



Felix

The Student Newspaper of Imperial College London

NEWS



Success for Imperial alumni in council elections

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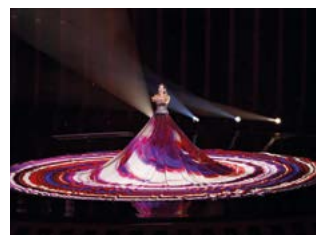
SCIENCE



100 years of Richard Feynman's genius

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Our six-page pullout with all you need to know

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Can video games ever count as art?

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Imperial's environmental efforts are "largely uncoordinated" according to the Greening Imperial report // Imperial/Thomas Angus

Imperial needs to do more for sustainability and climate change, report argues

NEWS

Fred Fyles
Editor-in-Chief

The Greening Imperial report, which was released last week, highlights a number of areas where Imperial is outperformed by other universities.

Imperial College London needs to do more for sustainability and the environment in order to keep up with fellow universities, according to a new report released last week.

Greening Imperial, an

initiative to “understand and improve how Imperial College London implements sustainability and action on climate change,” have spent the past year working on the 100-page report, released last Friday.

The report, which was based off a College-wide survey, focus groups, and multiple MSc projects, concluded current work on sustainability was “largely uncoordinated... under-resourced, and poorly documented” with “a limited impact on our own operations and research translation.” 98% of those surveyed felt Imperial should be doing more to act on sustainability and climate change.

Professor Geoff

Maitland, Professor of Energy Engineering at Imperial, and a Greening Imperial co-author, told *Felix* the report was “a call to action to raise Imperial’s aspirations and achievements in creating a sustainable, low-carbon future for itself and the world. After all, if a university such as Imperial cannot take a long-term systems view, how can we expect governments and society at large to take these challenges seriously?”

The authors suggest a number of recommendations the College should implement to fulfil their promise to “safeguard the environment for future generations,” including the creation of the higher

management post of Assistant Provost (Sustainability), the setting of “meaningful sustainability targets that are consistent with national and local targets”, and engagement of the Imperial community to deliver these changes.

The paper was developed from the Greening Imperial Scoping Study, which was approved by Provost’s Board in February of last year. The authors of the report include academics from the Grantham Institute for Climate Change and the Environment and the Centre for Environmental Policy, faculty staff, and representatives from Imperial College Union.

Current Performance

Imperial’s Strategy 2015-2020, published in 2015, stated the College would “substantially increase our involvement in advising governments and industries” on the environment. The report highlighted a number of areas where Imperial had performed well, such as a reduction in the amount of waste going to landfill, and encouragement of cycling and public transport use.

However, over the previous few years, Imperial has performed poorly in terms of environmentalism and sustainability, compared to similar universities, ranking in

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It's not easy being green...



Another week, another issue. As we get closer and closer to the end of term, I'm equally sad about finishing my term as Editor, and a bit relieved I won't have to spend my Thursday evenings in a cold sweat, rushing against a print deadline, and churning out another logorrheic spew of an editorial. One aspect of my editorship that I hadn't really expected was how finding out what's going on around College can be both exciting and exasperating – this week's cover story, about the Greening Imperial report perfectly encapsulates this divide.

We first heard about the Greening Imperial initiative way back in October time, when I was still a fresh-faced baby editor, rather than the grizzled husk you have now. I got in touch with one of the organisers, Dan, and we met for a coffee to chat about the project. We were both super excited about the initiative, which would take a look at how Imperial is currently working on sustainability, the environment, and climate change, as well as what they could do to improve.

As time went on, things

got a bit delayed, as these big projects often do, but now the report has finally been released – hooray! Here at Felix, we spent our weekend reading and digesting the full 100 page beast, so you wouldn't have to. And here's where the exciting/exasperating bit comes in: it's really exciting that such a project is going forward, and that the team were able to lay out a series of structured, sensible ideas for how to make sure Imperial is one of the leading lights in environmentalism – not only within the university sector, but across all areas.

However, what's exasperating is how little has been done so far. Despite all the research into sustainability and climate change that academics at Imperial are sending out across the world, when it comes to our own practices, we desperately need to get our house in order. 141st in the People and Planet League Tables. An increase in greenhouse gas emissions since 2009. A spike in electricity usage by 15% over four years. Continued use of plastic cutlery and cups, despite the damage this waste can have on the

oceans. Investing millions in fossil fuel companies. The list, unfortunately, goes on.

It's shocking that, for a university that prides itself on its excellent scientific practice, we're not paying attention to the myriad of scientific experts telling us what needs to be done to have a chance of delaying the major catastrophic effects of global warming. It's shameful that, while we have incredible people at the Grantham and the Centre for Environmental Policy working to try and save our planet, as a whole we're hastening its demise.

But while the Greening Imperial report is a good start to fixing some of these issues, it's not a silver bullet. It now needs to go through planning stages; people in the Blue Cube need to approve the changes, and all of us across the campus need to pitch in to help. And that's where you and I come in. These changes won't be made unless we demand them, keeping up pressure on the College and holding them to account.

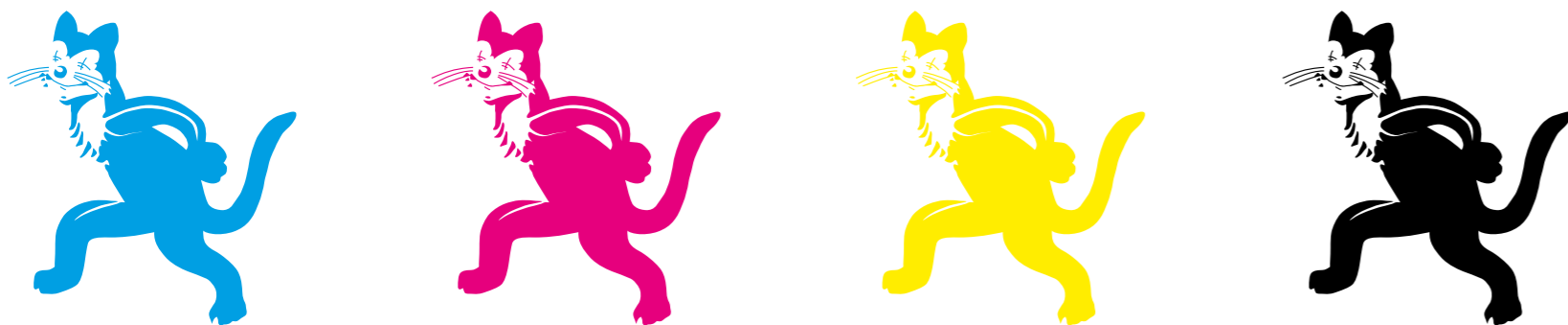
Changing the world needs to start somewhere. Please recycle this *Felix*.



