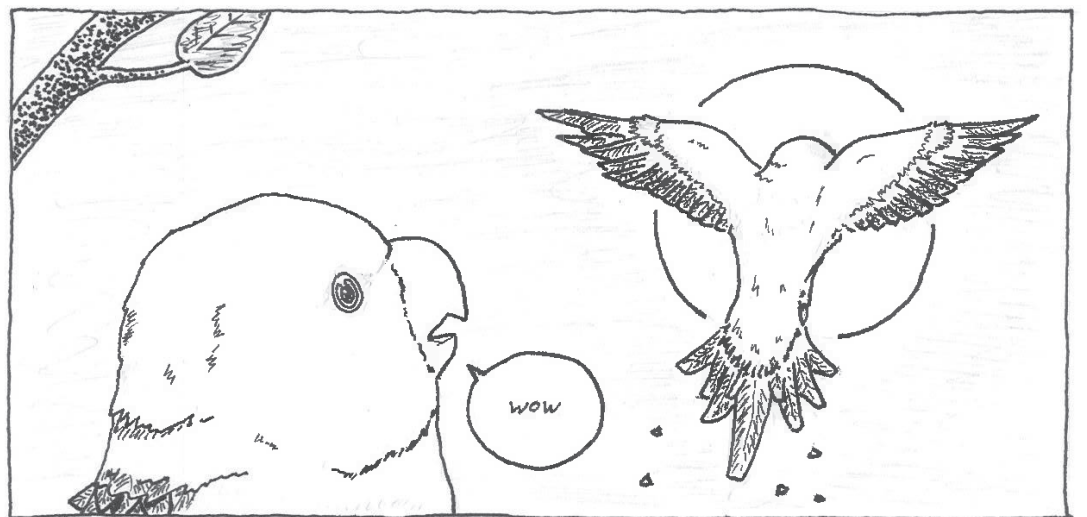
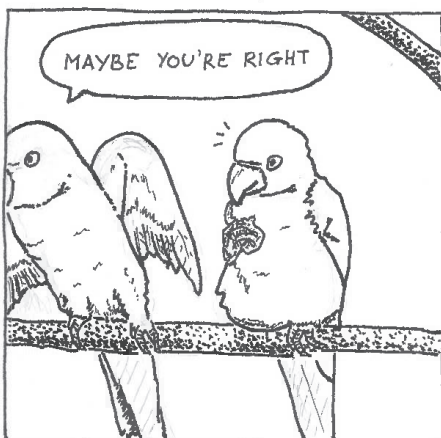
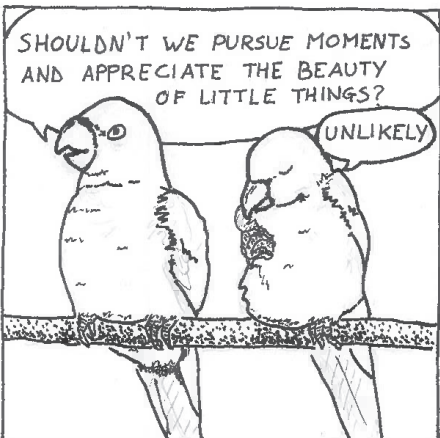
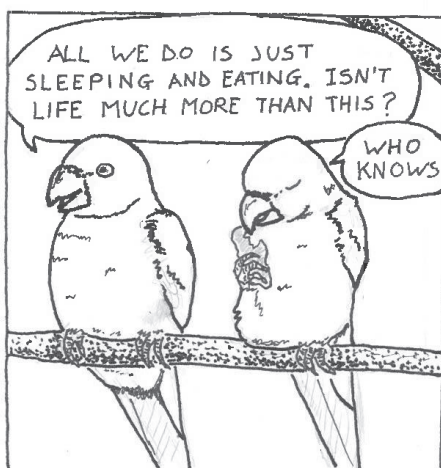
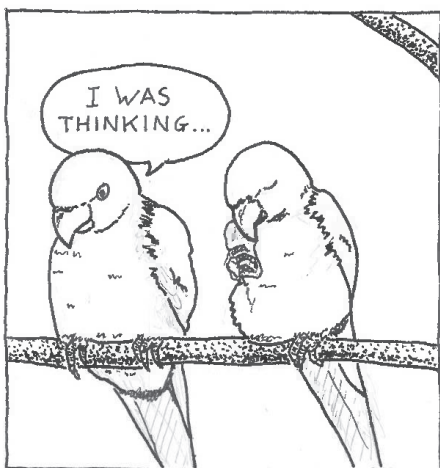


Illustration by Nicolas Geiseler Toran



Comic by Zhaoyang Jacopo Hu

FRIDAY, 26TH NOVEMBER 2021

MUSIC

Edited by: ROSIE MILLNS
TARA PAL CHAUDHURI

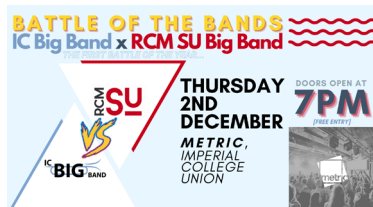
DON'T MISS THE GIG - IC BIG BAND VS RCM SU BIG BAND @ METRIC, 2ND DEC

ARE YOU TEAM IMPERIAL OR TEAM RCM?

COME TO METRIC ON 2ND DECEMBER TO

WATCH IC BIG BAND CLASH WITH RCM SU BIG BAND IN THE FIRST BATTLE OF THE ACADEMIC YEAR!

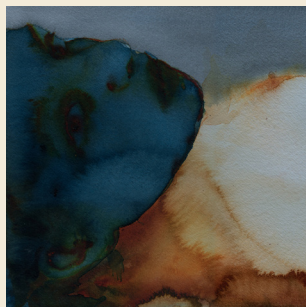
BOTH BANDS WILL BE PLAYING SOME IMMENSE SETS, SO YOU CANNOT AFFORD TO MISS OUT.



Single of the Week

I Am You by Just Mustard

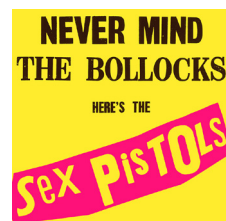
Sinister yet ethereal childlike vocals juxtapose industrial, dissonant, grungy riffs on Irish band Just Mustard's latest single. The track sounds directly lifted from a soundtrack to a David



Lynch movie. Whilst Just Mustard have no London gig dates announced at the moment, the band are supporting Fontaines DC in early 2022 and are working on their second album. Forget ketchup, 2022 will be the year of Just Mustard.

TODAY IN MUSIC HISTORY

IT'S 1976 AND THE SEX PISTOLS HAVE JUST RELEASED 'ANARCHY IN THE UK'. THE BAND WERE DROPPED FROM THEIR LABEL A MONTH AND A HALF LATER. 40 YEARS LATER IN 2016, FIVE MILLION POUNDS OF PUNK MEMORABILIA WAS SET FIRE TO ON THE THAMES BY THE SEX PISTOLS' MANAGER'S SON, WHO CLAIMED "PUNK WAS NEVER MEANT TO BE NOSTALGIC."
IN 1988, A CASSETTE OF DELICATE SOUND OF THUNDER WAS PLAYED ON SOYUZ 7, MAKING PINK FLOYD THE FIRST ROCK BAND TO BE PLAYED IN SPACE.