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NEWS

news.felix@imperial.ac.uk

Success for Imperial graduates in last week's local elections

NEWS

Joanna Wormald
Deputy Editor

Leo Cassarani and Sina Lari were both made councillors for the Labour Party in last week's elections.

Two Imperial graduates have taken seats on London councils in this month's local elections.

Sina Lari and Leo Cassarani – both of whom stood as Labour Party candidates – won seats in the wards of Golborne and Swiss Cottage respectively.

Lari, a recent biology graduate and vice-chair of the Kensington Labour Party, joins Emma Dent Coad and Pat Mason. The three Labour councillors took more than 75% of the vote share.

"I was very humbled to have won with over 75% of the vote," Lari said. "The position comes with

great responsibility and it is my duty to work closely with residents over the next four years to achieve change."

In addition to his involvement with the Kensington Labour Party, Lari sits on the executive committee of campaign group Scientists for Labour, and is a grassroots campaigner in the community.

"Sina Lari also sits on the executive committee of campaign group Scientists for Labour"

Following the Grenfell Tower fire last June, which saw 71 residents dead and many more forced to leave their homes, housing and regeneration have been at the forefront of campaigns in Kensington.

Lari said: "One of my biggest priorities will be to stop the ongoing social cleansing in Kensington. Residents are being priced out of their homes and the Borough in favour of luxury development; no graduate can afford to live here anymore."

Science and education are also high on Lari's list. "I have been involved in the campaign to save Kensington and Chelsea College from plans to have it shut down and turned into flats.

"I want to promote Kensington and Chelsea as a 'science borough' in the wake of Brexit. I helped draft a successful motion this year to set up a European Citizens' Advisory Service to help those affected by the ongoing shambolic Brexit saga," he added.

In Swiss Cottage, computing graduate Cassarani was elected alongside fellow Labour candidates Nayra Bello O'Shanahan and Simon Pearson. Combined, the trio won almost half of the votes in the ward. Their success



Cassarani on the campaign trail earlier this month // Leo Cassarani

marks the end of a 20 year stretch in which Swiss Cottage had no Labour councillors.

Speaking to the *Camden New Journal*, Cassarani said: "The residents of Swiss Cottage are sick of being taken for granted by the Tories. They've had the same local councillors for almost 20 years and I think they wanted a change."

Cassarani chalks the success of the Camden Labour Party up to its "incredible grassroots campaign".

"Our top priority was to speak to as many local residents as possible; by the end of our campaign 80% of local residents had spoken to a Labour canvasser," Cassarani told *Felix*. "The national Labour Party said we had the highest contact rate in the country."

He added: "We were hugely outspent by our opponents [the Conservatives] who flooded the area with leaflets, direct mailings, attack letters, manifestos...but we continued to focus on local

residents and the issues that worried them.

"The best part was the number of residents who told us they voted Labour for the first time because they had seen the difference a grassroots, community-based approach can make in local government."

"Leo Cassarani chalks the success of the Camden Labour Party to an 'incredible grassroots campaign'"

Labour also did well in the wards of Hammersmith and Fulham – a borough which, like Kensington and Chelsea, counts a significant number of Imperial students as constituents.

Labour gained nine seats from the Conservatives; Labour now has 35 councillors in Hammersmith and Fulham compared to eleven for the Conservatives.

An analysis before last year's general election for *London Student* suggests turnout among Imperial students can swing results in Labour's favour, particularly in marginal seats. It is unclear if this was a factor in the local elections, where turnout is typically lower than that of general elections. Many students eligible to vote do not do so in their university constituency, choosing either to vote in their home constituency or not at all.

Elsewhere in the country Labour emerged as the single largest party, picking up 79 seats to take its total to 2,350. The Conservatives have 1,332 seats – a loss of 35. The Liberal Democrats and Green Party both gained seats while the UKIP vote all but collapsed, leaving it with three seats.



Sina Lari with Emma Dent Coad in Kensington // Sina Lari

98% believe Imperial should be doing more for the environment

NEWS

Cont. from front

the bottom decile for university sustainability. Earlier this academic year, Imperial came 141st in the People and Planet ethical league tables – the lowest scoring university of the Russell Group.

The report said Imperial's ranking in the People and Planet league tables was due to both "Imperial's meagre reporting... of its good practices", and "inadequacies in leadership, policies, targets, practices, and community engagement." They concluded these benchmarks raised "serious concerns that we are lagging behind our peers".

Imperial has also faced difficulties in reducing harmful emissions: the 2015 University Carbon Progress Report ranked Imperial 107th out of 126 institutions, after it had reduced its carbon emissions by only 9% in the previous ten years.

Imperial has also increased their overall greenhouse gas emissions since 2009; they will need to reduce them by 60% in the future to adhere to government targets. College Energy use has increased by 15% per capita over the last four years.

Out of the 850 staff, students, friends, and alumni who filled out the survey, 91% were dissatisfied with Imperial's national performance.

One member of professional staff who responded said this "poor engagement" with sustainability "carries a reputational risk that could undermine our academic work on sustainability and climate change."

Communication and Leadership

One of the main areas for improvement identified by the survey was communication and leadership: only 15% of students could identify a sustainability leader, 73% had a poor understanding of what Imperial does for sustainability, and 82% had a poor understanding of the College's current performance on sustainability.

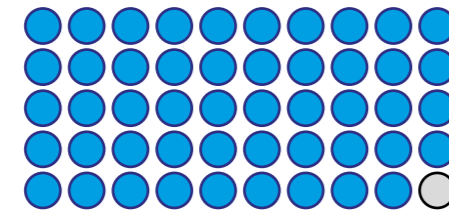
The report said the College's approach to sustainability was "neither clear nor very visible," and "reporting of relevant data and achievement is poor, or non-existent." While Imperial's Strategy includes action on sustainability, it is "referred to only obliquely... with a

"The report said the College's approach to sustainability was 'neither clear nor very visible'"

focus mainly on research outputs and innovation."

In comparison, universities such as the London School of Economics (LSE), UCL, and King's College London (KCL) have made sustainability more central to their strategies. Greening Imperial said this could lead to "[erosion of] our competitive position and our aspiration to be the leading London university."

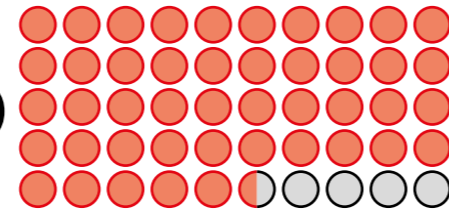
One of the key recommendations the report has



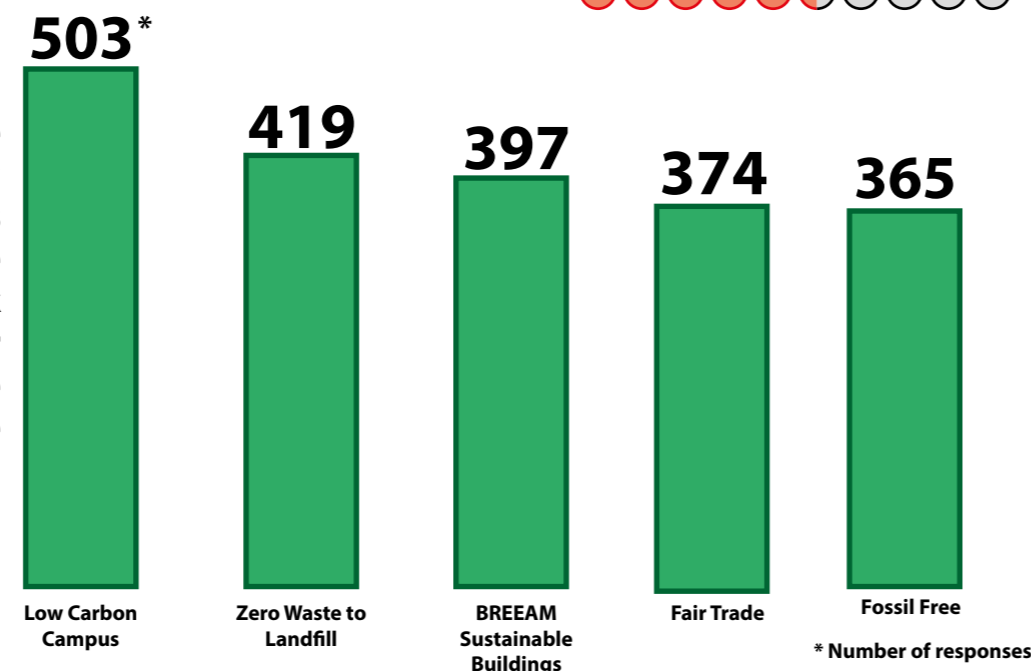
98% Thought Imperial should be doing more for sustainability and action on climate change

Were dissatisfied with Imperial's standings compared to other universities

91%



Which of the following statuses should the College seek to maintain or attain over the next five years?



put forward is the creation of the position of Assistant Provost (Sustainability) – a new member of senior management who would "work with all arms of the College" to "drive the transformation of our performance and delivery in this area." The Assistant Provost (Sustainability) would report to the Provost, and would be supported by a Sustainability Leadership Group.

Community

As well as involvement from senior leadership, the report calls for Imperial to do more to foster a community around the goal of sustainability: currently sustainability comes under the remit of

the Health, Safety, and Environment Committee. Students, academic staff, and alumni are not included within the current model.

The report says this has meant the College community feels "disenfranchised and powerless around sustainability", with students and staff "currently feel[ing] inhibited, or at least not encouraged."

Greening Imperial recommend the creation of 'Sustainability Champions' – identifiable staff and students responsible for promoting sustainability. Currently Imperial has one such individual, compared to around 100 at UCL and 150 at Cambridge. Those behind Greening Imperial seemed

confident such a community could be developed – 65% of respondents to their survey said they would like to be involved in future initiatives.

This sense of isolation was supported by some of the comments received through the Greening Imperial Survey. One member of professional staff said they had been "shocked" at "what I perceived to be a total lack of consideration for sustainability and action on climate change. I quickly learned not to question the processes in place or voice my thoughts on the matter – my perception has sadly not changed."

An academic member of staff added they were "ashamed to work at a university that's supposed

to pioneer sustainability but are this bad at practicing what they preach."

Students have also highlighted their dissatisfaction with Imperial's relationship with sustainability: a number of student groups approached Greening Imperial with concerns over plastic disposable cutlery and single-use coffee cups

Research & Education

The lack of a concerted drive towards sustainability on campus is surprising when considering the amount of sustainability-related research Imperial carries out. The university receives around £100 million each year in funding for sustainability-related research,

representing about a third of the total funding from research grants and contracts. The main areas of such funding are found in the Departments of Physics, Medicine, and Life Sciences. There was also a general consensus that the research being carried out was of excellent quality.

However, the report highlighted there was "greater scope for sustainable and impactful interdisciplinary research", and the College should look towards "implementation [of research outputs] where possible on campus."

The report also called for greater integration of sustainability into the curriculum, saying students at Imperial could "progress through their degree without ever having to critically think about their actions on the environment, society, or the economy." While there are a number of postgraduate

courses centred around sustainability, the exposure undergraduate students have to such content can be limited; last year's Global Challenge Horizons module – an optional module available to undergraduate students – was cancelled due to lack of demand.

Divestment

One area the report highlighted was Imperial's investments in fossil fuels. Around half of those asked about what initiatives the College should support said the university should go Fossil Free, with over 40 raising the issue in further comments.

The report highlighted the work that had been done by the student pressure group Divest Imperial, who met with Imperial senior management earlier this year. The report said the College "doesn't think it's immoral to receive funds" from fossil fuel

companies, and believed investment in fossil fuels was good for the environment.

The Greening Imperial report recommends the College investigate how the endowment fund can be invested in businesses that are environmentally sustainable. Professor Jo Haigh, Co-Director of the Grantham Institute and Greening Imperial co-author, told: "As a first step we would like to see college introduce a Responsible Investment Policy in order to assess the environmental and ethical credentials of its current and future investments. We hope that Greening Imperial will participate in and inform the divestment debate to help Imperial take a leadership position on this topic."

Earlier this academic year, an investigation from *Felix* found Imperial had nearly £9 million invested in fossil fuel companies

through their endowment fund. The College also had £3.5 million invested in tobacco and £3.1 million invested in the arms industry. In the People and Planet league tables, the College had a rating of zero for ethical investment.

Over the past couple of years, the number of universities divesting from fossil fuels has risen dramatically. It now stands at over sixty institutions, including King's College London, Edinburgh, and the University of St. Andrews.

Next Steps

The scoping study presented to the Provost's Board was met with an "overwhelmingly positive" response, according to Professor Maitland, but the report "still needs to be approved as part of the planning round process over the summer."

A representative of

Imperial College Union said they welcomed the report, and told *Felix*: "With the backing of the Provost's Board and the involvement of the past two Deputy Presidents (Finance & Services), Rachel Blythe and Matthew Blackett, as co-authors, we are confident that this report will lead to the change which our members would like to see at Imperial. We would also like to thank all of the students who responded to the survey earlier in the year. The results of this have contributed to shaping the outcomes of this report. We are looking forward to seeing the changes which College are going to make off the back of this report to improve the sustainability of all our campuses and operations for students, staff and the communities in which we operate"

Professor Haigh told *Felix*: "Reducing the environmental impact of college will help to reduce operating costs for utilities such as energy and water so Greening Imperial should make financial sense as well as being the right thing to do in terms of our environmental and ethical impact. It also has the potential to help create a more pleasant (greener) working environment, bringing people together from across college and promoting a stronger sense of community."