Music Reviews

Silk Sonic Don't Disappoint in their Groovy Debut



View online here!

Written by **Pallavi Ojha** Music Writer

Silk Sonic deliver some velvet funk about as smooth as a newborn in their debut album.

Silk Sonic, the unlikely pairing of Bruno Mars and Anderson .Paak, collided with our eardrums in March 2021, and blessed us with the instant hit: 'Leave the Door Open'. The saturated orange visuals, '70s flares, and playful energy were intoxicating. Silk Sonic told us, yes, music can actually be "smooth like a newborn". We then all collectively lost our minds waiting for an album from this incredibly talented duo, who took a whole eight months to deliver.

The world was so hungry for some velvet funk that this one single got replayed literally over 500 million times on Spotify and probably 500 million more times on TikTok. Don't get me wrong, it is excellent, but it begged the question: could the album ever live up to the immense amount of hype? I am here to tell you that yes, it absolutely does.

Some say a ten-track album is an instant classic; *An Evening with Silk Sonic* is just one song shy, but it doesn't seem to hold them back. There's a timeless quality to this album with the obvious soul and funk influences from Curtis Mayfield's 'Get Down' and the familiar warmth of Marvin Gaye's 'What's Going On'. D'mile and Mars' production is close to flawless. Bootsie Collins adds to the dreamlike vibe, playing his part perfectly as the mystical narrator in groovy interludes. As a listener, you are very aware that you are listening to musicians at the top of their game. It's clear this duo knew exactly what they were doing and executed it to perfection. There is a high level of technical precision here, but it does absolutely nothing to detract from the fact that everyone is just having fun. Silk Sonic are like Italian food. The sum is greater than its parts.

“
SILK SONIC ARE LIKE ITALIAN FOOD. THE SUM IS GREATER THAN ITS PARTS

'Fly As Me' hits immediately with a tight baseline groove, eccentric wind section, and so much damn energy, sending a clear reminder Silk Sonic do not aim to underwhelm. There's a lot of reverence for the pioneers of the genres fused together here, making references to Prince and Teena Marie. .Paak absolutely shines with so much charisma, uniqueness, nerve and talent that I am mesmerised, while Mars supplies some unsurprisingly excellent vocals. This song is genuinely addictive and we're only a third of the way through the album.

Looking at the rest of the album, 'After Last Night' is a personal favourite and a complete change of pace. Thundercat deliver incredible baselines and Mars gives a gorgeous, surprise electric guitar solo. This slower groove seems to have some 90's R&B influences which blend effortlessly. 'Smoking Out the Window' is unfortunately a miss and 'Put On a Smile' fails to grab my attention. However, I am pulled back with the manic intro to '777'. This track lets us know exactly why this duo might be legendary. .Paak lets his vocals and drums play off each other expertly and Mars shows off a magnetic charisma that

I don't think anyone else in the music industry possesses.

Overall, this album does not disappoint at all. It is no wonder .Paak says working with Mars is like a 'cheat code' to excellent music. The chemistry here is palpable and I am so excited to see what they come up with next. It's satisfying to see such a strong vision executed so well. Although the mid-album's lull in energy is its one pitfall, the music's recovery launches us back into that '70s funk, soul, and rap dreamscape, immersing us in its undeniable genius.



MUSIC

Mondays are for drinking with The Seldom Seen Kid.

Written by **Ben Batemen** Music Writer

*Ben Batemen reviews Elbow's most recent album, **Flying Dream 1**, released on November 19th.*



One of the first actual songs I learned to play on guitar was 'Grounds for Divorce' by Elbow. It's easy to listen along to Guy Garvey's catchy "woah-woah-woah"-ing on that track and get the wrong idea of the secrets that are hidden in the album it comes from – *The Seldom Seen Kid*. From the fuzzy, dripping-with-sweetness crooning on 'Mirrorball', to the anthemic 'One Day Like This', the album is a loud mix of all sorts of emotions and highs-and-lows. It is a celebration of life and love. The titular character of the album was Bryan Glancy, a friend of Garvey and his father, who died suddenly in 2006. The closing track, 'Friend of Ours', is directly dedicated to him.

Whilst *The Seldom Seen Kid* was written in Glancy's memory, the track of the same name on *Flying Dream 1* has Garvey reminiscing about the man himself. Hauntingly beautiful clarinets mingle with Garvey's voice as he creates the scene, imagining his wife meeting Glancy, recalling his charm and his wit, painting a

profoundly bittersweet picture of his memories with him. "Then he'd steal you for dancing / and you'd lend him your arms / and I'd stooge for your laughing / and you'd twirl in the chaos of charm." You can almost imagine the scene in some lively pub in Bury, some watering hole the band and Glancy frequented, perhaps where 'Grounds for Divorce' was set. Except where in 2008 there was a sense of being trapped, unable to escape, now there's a fondness for faces and places gone by.

Flying Dream 1 harkens back to those places of the band's youth, the faces which now only exist in pictures on the fridge and nestled deep in their memories. The title track has Garvey floating through the cold northern sky on the way back to his hometown. "Holcombe and Pendle, Nelson and Colne / Follow the landing lights guiding me home." He invites us with him on a journey back to the past. On 'Six Words', the band once again try and capture the pure emotion of falling head-over-heels in love with someone. It's not the same fuzziness as 'Mirrorball', or the same shout to the sky as 'One Day Like This', but it packs the same punch. When the chorus kicks in, Garvey is joined by the backup singers, singing "I know, I know the view from on top of the world." It's hard for me not to get a lump in my throat. "Look who loves me," Garvey smiles, and you can almost see the love hearts popping around his face.

The band's members have lost friends and family

over the years, but new life has come to them, too. In 'Come On, Blue', Garvey sings to his son: "Come on blue, as if that moon's not there for you." His words are oozing with love, and the simple accompaniment in the background serves as a fitting backdrop for the

affection that's flowing through Garvey's words. Jack Garvey is the subject of the closing track as well, in which he sings, "What am I on the Earth for? / If not to put you to bed?" The song is as triumphant and loud as the album gets. The simplistic nature of the line-up on this album doesn't interfere with just how proud Garvey is of the love he feels for his child. This time, though, instead of the sweeping sing-along ending of 'One Day Like This', we're treated to a calm piano solo, settling our emotions in the same way as rocking a baby to sleep.

Elbow's newest album doesn't break any boundaries. It's not

as charged and energetic as 2019's *Giants of All Sizes*, and it doesn't make as many bold statements as their other albums. Those looking for the sing-along charms of Elbow's previous hits won't find them here. Instead, you'll find a record dripping with memory and hope, composed of the small love-letters of music the band had sent each other over lockdown. Despite its small scale and simple ideas, it's quickly become one of my favourite albums of the year, packing an emotional punch that no band other than Elbow can quite achieve.