One concern for staff and students at Imperial

may be the cost of implementing the recommendations put forward in the three-year plan drawn up by Greening Imperial. The authors of the report argue that not investing in sustainability now will lead to an increase in costs in the near future, both in terms of government directives and expenditure on operations.

Professor Haigh told *Felix*: "Reducing the environmental impact of college will help to reduce operating costs for utilities such as energy and water so Greening Imperial should make financial sense as well as being the right thing to do in terms of our environmental and ethical impact. It also has the potential to help create a more pleasant (greener) working environment, bringing people together from across college and promoting a stronger sense of community."

One concern for staff and students at Imperial

London rated best city for international university students

NEWS

Fred Fyles
Editor-in-Chief

The QS rankings place London on top for educational opportunities, despite a high cost of living

London has been ranked the best city for university students, beating out Tokyo and Melbourne for the top spot.

This is the first year London has topped the rankings, which are organised by the higher education company QS. London came third in the



'Siri, find me a picture of London' // CC

rankings last year, being beaten by Montreal and Paris, which came first and second respectively.

Only two cities in the US are in the top 30 ranking, which is dominated by universities in Europe, Australia, and

Asia. This is a sharp contrast to the QS World University Rankings, in which American institutions occupy around 50% of the top rankings.

The annual report, which "showcases the best urban destinations for

international students", uses a range of indicators to generate their rankings, ranging from the number of ranked higher education institutions in the city, through to pollution levels and the number of graduates who stay on

after they finish in higher education.

While London scores highly on Student Mix, Student View, and Employer Activity, it is among the least affordable cities for students. A high cost of living and increasing rents make London a comparatively expensive city for students. The average rent for students at Imperial-owned properties stands at £175/week, and private halls aimed at students can cost up to £430/week.

While QS said "rent and living costs are significantly higher in London", they said it could be "worth every penny" due to the educational, cultural, and social opportunities. They described the city as a

"nerve-centre of global academia," citing UCL and Imperial, which rank seventh and eighth respectively in the QS World University Rankings. In total, 17 universities in London appear in the QS university rankings.

The QS rankings are designed for international students, looking at moving to London for university. According to the Higher Education Statistical Agency (HESA), 19% of students studying in this country are from outside the UK – nearly 450,000 as of last year. The most prevalent international non-EU group are Chinese students, who make up almost one third of non-EU students.

NEWS

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Students launch Sexual Health campaign at Imperial

NEWS

Albert Muljono

News Writer

The campaign aims to provide sexual health services and education to student at Imperial.

Two students in Imperial's Department of Public Health have started a Sexual Health campaign to provide sexual health services and education to Imperial students. The campaign started with the WE Innovate program, in which MSc Public Health students Harumi Quezada Yamamoto and Clara Greiner decided to focus on sexual health education and access, after noticing that the London boroughs where Imperial College has campuses

also have some of the highest STI rates in the city. A survey organised by the group found over 20% of respondents had not been tested for any major STIs.

The group has teamed up with two clinics in London, including the Jefferiss Wing in St. Mary's hospital, in order to provide both free STI check-ups and take-home testing kits to students. Yamamoto states they were able to set up these clinics because all Imperial students are entitled to NHS services. Additionally, the group has set up campaign stalls on the South Kensington and Charing Cross campuses in order to provide information and spark discussion on safe sex.

Yamamoto says that a barrier to STI testing for Imperial students is the absence of an accessible sexual health clinic on the campus. In order to get tested, students must first

book an appointment with the Imperial Health Clinic, and then, after attending that appointment, make another appointment with a sexual health clinic for testing – a lengthy process, with bookings sometimes taking weeks. Most students do not have the time or patience to wait that long, and therefore ignore STI testing or sexual health education.

The group also says there is still stigma against talks on sexual health at the university. Out of the 114 students who took the group's survey on sexual health, 33% said they would not get tested for STI's if there were testing services available on campus, and 50% said they are against or unsure about making their partner get tested.

Much of this stigma comes from cultural and family taboos of sex, and the campaign wants to normalize talk of sexual health. Yamamoto told



Students providing advice and supplies in SAF this week // Felix

Felix that thinking about sexual health and safe sex does not involve just one person, but also those with whom they are sexually active, and it is therefore imperative to spread awareness as much as they can around the school.

The group hopes this campaign is just the start of empowering these types

of discussions at Imperial; Yamamoto told Felix she hopes “generations to come continue pushing for it to be something... in Imperial's agenda for students.”

The campaign will take place from 11:00 to 16:00 on Wednesday 23 May in rooms G23 and G24 in the Sir Alexander Fleming building, and on

Wednesday 16 May in interview rooms A & B in the Reynolds Building on the Charing Cross campus. STI testing is done on each of these days, and online booking through their Facebook group is required. Additionally, St. Mary's Hospital's Jefferiss Wing will provide take-home testing kits for students throughout May.

Imperial Secrets Facebook page shut down

NEWS

Frank Leggett

News Writer

The page, where students could share anonymous posts, was taken down last week.

Imperial secrets, a popular Facebook page on which students could share secrets anonymously, was shut down last week.

The page, which had several thousand followers, has been under scrutiny for a large part of its existence: in 2015 the page was used to promote

a “Jihad themed” orgy resulting in the names of four students – who had bought tickets to the event – to be viewable to all on the Imperial Secrets page.

A meeting of Imperial College Union's Community and Welfare Board earlier this year had voiced concerns about the material posted and how it was monitored. Racist material and sexist comments had been noted by the Board. Imperial College Union welfare officers and the admins of the page were to meet to discuss these concerns.

Memperial, the meme page of Imperial College London told Felix: "It's obviously quite sad that Secrets had shut down. Memperial aims to

provide humour to students, but Secrets gave everyone a voice. We're not sure about the exact circumstances that led to its demise, but we do know that it will be sorely missed."

Paul Balaji, a final year

“A meeting of the Union's Community and Welfare Board had raised concerns over the page”

computing student, described Imperial Secrets as “like a forum”: “Anyone could submit, and if it was not outrageously offensive, it would get posted. Of course it's had its fair share of controversy: there'd be highly political debates or people bringing out freedom of speech when something offensive gets taken down. This was all part of its charm, in my opinion. It gave more people the chance to weigh in and provide their opinions, contribute to discussions, help others and sometimes just bring some banter to the tough life at Imperial. I hope somebody decides to bring back Secrets as a new page, it's honestly a great way to take breaks

from revision. Oh well, at least we still have Memperial?”

“One student said the page brought 'banter to the tough life at Imperial'. A new page has already been set up”

In the wake of the page being ‘zucked’ (a term used when pages are shut down by Facebook),

clone pages have popped up, such as Imperial Secr3ts which has nearly 200 followers. The main precursor of Imperial Secrets, Imperial College secrets – which has more than 6,500 followers – is still up.

Authorities across the world are concerned about such secret pages, as reports of sexual harassment, assault, or suicidal tendencies cannot be followed due to the anonymous nature of these pages. Two high school student pages in Montana, USA have been shut down following demands by the police based on evidence of harassment and sexual-ly explicit content.

POLITICS

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Bahá'í : a belief system suited to our troubled times?

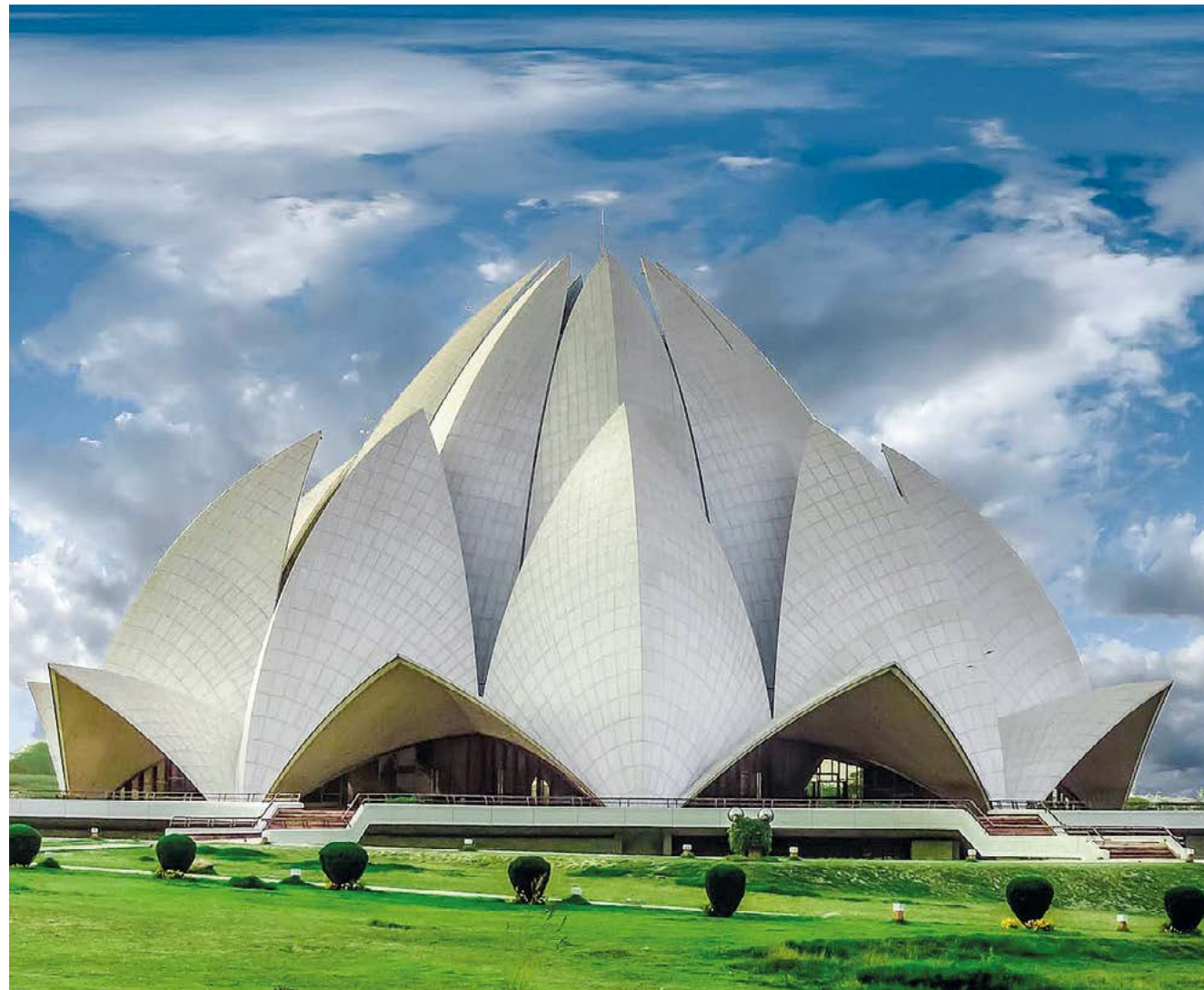
Amid a resurgence of nationalism and protectionism, we could learn some lessons from Bahá'í.

POLITICS

Divyen Vanniasegaram
Politics Editor

The world has seen a resurgence of nationalism, fascism, and protectionism. These pose an existential threat to the world as we know it. Liberal democracies spreading wealth and freedom via free market capitalism have seen their support checked by the likes of Trump, Brexit and most recently the elections in Italy where the right and far-right emerged as the largest parties. The question is why is this happening? Large swathes of the Western world have prospered through the 20th and into the 21st century with unparalleled growth in living standards and prosperity and yet there are large swathes of these populations, perhaps even majorities, who have rebelled against this system. They have flocked to groups who claim they will protect the nation and protect them from the aliens from foreign lands. They are voting for those who claim they will put the indigenous first and return the nation to a bygone era of pride and glory. A stupor of nostalgia has entranced the masses. The centreground, especially the centre-left has struggled to come to terms with these developments and understand the concerns of the electorate, let alone figure out how to meet these.

If the old model is broken beyond repair then what can replace it



Serenity...//CC

to provide a sustainable and fruitful future? One option lies within the Bahá'í faith.

The Bahá'í faith was founded by Bahá'u'lláh roughly 150 years ago, making it one of the youngest religions in the world. A key theme that runs through the faith is unity and oneness. There is a oneness to humanity and to the world. As someone who does not belong to the Bahá'í faith reflecting on these notions in detail and reading further into the faith has revealed a potentially different way of viewing the world. This idea of oneness helps to identify the problems

already laid out in a new light. The world has become quite simply too materialistic: the yearning to acquire wealth because it is inherently a good thing. Those who believe in laissez faire economics would argue that the desire for wealth has been an entirely good thing, driving competition and innovation. This has ultimately been to the benefit of all even if a minority became disproportionately rich. However, the Bahá'í faith believe this as an ultimate goal does not bring an individual true happiness and as humanity can be seen through a lens of oneness

that all economic actions have an intrinsic moral nature that impact of on others and the environment around us. Therefore, wealth itself is not to be frowned upon and criticised but the way this wealth is used must be to the betterment of oneself and of others. Those less well-off must also ensure that they do what they can to take the burdens of others in the same way that the rich are compelled to do the same. The issue arises as to how to bring this about. The system rewards wealth collection so there must be a wholesale change to the global economic system

which will take years and concerted effort or the onus falls onto individuals to act in a different way within the confines of the same system. The alternative is for the state to impose change from the top down mandate certain behaviours; this would be seen as an attack on the wealth creators of the economy who drive growth.