Peach Pit Announce New Album *From 2 To 3*

Written by **Joe Riordan** Music Writer

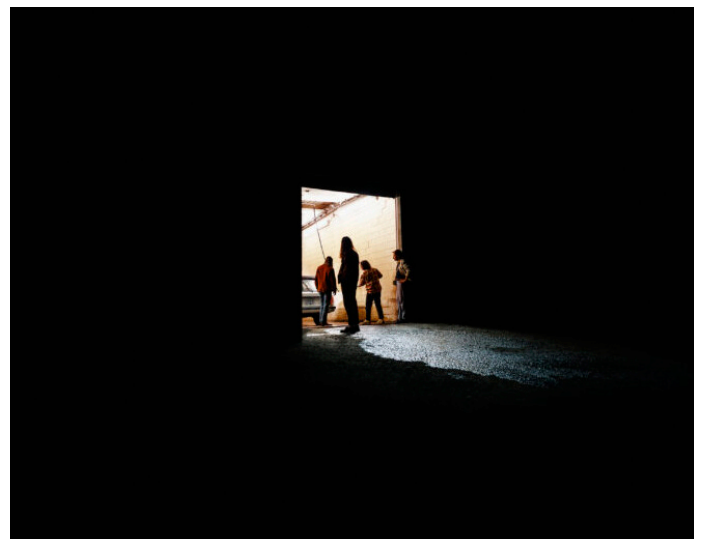
Peach Pit's big announcement of an album and a world tour with a new single to top it off can wait a few lines for some more important news following up on my last article. I managed to get Hippo Campus tickets and, as I write this, I'm realising it might clash with Peach Pit's freshly announced London date at O2 Forum Kentish Town so I'll be back to writing in a second after I check I won't have to go and see Peach Pit in a different city across the country.

Luckily, the dates don't clash. Back to Peach Pit.

Following the release of 'Up Granville', the debut single from their new album, Peach Pit have returned with 'Look Out!'. Usually, the band create spacey songs full of reverb and jingly guitar riffs provided by lead

guitarist Christopher Vanderkooy, one of my favourite guitarists whose parts I'm always excited to learn. The new track has all these aspects but feels much more stripped back and open, as if it was being performed from a moving car - as it actually is in the music video which plays like a love letter to long drives and the mindless thoughts that occur on them.

The lyrics, as always with Peach Pit, capture a particular melancholy idea while being accompanied by cheery music – "Look out for me, won't you though? / I just might pass you by". Singer Neil Smith's ethereal vocals enhance the thoughtful lyricism perfectly, spotlighted by the stripped back nature of the track. Of course, it wouldn't be a new Peach Pit release



without some divine guitar parts, and Vanderkooy provides in the form of a slide guitar riff that adds to the idea of road trips and travelling through the vast countryside. As well as creating room for the vocals to shine, the stripped back track creates a personal feel that is also explored in the lyrics. Each verse starts with the titular phrase, “look out” and seems to be talking to a different audience each time, including the listener in the second verse. I hope this new experimentation of different arrangements and ideas while staying within the unique sound of the band is continued throughout the upcoming album.

Speaking of the album, *From 2 to 3* is set to be released on March 4th 2022 and will be Peach Pit’s 3rd

studio album. Accompanying this release is a world tour which will take the band from their native Canada across North America, and eventually to the UK and Europe. This will sound familiar, but as I’m writing this, I’m faced with an impending ticket release. Tickets go on sale in 11 hours (Monday November 15th at 10am GMT) so I hope by the time you read this, and are immediately convinced to go buy tickets, there are still some available. Before the pandemic and before I even moved to London, I was meant to see the band in Leeds in May 2020 (a show which was cancelled for obvious reasons), so I will be taking a strategically timed break in my lab session tomorrow morning to make sure I finally see my favourite band live.



THE LYRICS CAPTURE A PARTICULAR MELANCHOLY IDEA WHILE BEING ACCOMPANIED BY CHEERY MUSIC

Gig Reviews

The Backseat Lovers Transatlantic Travels

Written by **Joe Riordan** Music Writer

The Backseat Lovers Travel Across The Pond And End Up In Hackney.



(photo: Joe Riordan)

As soon as The Backseat Lovers announced a gig in the UK, I had reminders set for the ticket release time. Getting tickets to a gig is a much less stressful experience in London than at my home in Yorkshire. It was easy to get to MOTH Club in Hackney, with no journey planning needed, compared to going to gigs in Yorkshire where you must meticulously plan trains to make sure you don’t get stranded an hour’s drive from home.

It was also easy to find people who wanted to go, which is unsurprising considering the band’s reputation of energetic live shows that had so far been confined to North America. After Tuesday November 16th 2021, this was no longer the case. The Backseat Lovers have crossed the Atlantic and provided a lucky 300 people with what I think was one of the best gigs I’ve ever been to.

About halfway through the set, with a phrase I’m sure he tells all his crowds, lead singer Josh Harmon proclaimed, “this is the coolest day of my life”. It looked like he meant it as he belted out lyrics together with a crowd that seemed to know every single word to every single song, a skill that seemed to impress the

whole band. Considering the stereotypes of American crowds being calmer than British ones, I’m not surprised by the excitement that could be seen on the band’s faces when the whole room started singing along to the opening song of the set, ‘Just A Boy’. By the second song, ‘Pool House’, Harmon was turning the mic to the crowd and grinning as we did his job for him.

Having almost exclusively attended gigs in Leeds and Newcastle, I was sceptical of Southern crowds when I first moved to London, and after a few underwhelming efforts I thought I was proven right. However, after tonight I will gladly admit I was wrong. Southerners have been redeemed. The crowd only got more involved as the set went on and the band played their hits ‘Kilby Girl’ and ‘Out Of Tune’, with an energy that built on their already bouncing recorded versions.

As well as providing London with their biggest songs, the band also played a new track from their as-of-yet-unannounced new album. Titled ‘Slowing Down’, it did just that. A calming, twinkly guitar and vocal verse relaxed the crowd and as always, the song built up and spotlighted Harmon’s incredibly strong vocals. The release date of the song wasn’t revealed by the band despite the constant requests of another fan to my right.

As the set came to an end, and before the band even got a chance to fully get off the stage, calls for one more song began and eventually the crowd descended into screaming for their own favourite (and as-yet-unplayed) songs to fill the short time the band still had to perform. However, when the deep, hypnotising first

notes of ‘Sinking Ship’ began no-one was disappointed.

Although there were no chants of “Yorkshire” and Londoners seem to love clapping along to almost every song at gigs, I witnessed one of and if not the best gigs of my life provided by The Backseat Lovers. If you haven’t already, listen to them and wait patiently for them to come back to the UK, which I’m sure they’ll be in a rush to do after that performance.



(photo: Joe Riordan)

SET LIST

Intro Jam
Just a Boy
Pool House
Pictures
Heavy
Kilby Girl
Drugout
Out of Tune
Interlude Jam
Slowing Down
Maple Syrup
Still a Friend
Sinking Ship

MUSIC Interview

Passing the Aux to Goldstag

Interview by **Rosie Millns** Music Editor

Every week Felix speaks to an Imperial student to find out what the Imperial community has been listening to. This week we spoke to Imperial's most popular disco pop band, Goldstag, following their lively sets at the Welcome Ball and Arts Night, and (at the time of writing) ahead of their headline Metric gig this Thursday (25th November).

How did you guys meet?

Rielley: Live music society's random band night. They put myself (vocals, keys), Charlie (guitar) and Oli (drums) together with another bassist, and that night I also met Tom (bass) for the first time. The guy playing with us was doing a PhD and didn't have time to join a band-

Tom: -so you went with second choice.