The issue of economic behaviour goes to the heart of human nature; are humans naturally self-serving units maximising their own wealth or is there a greater capacity to help each other? It's not just economics where

there has been increasing turmoil and revolt, but within politics itself too. Nations have regressed from being open to closed off with the number of border walls increasing dramatically over the last decade or so. This arguably stems from groups feeling left behind and pulling the brakes on globalisation. This regression appears to fly in the face of the oneness of humanity. Rather than people viewing themselves as citizens of the world, rather people are looking to nationhood to ground their identity in. This identity feeds of the distinctions we create between groups rather than melt them away. However, the Bahá'í faith can put this down to the parallel processes of integration and disintegration. In order for the new order to rise up the old must be broken down. The world appears to be becoming a nastier place filled with small, isolated nations headed by those who pull on the cult of personality to clasp onto power. While the processes of disintegration are plain to see, one must look closer to see how the processes of integration are taking hold in the form of the digitalisation of information allowing people to connect across the globe. Perhaps this system is what we are seeing at the moment, however; I am not convinced that this new world order will be the world of unity the Bahá'í faith hope to see anytime soon.

COMMENT

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The great Catalan paradox – why drawing borders is not a solution

As a response to last month's Felix article, Alan Perfect writes about how Catalans are attempting to embrace openness while drawing new borders at the same time.

COMMENT

Alan Perfect
Comment Editor

While I understand you're probably reading this as a creative form of procrastination from one of those endless sessions in the library, you probably still think that a professional commentator's opinion on the issue of Catalonia's independence is where you would like to go if you need a trustworthy source to inform your own confirmation biases. But bear with me. I genuinely think I have something to say to say on the issue, even if I'm trying to frame it as a response to Aida's piece two weeks ago, instead of as a long overdue article on a subject which the world outside of Spain doesn't really care about, and which people inside of Spain are more than tired of seeing in the headlines over and over.

People love to draw borders. Most people. We find refuge in establishing boundaries at all levels of human social interaction, from small families to large countries. And it's easy to understand why. If boundaries aren't present, clear, well-defined groups cease to exist. Some groups are more open than others: the only barrier to entry for the IC chess club, for the sake of an example, is being at least somewhat enthusiastic about chess, while the requirements to enter my local golf club are a bit more stringent: you must personally know



Isn't it great when football is used as a political tool? // Deviantart/Arafah

"People love to draw borders. If boundaries aren't present, clear, well-defined groups cease to exist"

a member and she has to recommend you, which basically means she's

judged whether you're similar to the rest of the members in a series of constructed social attributes. Even if you consider yourself an open person, you're still drawing boundaries with your friends, as you'll tend to call and invite the people you get on with —people who share a similar set of attributes or experiences with you, whatever that may be. And at a higher level of resolution, boundaries between commu-

nities take the form of a border between countries. However arbitrary they may seem, at least most of them tend to reflect a very old idea: that the experience of being French, for example, seems to reflect a different experience to that of being Swiss or German. The new globalised world offers a flipside to our traditional love for boundaries, manifested in the form of megacities like London, which embrace what I like to call radical

upsides of the existence of megacities' radical openness, there's a big problem that a boundary-loving person would point out. Cities like London lack boundaries and real borders, so their definition becomes blurry. There is no clear sense of community and a lack of definition of what this group is or what it is for. As a Londoner, you cease to become part of something and become an anonymous individual in a massive jungle. People become lonely, focus mostly on themselves, and end up not knowing the name of their next-door neighbour. And it's understandable. If the IC chess club suddenly had a massive influx of people to the point of a fifty-fold increase in their membership, but none of them wanted anything to do with chess, something similar would happen. Yes, the club would become very powerful in Union Council meetings, but a sense of what the club is for would dilute and disappear. And probably the members wouldn't get along as well.

It is important to understand boundaries and openness in order to understand the Great Catalan Paradox. Indeed, it's hard to think of anything more paradoxical than what the Catalans are trying to do, which is to embrace radical openness while drawing new borders at the same time. At a time when political lines divide along openness-closedness (Brexit or EU, protectionism or globalism, anti-immigration or pro-immigration) much

COMMENT

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more than along traditional left and right-wing politics, the Catalan issue of independence seeks to exist in a sort of quantum superposition of both.

Barcelona has always regarded itself, and been regarded by others, as the most open, liberal city in Spain. A sort of Spanish California. Its status as an economic powerhouse has turned it into a very cosmopolitan city. You can find an immense cultural exchange, an insanely rich artistic scene, and a huge variety of immigrants from differing religions and cultural backgrounds. And it aims to be more than that. At a time when EU bureaucrats dream of creating a European Silicon Valley, Barcelona is sometimes mentioned as one of the potential contenders. Contrast this openness with the Cas-

tilian, closed, and mostly uniform rest of Spain led by conservative Madrid, and an eventual conflict might emerge.

And here it is. The Great Paradox. Liberal Barcelona trying to approach more openness by dividing us even more than we are already. An attempt to try to distance itself from the closedness and slightly backwards image they have of Spain (which, to be honest, is a country that still considers bullfighting an elevated form of artistic expression) by practicing a liberal paradox: drawing more borders so they can be more open.

I, however, am no one to decide how to solve this inconsistency. This is up to them. How to embrace their own redefinition is not something I can answer. But I have

a solution to how they should answer these questions:

"A true liberal paradox: drawing more borders so they can be more open"

Firstly, they should be entitled to a three-round referendum. One now, one in three years and one in six years. By doing this, the Catalans will have an opportunity to show how deep their dividing line is, and whether it's worth it or not. Having three rounds will do two things: it will ensure that

the heat of the moment is taken away —making sure it's a vote about the future of the country and not just a protest vote on a single issue (I'm looking at you, Brexit)— and it will ensure that it's not an economic issue. The only thing that upset me about Aida's last week article was the argument that Catalans should have a vote because Madrid has been a terrible manager of the economy since the recession. This argument is just plainly absurd. Recessions happen all the time, and if countries broke up every time there was one, there wouldn't be a country left that was larger than the size of my backyard.

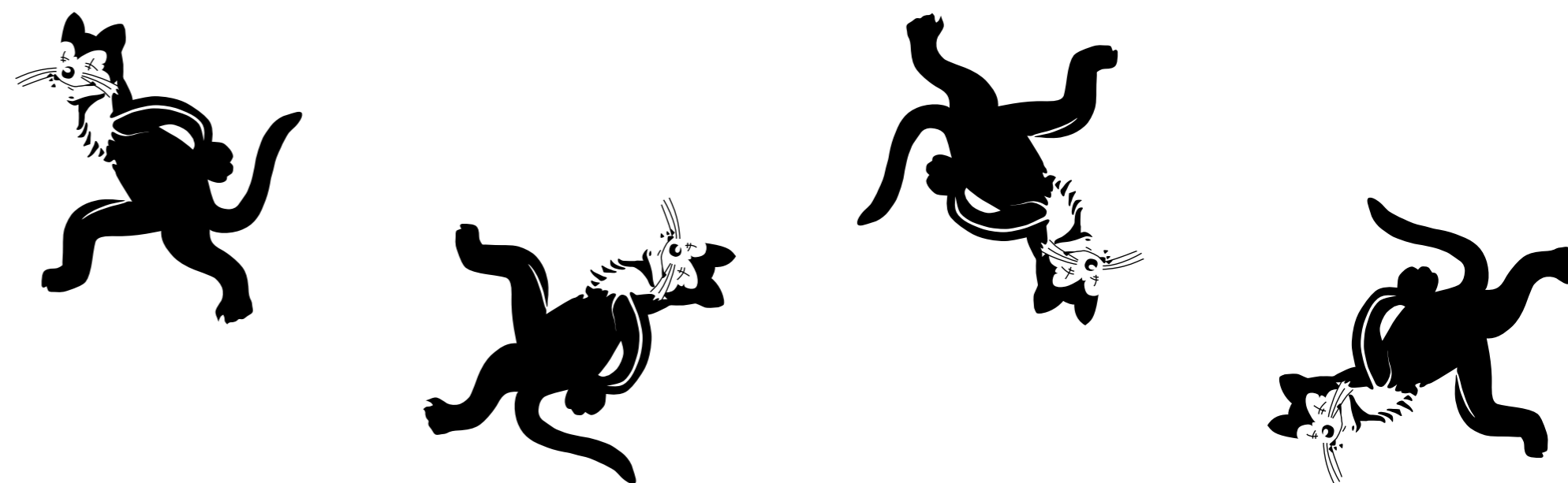
And secondly, the type of country Catalonia wants to be should be included in the referendum. It shouldn't just be

a simple "do you want to be an independent country" question, but a vote on a new Catalan constitution. Why? Because the broadness of political thinking that lies within the independentist movement is staggering. This is something that people tend to forget when they erroneously compare the Catalan issue with the Scottish issue. The Scottish independence movement is pretty much led by a single party, the SNP, which has a clear social-democratic agenda and clear views on most policies. Contrast this to the coalition and supporting parties that put Puigdemont into power. It ranges from the bourgeoisie conservative PDeCAT all the way to the anarchists from the CUP. Can anyone even pretend to predict what kind of

country would emerge out of that? Clearly not. The constitution must thus be written before the vote is taken.

I do have to say, though, that although I'm not a huge fan of the independence movement, I have a deep respect for a politician willing to go to jail for his ideas, such as Puigdemont and other Catalan leaders. I would never even dream of a character like that coming out of the Oxbridge career politicians that run the UK or a Clinton-like figure in the US. It shows that, at least in some contexts, idealists can still gain power, in contrast with the money and large corporation power dynamics that engulf politicians these days.

Want to be on the *Felix* team next year?



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COMMENT

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Breaking down the two cultures: why Imperial needs to embrace the arts

Albert Einstein once said 'All arts and sciences are branches of the same tree.' Sonny Coduri-Fulfort asks: what tree is Imperial climbing?

COMMENT

Sonny Coduri-Fulfort

Comment Writer

Before I started at Imperial, I was bracing myself for something more than the regular anxieties expected with coming to a new University. I had heard a lot about what to anticipate: a deprecation of any subject which is not 'hard-core science', confrontation because someone enjoys taking part in activities different to the 'status quo', and constant mockery of medical students taking a 'year off' if they decided to intercalate in a non-scientific subject. I was preparing for a struggle with having to tell people what I chose to study for my intercalated degree: a BSc in Humanities, Philosophy and Law.

I am a medical student normally studying at the University of Edinburgh, but I wanted to take a year away from Medical Sciences and delve into the culture surrounding medicine – my choice of degree was perfect. Studying at Imperial seemed a fantastic experience, but it has brought another interesting element to my intercalated year: being at a predominantly science university. The contrast between Imperial and Edinburgh is massive: Edinburgh has students from all different disciplines, and – because the city is a lot smaller – it is easy for students to mix. Most

of my friends in Scotland do not study medicine, let alone any of the sciences. This leads to a mutual understanding of all subjects and an exposure to several different disciplines regardless of what you study. This is not what I have experienced at Imperial – people tend to stick within their cohort, and lack the influence of art students. Perhaps this is why I have observed a lot less acceptance of the arts by the student body.

“The arts provide scientists and engineers with the toolkit to work in a multi-disciplinary environment”

As a firm believer of how the arts can benefit health, I attended Aesop's Second Arts in Health Conference & Showcase last month. It was a fantastic day filled with important conversations, workshops, and impressive presentations by artistic groups working to benefit the health of others. The stand out presentations were those which implemented dance therapies, drama therapies, and music therapies to improve health. The message that resonated throughout the day was simple: the arts benefit



Aesop's Arts in Health Conference shows how science and art can work together// Tas Kyprianou

humans' well-being. This is especially salient in today's pressurised society, in which mental health issues are ubiquitous.

Although the conference was about the benefits art has to health, other scientific disciplines have a lot to gain too. Sculpture, for example, can allow people to improve dexterity and see objects from different perspectives. These are critical skills for engineers and medics. Scientific research can also benefit from the creativity art can bring: when research is explored through different paradigms, scientists approach problems in novel ways, which can bring superior results. Furthermore, several

artistic activities – such as exploring paintings, reading literature... the list is endless – help scientists understand ideas different to their own. In a world where those who study science will be working with people from all different disciplines, this is critically important. Science profits from the openness the arts can bring, but there are still people who don't think this, especially at Imperial.

I'm not writing this article to say Imperial doesn't encompass the arts. In fact, I would say the opposite: I was overwhelmed by the number of ways to get involved in the arts, and I have seen how the Imperial management and staff are very

some students decide not to engage with the arts? Is it the pressure of workload, or the social acceptance of taking part in extra-curricular activities? Or is it that the arts are not actually as accessible as I think? My opinion of the arts at Imperial is biased – I am doing the first arts-based course offered at Imperial, and thus I have greater exposure to what is offered. I am certain that my impression of Imperial is skewed: the friendships and networks I have formed are based in a shared appreciation of the arts, mostly from my intercalated degree. It would be interesting to hear the views of students on other courses.