Charlie: The three of us, we did Feelin' Good. We picked it because it was an easy song, but we didn't get to practise at all. We were sat on the stairs beforehand. Oli was drumming on his knees, but it turned out well. If you can do Random Band Night well, you can manage.

How long have you been recording original stuff for?

C: We've been through a couple of stages as a band, and we've arrived at something we quite like now. We've got a back catalogue of things. At the moment we have two we are performing live, another one we'll play at Metric on Thursday, and one on Spotify.

R: Before these songs we had another 7 we had written before. We had an EP of 7 songs. The plan was to go into the studio and record them, and then COVID hit. By the time a year came around, we wanted to do something different. We might release them down the line.

Is the style of these songs similar to the stuff you cover, or a different direction?

C: The two original songs slot in quite nicely to our set. One was more on the dance end - I mean, everything we do we want people to dance to, but one was a bit more on the rock-y end.

So kind of like Abba meets Royal Blood?

R: It's kind of Queen meets Dua Lipa. I like a lot of music from the 70s and 80s, with a retro anthemic spin on things.

C: The 80's influence is really there. We are also influenced by artists who are bringing back the 80s, like Dua Lipa and The 1975.

What is the last song you listened to?

R: Ain't Nobody by Chaka Khan. It's a daily ritual. I listen to that song at least once a day. I love the intro especially. It's an instant pick me up that puts me in a good mood. It's good fun. I love Chaka Khan as an artist.

Do you have any standout memories you associate with that song?

R: It sounds a bit cliché, but it was introduced to me by my mum. She's a big fan of American 80's singers, like Tina Turner, Chaka Khan, Whitey Houston, and she used to play the song a lot when I was a kid. I'm just really lazy so I still listen to the same music now that I did when I was really young.

What is your favourite part of that song?

R: I really love the intro. I'm a huge fan of songs with good intros. It's one of those songs I always keep in mind when I'm writing myself. The way it builds each instrument layer by layer, it's immediately recognisable from the first bass part. The bridge is also awesome, I love it.

You're stranded on a desert island and can only listen to 3 albums for the rest of your life – go:

Tom: This was a difficult one.

C: On the theme of 80's inspired records, we picked *Future Nostalgia* by Dua Lipa. It has quite a range of stuff on it. The title track is unlike anything you'll hear in the charts.

R: *Future Nostalgia* as an album is full of good intros.

C: 'Break My Heart' is a track we like to cover, it's quite funky.

R: The album really kept the 80s in the charts. Another album for us would be *Hot Space* by Queen, who are one of my favourite bands. It's a pretty unknown Queen album. It wasn't a big commercial success, in fact it actually flopped quite badly. Critics at the time were saying, "Oh, it's the end of Queen." This was 1982. The album was basically the very first time that a rock band incorporated disco. There was a lot of backlash against it. It had a massive influence on a lot of stuff that came later, like 'Another One Bites the Dust.' Albums like *Thriller* by Michael Jackson too, he credited that album as being the one that taught him how to incorporate rock guitar solos with disco basslines.

C: The final one would be *I Like It When You Sleep, For You Are So Beautiful Yet So Unaware Of It* by The 1975.

R: It really rolls off the tongue.

C: There are a few really great tracks on that. 'UGH', that was my most listened to song in 2016. 'Love Me' too of course.

R: I'm a huge Prince fan, and 'Love Me' is a great throwback to that.

T: I was arguing against this, because every time I hear *The 1975* I have to think of Matty Healy.

R: Charlie got me listening to *The 1975* when we started living together. I was always one of those people who said I'd love them with a different singer. The production is amazing – how they stack their guitar sounds.



3/4 of Goldstag, featuring (from left to right) Tom (bass), Rielley (vocals, keys) and Charlie (guitar)
(photo: Aleksander Ziolkowski)

You're at a party and someone passes you the aux. What are you putting on?

T: What sort of party?

Oli: I would play 'Africa' by Toto.

R: I think it's unfair on Toto that they've got a meme status.

C: They released a song called 'Chelsea', I adore that song. They've got loads of good music but now when people think of Toto they think 'Africa.'

Who is your guilty pleasure artist?

C: Taylor Swift.

R: Charlie definitely likes Taylor Swift.

C: There's a few bangers in her discography, let's be honest. She gets a bad rep, but there are bangers.

R: I'm terrible, I tell people, "I don't do guilty pleasures," because otherwise they look at what I listen to and say 90% of it is guilty pleasures. There's no shame, I'm here for the bangers.

Who is your musician crush?

C: Probably Halsey to be honest. I kind of adore her voice.

R: Here he goes.

C: It's her on stage energy. And she's got this really unique vocal tone.

T: Charlie's into vocal tones. Mine would be Amber Bain of The Japanese House.

Finally, any last words?

C: Keep an ear out for those songs being released!

R: We had to essentially take a year off, it's nice to get back into the swing of it. We're speaking to venues around London, that's where we're at right now. It's exciting!

If you want to talk about your favourite songs in Felix, email us at music.felix@imperial.ac.uk!

Your Union



Closing today!

Voting for the referendum opened on Wednesday, but it is closing today at noon, so if you haven't voted yet make sure to do it before then. The upcoming strike action planned by the University and College Union (UCU) of College staff is affecting all of you. Because of that, this referendum, called by the Union President under the byelaws, will ballot on the question:

“Should Imperial College Union support the strike action due to be carried out by the UCU during the 2021/22 academic year?”

So what do you think?

imperialcollegeunion.org/vote

Check out your Officers' blogs!

Are you wondering what your elected officers have been up to? Well, they've been writing about it in their blogs and my-oh-my have they been busy!

Read about Daniel, your Deputy President (Education) and Sam, Deputy President (Finance and Services) and their work to improve your life at Imperial here: imperialcollegeunion.org/news-blogs.

In the following weeks we'll be sharing news from Nathalie, Deputy President (Welfare) who's been working hard to ensure everyone is safe in our venues, India, Deputy President (Clubs & Societies) and your Union President so check our website and social media for updates!



You're not alone!

UK Disability History Month is an annual event that creates a platform to celebrate and focus on the history of people with disabilities.

This year it's running from the 18 November to 18 December, covering HIV/AIDS Day (1st December), International Day of People with Disabilities (3 December) and International Human Rights Day (10 December). It also follows on directly from Anti-Bullying Week (16 to 20 November) which is important as 2.5 times as much bullying is recorded towards disabled as compared to non-disabled young people. The national joint themes in 2021 are:

Disability and Hidden Impairments | Disability, Sex and Relationships

More than 1,000 current Imperial students have declared a disability, a figure which has increased each academic year. Imperial subscribes to the Social Model of Disability which is not solely concerned with what the body can or cannot do but focuses on the barriers that prevent disabled people participating equally in society. Imperial has a lot of services available to ensure you feel supported and have the best experience studying here. Check the College's page for more info and support: imperial.ac.uk/equality/activities/disability-history-month/



Your Union

THE UNION BAR
est. 1997

FiveSixEight



Hosted by
10.12 MISTAJAM
19:30 till late | Beit Bars

Buy your tickets at: imperialcollegeunion.org/step-into-xmas

Step INTO
Christmas



More info & events: imperialcollegeunion.org/whatson



Things are getting oily...

Are the increasing prices of oil slipping away?

Credit: Worksite-Ltd on Unsplash



Demand has driven oil prices sky high...

Who and what is responsible for the increase in oil prices recently? Omar Al-Zadjali discusses further...

Omar Al-Zadjali

Writer



I was sitting in the passenger seat of my dad's Escalade as we made our way to our hometown in Oman in the summer of 2020. My dad, being a petroleum engineer, was eager to discuss the WSJ report, that was written a few days earlier, which had predicted a boom in oil prices. Prices were potentially reaching \$150 per barrel (pb) - following the unprecedented crash to negative value which had happened just a few months earlier. By this point, oil had recovered to over \$40 pb but the drastic effect of the pandemic on our economy was felt across the country.

Fast forward to now, we find the boom has indeed occurred. Oil is at its greatest prices since 2014 and despite slowly declining \$8 in these past 4 weeks, a strong number of people believe the boom is yet to peak.

Following a decade of poor returns, most private and publicly owned companies are favouring paying back-debts and rewarding shareholders, while aggregate spending on new wells remains flat. While it seemed all non-state-owned oil companies have been chastened by Wall Street and banks to avoid reinvesting into production, the strategy has worked in favour of companies; 5 of the 10 best performing S&P 500 stocks Year-To-Date (YTD) are shale oil companies.

The slow increase in production (coupled with the rapid return of the demand for oil as lockdown restrictions are being removed across the globe) is what has led to the great increase in prices we've witnessed so far. In the past 3 weeks, the price of Brent Crude has been decreasing, falling from a peak of \$87 to just over \$82 today, largely following speculation the Biden administration will be releasing oil from the United States Strategic Petroleum Reserve.

This comes as inflation is soaring in the US at 6.2% in October YTD with rising energy costs to blame and fuel prices rising over 12% monthly. This was

felt here in England as well with the governor of the Bank of England admitting he feels uneasy about the inflation situation. Yesterday, diesel and petrol prices hit an all-time high and the AA's fuel price spokesman commented: "It will likely usher in even higher costs for goods and services." The rising price of fuel has a domino effect, as bigger businesses use a system of surcharges for deliveries, so the greater expense is charged to the customer who passes it on to the consumer.

As of today (Tuesday 23rd November), it is all but confirmed that the Biden administration will release their reserve oil to sell to major Asian energy consumers after already asking China, India, South Korea, and Japan to do the same. According to Reuters, Japan and India are working to do just that. Biden has said in a broadcast: 'Before long, you should see the price of gas drop when you fill your tank.'

Brent is now at \$79.30, and a coordinated release of reserve crude oil, predicted by Citigroup analysts to be on the magnitude of '100-120 million barrels or higher', could mark a devastating end to the price rally we have seen. The Organisation for Petroleum Exporting Countries (OPEC) have resisted Biden's urges for more rapid increases in production due to the rebound in demand potentially being fragile. This is especially true now, with new lockdown restrictions introduced in Europe. All these symptoms scream an imminent bear market.

Despite all this, there remain many who think that the prices will remain at and above current levels this quarter and in the next year. A source told Al-Jazeera that South Korea and India aren't likely to contribute much, and the commitment of other countries involved is still not guaranteed. Major banks including Barclays and Goldman Sachs are unshaken by the reports, with Barclays raising its 2022 forecast of Brent to \$80pb stating the Strategic Petroleum Reserves are not a sustainable supply source and the price effect because of it would be temporary. Goldman were bold enough to keep their fourth quarter estimates of Brent for this year at \$85, rightly stating that the recent \$8 decline was not based off fundamentals, rather over 'excessive concern' about speculation.

"Our pricing model shows that the \$8 per barrel (\$8/bl) price decline since late October is equivalent to the market pricing in a 4 million barrel per day (b/d) combined hit to demand or increase in supply over the next three months," Goldman Sachs's analysts wrote in the note cited by Argus.

The bank noted that this is equivalent to a '100 million barrel government stock release as well as a 1.75 million b/d hit to demand due to current Covid resurgence.' This shows us how unjustified the recent decline has been and points towards the greater values predicted by Goldman. This also marks the \$120 June price predicted by the Bank of America last month to be very plausible despite the White House's efforts. It strengthens the argument that the markets already corrected itself for the release of crude oil from reserves, so if the release goes through, the price of oil should not decrease further (based off its fundamental value). We must also not forget that OPEC+ are meeting next week to discuss production and could easily fight the Biden administration by decreasing production.

This optimism for prices was also shared by the International Energy Agency who, after Tuesday last week, upped their average 2022 Brent crude prediction to \$79.40 per barrel. Their reason concerned the increase in demand due to the return of previous air-travel levels and gasoline consumption as lockdowns become (hopefully) a thing of the past.

Overall, there is an air of uncertainty surrounding the price predictions for the future of oil, but most evidence points towards an upcoming year of 80 dollar Brent crude, even if the following month brings a decline in prices.

Credit: Erik Mclean on Unsplash



SUPPLY... DEMAND... HUH?

It's actually pretty trivial –if more people are wanting to buy oil (say, to fill up their cars) but the amount of oil available is largely remaining constant, prices will have to go up to either cover the costs of producing more of the product, or even just to pocket more money and make larger profits... ka-ching!

INVESTMENT

Ownership will soon be a thing of the past...

So how did Alibaba's approach really work?

Credit: Mark Konig on Unsplash



Alibaba is now a huge player in the e-commerce sector, but their method certainly is unconventional.

Normally, a company that makes money tends to own the very thing it sells. Alibaba, however, has seen unprecedented growth in China and the western world without owning much... Utkarsh Sinha writes.

Utkarsh Sinha

Writer



As Imperial College students, certain images may now be more evocative than they were before coming here: late night (early morning) Uber Eats, Spotify-powered all-nighters, and summer Airbnb plans with friends. Beyond their immense popularity with students, all three of these companies have one key operating tactic that makes them almost unimaginably simple to scale – they own none of their goods.

This is by no means a recent phenomenon; Facebook (now called 'Meta') trades in data we want nobody to see, sharing slices of the data pie with Amazon, Google, and Microsoft. However, Alibaba is unique in its aggressively consumer-facing stance; since 2005, the business has grown to contain every manner of ancillary business required to analyse, target, process and provide for the needs of the common consumer. Ant Financial, their financial services platform, initially (under the guise of Alipay) allowed buyers to finance purchases with an escrow service on Alibaba, but was soon rebranded as it grew to control almost half of China's online payment market within ten years. Although Ant Financial was initially founded to make shopping on Alibaba easier, it is now the highest valued fintech company in the world and it is largely responsible for the near-extinction of cash in metropolitan China.

At this point you may find yourself thinking that this was a one-off, and perhaps even wondering why it matters at all. On the contrary, the Alibaba Approach is more successful than the pale imitation attempted by Google (the eponym) in the western world. Alibaba successfully pulled off the same party trick in entertainment before moving to internet browsing, app stores, game distribution, email, medical services, pharmaceutical products, and high-level sports. Beyond the obvious implications of a conglomerate using your data to tailor online advertising towards you, think about the power of a company that gathers data every time you buy anything using Alipay (WeChat users have to contend with a separate

conglomerate) and then subtly influences your views by shaping the culture, entertainment, and discourse of anyone with an internet connection.

"Surely someone must have said something," you lament, only to learn that Alibaba also owns Hong Kong's newspaper of record, the South China Morning Post, which is notable enough to appear on news feeds in the UK. Alibaba has mastered the art of being indispensable.

This brings me to the focal point of this piece: the most powerful companies will soon be those that pride themselves on their successful integration into your life, have nothing to sell and therefore almost nothing to lose. It can be argued that this is not just acceptable but socially beneficial if the companies in question do not have nefarious means. For example, few would suspect Spotify of supporting the maltreatment of the Uyghur community in the same way as Alibaba. In fact, I personally believe that the clear marketing tinge of Spotify's key community offerings (Friend Feeds, Wrapped, and the new Blend feature) does little to change the fact that they are genuinely effective tools and improve the user experience.

Regardless of your personal views on this business model, it appears to be the future. Within the automotive market, notable subscription schemes are currently offered by Jaguar Land Rover, Volvo, Audi, and Porsche. These companies are entirely responsible for designing and producing the vehicles they provide to customers, but the product here is financing, not the vehicle itself. Upon taking a closer look, the hallmarks of the Alibaba Approach come to light; these car companies are offering a related but separate service to their

Credit: Markus Winkler on Unsplash



Alipay was Alibaba's first foray into the financial platform market!

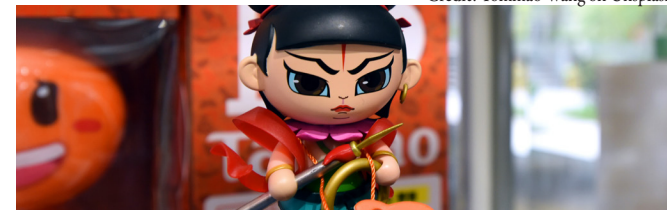
forte, and are using a subscription model that keeps them on customers minds throughout the year. All of these schemes are marketed with some focus upon the "lifestyle" embodied by the vehicles available in the subscription catalogue, and the freedom offered to the user by this choice of financing – the luxury automotive market's impressive customer retention is likely to grow further still if this turns out to be effective.

However, there are examples of this model failing. Within the automotive market itself, Mercedes and BMW are notable examples of companies that failed to expand beyond their pilot cities and ultimately shut down their schemes. Mercedes-Benz's Collection failed to attract more than a few hundred clients, most of whom ended up using the same high-tier vehicles for the duration of their subscriptions – the company could have made more with a traditional lease model that tied those customers in for greater periods of time. It is clear, then, that the Alibaba Approach only works when certain conditions are met.

The recent SEC lecture series prompted me to think more about a number of things, but perhaps most notably the value of assets and how that can change instantly. Maybe it would be best if everything were bought and sold on an open stock market with industry-specific regulations – moving to London for a year? Buy shares in a house and stay in it until you dump them. Speculation in classic cars and pieces of art would become more like the syndicates system used for racehorses, with prices less likely to skyrocket on a whim. Those in the line of Adam Smith have long wished for a universal system like this, but it appears to be genuinely feasible for large and valuable assets, even if it would be tedious to contend with such changes in the price of a loaf of bread.

For now, it is clear that companies are making bolder moves into our lives than ever before, but perhaps we can learn from them and start trading in things we have no right to own. After all, I would love to subscribe to Kensington Palace as long as I maintain a controlling share in my next meal.

Credit: Tommao Wang on Unsplash



Event Listing Volume 6 – The events really are coming in all shapes and sizes...

INVESTMENT

Credit: Imperial College Investment Society



The UK's first cryptocurrency lecture, introduced by Ahmad (the society's Head of Editorial)

Cryptocurrency Lecture 2

Wednesday 1st December 2021 HUXLEY 308 18:00 – 19:00

We're underway, and what a start we had!

The huge turnout for Lecture 1 was by far the most mindblowing spectacle that we'd seen as a committee since our first introductory event! Sean Yu and Imran Khan (our Cryptocurrency masters) definitely did a great job to introduce the world of Crypto to all who attended, and we can't wait to see what's in store next.

Next week, we're going to be doing a masterclass on what NFTs are and how a

metaverse works. **We're proud to announce our sponsors for Lecture 2... Block Dojo! They're a blockchain incubator who support start-ups to help them grow and succeed from day 1!**

We encourage you to sign up to our mailing list through the society's Student Union's A-Z listing (see right). Log in using your Imperial credentials and click on the big "Join" button underneath the heading 'Join Investment' (see above).



Preparing for Interviews

29th Nov 2021
18:30 onwards
ONLINE

Careerships are hosting a session on how to succeed in interviews! While many just prepare for the Q&A stage, they will explore the 3 stages of the interview in equal measure. They will also share how to score "bonus" points that: will make you a memorable candidate, leave a lasting impression, and ultimately get you the opportunity you are seeking.

Contact George Spencer (gws19@ic.ac.uk)



Stockhub Startup Pitch Night

2nd Dec 2021
18:00 – 22:00
CITY AND GUILDS LT 200

The Investment Society has partnered with Stockhub to deliver the Startup Pitch Night. This is a slightly different form of investing than stocks and crypto, but it can be quite lucrative.

This event is for anyone that is interested in investing in early-stage companies. The Stockhub event helps you to invest faster by providing you with access to suitable companies that you can invest in.



Weekly Stock Pitches

Every Tuesday
18:00 – 19:00
HUXLEY 308

While some of you have certainly been enjoying our events, we also have other ways that you can learn about Investment... mainly through our stock pitches!

For those of you who are unaware, our analysts, from our own student-led portfolio QT Capital, pitch investment proposals every week to you guys for you to cast a vote on!

Come join us every week to learn more and meet people who share similar interests!

Events at Imperial this week

Compiled by Ethan (Qzhe) Cui (Head of Diversity & Inclusivity, qc420@ic.ac.uk) and George Spencer (Head of Sell-Side Corporate Relations, gws19@ic.ac.uk)

COMMENT

» **HAVE AN ARTICLE IN MIND?**

EMAIL YOUR IDEA OR PIECE TO:

COMMENT.FELIX@IMPERIAL.AC.UK

Edited by: KHAMA GUNDE

Stop Selling Us Our Safety

► *Women shouldn't feel obliged to buy the freedom to walk around without fear.*

Zanna Buckland
Books Editor



I'm writing this piece primarily about women's safety on the streets, but also as another response to the comment piece 'Is Modern-Day Feminism Flawed?', which was published in Issue 1781.

First of all, the issue of women's safety, and how it's being addressed – a hot topic right now due to the increasing number of injected spikings being reported on nights out. Spiking in itself is a horrendous concept; that people would even consider poisoning others in order to take advantage of them is despicable. The recent injections that have been administered to many women and girls on nights out are even worse. It is almost impossible for a woman to protect herself against such a predator during tightly packed events in which both strangers and friends are mingling.

It is infuriating that in the past, and sometimes in the present as well, the excuses for women being harassed, abused, raped, and even murdered, have been that they were wearing too little, or asking for it, or that they shouldn't have been intoxicated. A couple

standout reports this year include Sarah Everard, who was falsely arrested, then raped, strangled, and burned to ash by a police officer, and Sabina Nessa, killed and left in a park. Both incidents occurred on short walks to or from home. The tables have turned slightly in

such cases, with blame shifting marginally towards perpetrators and victims given a little more support, but this isn't enough to keep women safe in the future.

Of course, these cases do not apply strictly to the female race, although there is an overwhelming skew towards us. I won't pretend that I'm not focusing on women in writing this piece either, but as a feminist myself, I am also taking into consideration the rights of countless other non-binary, and male, people who have to endure the same hardships. However, part of the reason why feminism focuses on women is that to reach gender equality, we are, along with non-binary people, the gender that requires more support.

Furthermore, the patriarchy is not a whimsical concept created by femi-

nists, as the writer of the aforementioned article seems to believe, but an ingrained system of hierarchies and values that allow men to get away with and achieve much more than women in general. Fighting this in no way implies that ALL men escape hardship, but simply aims for gender equality in as many areas of life as possible. This argument was explained in Issue 1782's 'Is Modern-Day Sexism Flawed', and Issue 1783's 'Men's Issues

are Real', and it could be extended and explained much further, but back to my original topic:

Women have gone to many lengths to protect themselves and others through buying products such as rape whistles and alarms, concealed stun guns and

pepper sprays, scrunchie drinks covers, self-defense rings, and even plastic 'knuckles' for shoes. The list goes on, and yet, drink spikers have risen above and beyond to find a way to dodge all of these devices.

Many women have also taken to catching taxis, Ubers, and Bolts more frequently in order to avoid the dangers of taking public transport or walking outside at night. A non-profit organization has even been launched via Instagram (@homesafeldn) that is accepting donations on GoFundMe.com to help women pay for this transportation – a valiant gesture in theory, but then again, how many of those donations will come from other women? It is also not a failsafe solution, as being alone in a private car with a stranger driving it can turn out to be just as dangerous as being alone on the streets. During 2017 and 2018, Uber recorded that they had received nearly 6000 sexual assault reports in the U.S. (with passengers being the victim on most occasions).

The heartbreaking reality is a vicious cycle of oppression, in which the more outrageous the reported incidents become, the more important it is to hide out and protect ourselves from having the same thing happen to us. But women can't hide forever and we should be free to go out at any time of day without feeling unsafe. There is even an argument that the recent university boycotts of clubs plays right into the hands of our oppressors. Apparently the current 'solution' to this is to feed money into the economy out of our own pockets (or bags and purses since females are generally not afforded the luxury of pockets; another ruse to drain our bank accounts). When will the world realise that safety can't continue to be sold commercially, and we should instead be trying to combat the root of the problem?

This is the third counter-argument to the issue 1781 comment article titled: 'Is Modern-Day Feminism Flawed?'

Please visit the comment section of the website at felixonline.co.uk if you wish to read the original article and the past two responses.

If you would like to join the discourse, email us at comment.felix@imperial.ac.uk

Education in feminism and women's rights at a young age needs to be much more concrete, explaining what exactly 'feminism' means, how to recognise when it is reasonable and when it isn't, and showing how we should be treating women, and others in general. Feminism, put simply, is supporting women's rights so that we may be held to the same standard as men – not above them. The term is partially misleading, however if one took the time to understand what it stems from, it is shocking that they could believe radicalism is the same thing as regular feminism.

I firmly believe that educating young people in their treatment of others is the most efficient route to, not only a more gender-equal society, but one more amenable to racial and cultural equality as well. There are an endless number of female (and non-female!) tribulations in our current society, and it would take many pages of writing to fully argue the validity of these, but I hope to have made at least a small dent in the discussion about women's rights.

Photo credits: Filip Mroz on Unsplash



A woman walking alone at night.

COMMENT

Is it Beginning to Look a Lot Like Christmas?

► *When is it ok to start celebrating Christmas?*

Samuel Ward
Comment Contributor



Christmas is typically celebrated universally on the 25th of December. However, when the holiday season commences is a fiercely contentious subject. On the surface, this may appear as an innocent topic of conversation, and yet underneath lies a ticking time bomb of controversy which carries with it a series of explosive implications. These include the following: Christmas tree assembly, Christmas playlist compilation, and mulled wine manufacturing.

Tesco would have you believe that Christmas starts in October; talk about giving an inch and taking a mile. Obviously, there are serious economic incentives for the UK high street to start advertising Christmas earlier than would be expected, providing one benchmark to when Christmas starts, no matter how much the thought of eating a mince pie in October may make your skin crawl!

In Kanye West's debut Christmas song titled "Christmas in Harlem", Kanye famously describes celebrating Christmas "Right after autumn falls". Consulting

the world wide web, the Autumn, or as Mr West describes "Fall", ends on the 21st of December. This somewhat surprised me as I thought Kanye was a big Christmas fan, although the proximity to Thanksgiving in the US suggests his possible need for rest in between the seasonal periods. Mr West's perspective on this matter helps provide international context; where it must be stated that this is a global issue and underlines the narrowmindedness of some attitudes.

The common perspective is that Christmas and its associated festivities commence on the 1st of December, no ifs or buts. Seeing as this is the month in which Christmas Day occurs it makes sense to initiate the holiday season on the 1st given it is the beginning of December. That is not to say that this line of thinking is without its flaws. First, there are still 24 days remaining until the date itself, with many schools and employers continuing to work past this date until a few days prior. Furthermore, does that mean you should go out and buy a Christmas tree on the 1st? In which case this presents the possible risk of pine needles clogging up the carpet. The ab-

scission of needles in Balsam Fir (*Abies balsamea*) trees was analysed in a study carried out by the Christmas Tree Research Centre at Dalhousie University, Canada. The paper identified an estimated 100% abscission rate after roughly 2 weeks assuming a 1-week abscission initiation period. This would suggest that the optimal date for Christmas tree purchasing should lie around the 10th of December, or the 21st if your name rhymes with Can Ye Rest. Although this analysis provides detail on Balsam Fir trees which are native to North America and similar to the native Norway Spruce (*Picea abies*) which is typically sold in the UK, it provides a comparative representation as to the potentially devastating consequences which could occur should needle abscission commence earlier than expected.

Contrary to the early Christmas theories, there are those who believe in the twelve days of Christmas, which start on Christmas Day itself and run through the new year until the 5th of January. A day prior to "Epiphany", more commonly known as Three Kings Day, which commemorates the visit of the three wise

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When can we start eating Mince Pies?

men to Jesus Christ days after his birth. Whatever side of the proverbial fence you may stand on, Christmas means different things to different people and should be treated as such. Celebrate when you want with those you want. In the immortal words of Ferris Bueller, "Life moves pretty fast. If you don't stop and look around once in a while, you could miss it..."

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Is it time to put up the Christmas tree?

You Are Never Too Busy.

► *Embrace each moment you spend not working.*

Khama Gunde
Comment Editor



Yes, this is going to be a motivational piece. But this is going to be a very hypocritical motivational piece. ‘Why’ you ask? Well, I am one of those individuals who spends more time thinking about what I need to do, than I actually spend *doing* what I need to do. Furthermore, I am also one of those people who cannot sit still or relax when I know that I have tasks to complete. I often do this because I tell myself I am ‘too busy’, and so my long to-do-list takes precedence over all other areas of my life.

There is no doubt in my mind that this behaviour is partly due to the heavy workload that gets thrown at me each term. However, the workload is something that I cannot change. In fact, I will always have more to do, and sometimes when I think about this, I feel trapped. Because it is hard to look at the future without feeling quite bleak when you realise that you will always be chasing deadlines.

Despite the obvious fact that I will never consistently be on top of things, I often refuse to believe that I will never complete my to-do-list. In defiance, I double down my efforts and devote even more time to my tasks. Then: I start bailing on social events, I miss lectures, I skip tutorials, I evade sleep, and

I try to minimise any time spent doing the most mundane of tasks. Gradually my days become swallowed up with work, but my productivity never maximises for some reason. And each day becomes more miserable than the last.

I tried to find freedom by releasing myself from the shackles of my list, but this approach just demanded more and more of my time until I found myself overwhelmed – and often without much work to show for it. On the contrary, where I really found my freedom was in embracing each moment that I spent *not* working.

I’d go even further and say that I renewed my interest in my course when I spent less time working on my subjects. I am still as busy as I was before, and I still feel rushed most days – but by forcing myself to allocate more time to extra-curricular tasks, I found myself more focused on my academic tasks. Allocating time off is the easy part though, the real freedom comes when you immerse yourself in those moments. In other words, it is just as important to devote your attention as it is to devote your time.

I cannot take credit for this realization, I have to thank Tony Crabble, author of ‘Busy: How to Thrive in a World of Too Much’. Funnily enough, I have been ‘too busy’ to actually complete the book, but Crabble prepared for readers like me. In the preface of the book, he gives a brief run through of the book’s content and one sentence on how to ‘gain mastery’ in life stood out to me. Crabble says we should be “shifting our focus from managing time to managing attention”. He goes further in his book to compare the state of ‘busyness’ to a state in which we are ‘attention deficit’.

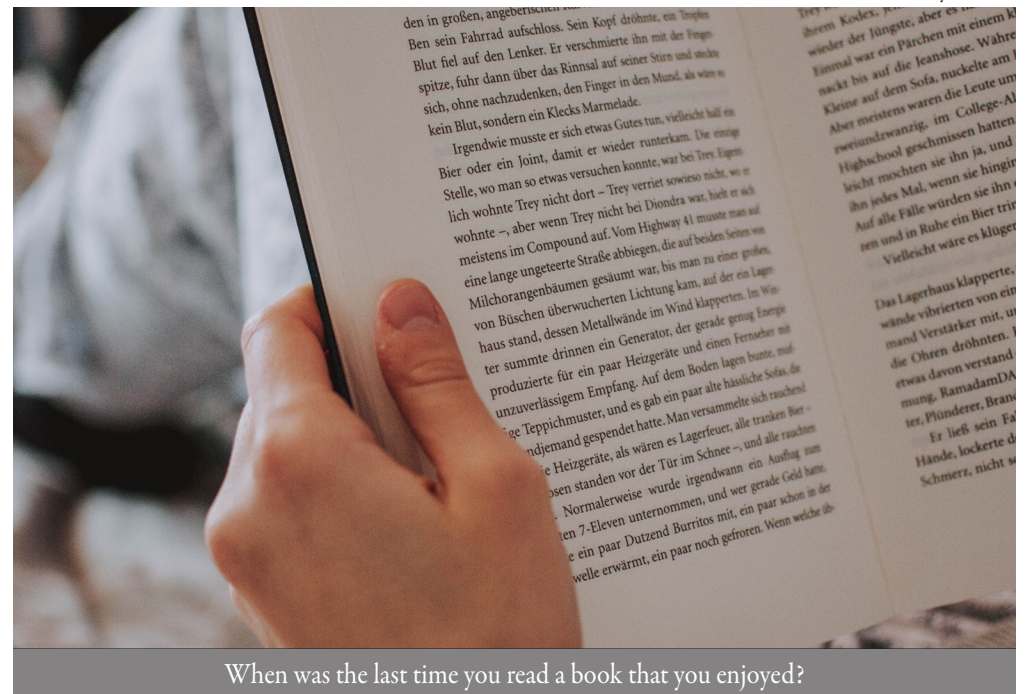


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When was the last time you read a book that you enjoyed?



ALLOCATING TIME OFF IS THE EASY PART THOUGH, THE REAL FREEDOM COMES WHEN YOU IMMERSE YOURSELF IN THOSE MOMENTS

So, I believe that it is imperative to stop your academic work from consuming more and more of your time, especially if you want to improve your academic performance. There is nothing wrong in taking a break and forgetting about that piece of coursework that is due tomorrow. In fact, it will not jeopardise your academic career if watch a long film in bed with the lights out and forget about Imperial for three hours.

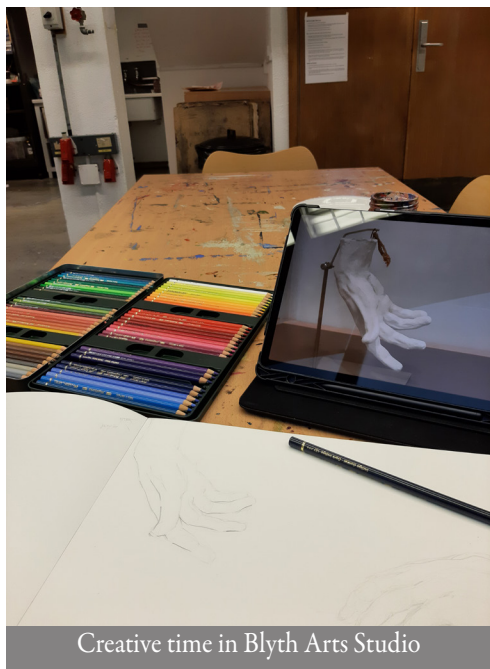
Some may call that escapism, but I am speaking from experience. I completed my 1st year happy with the amount of work I put into my degree, but I also felt a pang of emptiness in hindsight. Before Imperial, two of the things I loved doing more than studying were reading, and art. Yet in the whole of my 1st year here, I did not read a single book and I did not touch any of my art supplies. On top of that, I was a student in the middle of London, surrounded by so much culture and opportunities and still I spent as much time

as I could slouching over my desk in my small Woodward room. I would be walking past the V&A everyday and yet all I could think about was how late I was. Eventually I recognised that the workload will always be high, the deadlines will come and go, but you cannot reverse time to take back all those hours you didn’t actually need to spend on a task.

I wish I had spent more time exploring my extra-curricular interests, but I cannot focus on my regrets. Instead, I have been slowly branching out by pushing myself to do things I never thought I’d have time for (like becoming a Section Editor for Felix) and thus developing a deeper sense of fulfilment in all aspects of my life. For example, I recently attended an Open Theme Art Class held at the Blyth Studio even though I had a lot of tasks I still hadn’t completed. For almost two silent hours, I immersed myself in a sketch – without reaching for my headphones to listen to music or for my phone for distractions. Have you given yourself time to have a moment like this lately? If you’re not sure about what hobbies you can take on, I’d suggest that a good starting point is to immerse yourself in the mundane parts of your day, like cooking food.

Ultimately, I want to stress that you should allow yourself to slow down and embrace the moments in-between tasks.

Photo credits: Khama Gunde



Creative time in Blyth Arts Studio