Imperial is welcoming the arts to its scientific

studies, but some students are still not embracing this. What needs to happen at the College is even further integration of the arts into sciences: perhaps Imperial Horizons should become a requisite for every degree and not just a select few? Or there should be more mixing between Imperial students and those from other universities? Through means of therapy, creativity, and different ideas the arts bring, they are beneficial to our whole society. Institutions like Imperial should do all they can to ensure engage with the arts as well as their scientific study. Maybe, if this happens, the arts will stop getting criticism they can so undeservedly receive.

SCIENCE

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Looking after your mental health in exam season

SCIENCE

Sarah Wong

Science Writer

Exam season is perceived as dark and full of danger. It is highly likely that you are feeling anxious, and living off energy drinks in the library – or perhaps you are one of the post-docs that survived exams since you have the time to read this! Nevertheless, this article still concerns you: maybe it is someone you know, maybe you are the one who is suffering. Especially during this stressful period, it is important to learn about various types of mental illness, and what you can do to help.

For some mental illnesses, medications may not necessarily benefit the entire population. Additionally, defining what constitutes a disorder, or distinguishing health from

illness, can be difficult for psychiatric conditions, since there are no biomarkers such as blood sugar level for diabetes. Therefore, a better diagnostic and screening tool is desperately needed. Luckily, a simple test was recently revealed to be useful in predicting future outcomes.

This simple Self-Rated Mental Health (SRMH) test allows patients to rate their mental condition from ‘Excellent’ to ‘Poor’. In an article recently published in the *Journal of Health and Social Behaviour*, a research group showed SRMH to be a better predictor of future mental health status.

The advantage of SRMH is that the assessment is influenced by both social and cultural factors, as well as unobserved qualities of objective health, such as severity, the persistence of symptoms, and functional limitations (e.g. insomnia). SRMH can

also take life events into account, including separations, examinations, and unemployment – aspects undetected using clinical objective measurements.

Some scientists have concerns about the effectiveness of this method, as previous studies found 64% of the individuals reported their mental health as ‘good’, despite being diagnosed for a mental health condition. One potential explanation of such a phenomenon may be that patients are afraid of the judgement they can receive following a mental health diagnosis. Some may feel that poor mental health may be seen as weakness, thus they do not acknowledge the existence of such problems.

To ensure these effects are removed, researchers studied patients who were diagnosed with mental illness and followed them for a year. If patients are less likely to seek treatment due to social stigma, researchers should

observe an unchanged or deterioration of mental health in these ‘health optimists’.

Surprisingly, the opposite was observed. 30% of the optimists do better than their pessimistic counterpart – with or without treatment – after one year of follow up. These ‘health optimists’ were more likely to be Latino or African American, and less likely to be white or Caucasian. Marital status also affected how people rated themselves – married respondents generally have a better score than divorced patients. Furthermore, people with a higher level of education and better socioeconomic background tend to have a better self-rated score.

While it is unclear why these factors affect SRMH, but one thing is for sure: the usefulness of such a holistic approach to mental health evaluation can improve current mental health care. In



Take time out to look after yourself // CC

future, SRMH can be implemented in the clinic by asking patients how they feel about themselves. This can help to identify individuals who may benefit most from treatment, and enable tailored treatment for them.

To conclude, SRMH is ultimately based on how a person feels. We must understand that a mental illness is a disease of both the mind and the body. Asking one to ‘snap out of it’ is as helpful as asking a person with a fractured

leg to sprint. Those with a better SRMH may have a better sense of the meaning of life, or they are better at coping with their symptoms. Whatever the reason may be, support from family and friends is still one of the most important aspects of recovery for mental illness. Even if you are not convinced by the effectiveness of SRMH tests, showing you care about people around you can never be a bad thing!

EU moves to ban neonicotinoids

SCIENCE

Sam S Welch

Science Writer

On Friday 27th April, member states of the EU moved to support the ban of outdoor agricultural uses of three important neonicotinoid pesticides, due to concerns surrounding their harmful effects on bees and other pollinators. This decision followed the European Food Safety Authority’s (EFSA) publication in February of a set of key reports that concluded these pesticides presented an unacceptable risk to wild and honeybee

populations.

Neonicotinoids, or neonics, encompass a family of pesticides that were developed in the 1980s to be highly effective against insect pests, but harmless to other species, targeting unique elements of an insect’s nervous system. The three neonicotinoids affected by the new ban – imidacloprid, thiamethoxam and clothianidin – account for almost all of the neonicotinoid pesticides used in the UK. In 2016, all three were restricted from use on crops especially attractive to bees in 2013 – a decision that prompted legal action by Bayer and Syngenta, two leading global manufacturers of

neonics. However, April’s decision represents one of the most comprehensive and wide-ranging controls on the use of these pesticides.

Interest in the effects of neonicotinoids on pollinators, especially bees, developed in the mid-2000s and has more recently become the subject of a great deal of public attention and debate. One highly publicised study from 2017 found that honey sampled from around the world contained a cocktail of neonicotinoids. A second study examined neonic effects across Hungary, the UK, and Germany, and reported that bees were less able to survive

and produce new colonies when exposed to the pesticides at field-realistic doses. Despite mounting evidence of the harmful effects of neonics, the UK government remained in support of their use until the Secretary of State for the Environment, Michael Gove MP, also announced in late 2017 the intention of the UK government to back the proposed ban.

Bayer and Syngenta criticised the ban, describing it in their press releases as “a sad day for farmers” and “[taking] European farming in the wrong direction.” They stated that current scientific evidence indicated that neonics are far less harmful to bee populations

than other hazards such as the climate or disease, and criticised the EFSA report as “over-conservative.” The UK’s National Farmers Union made a similar statement, calling on the British government to work to mitigate the impacts of the ban to avoid damage to the UK farming industry.

Critics of the ban have also drawn attention to a range of potential challenges posed by the ban – from the obvious potential for impacts on crop yields, to suggestions that the loss of the relatively selective neonicotinoids will force farmers to resort to older, less discriminate pesticides. Syngenta have further criticised the

decision as being based on unapproved guidance material, while Bayer suggested their ongoing legal action against the EU’s 2013 partial ban should have forestalled further action.

However, environmental groups have lauded the ban, with Buglife (The Invertebrate Conservation Trust) calling it a “red letter day for the continent’s pollinators.” However, they also noted that neonic residues in the earth and water may continue to harm pollinators for years to come, due in part to the use of neonics in pet flea treatments, which are not covered by the ban!

SCIENCE

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Happening today –100 years of Feynman

Born a century ago today, Richard Feynman was one of the most brilliant physicists of his generation. Science Writer Sanziana Foia explains how his brilliance stems from a non-conformist spirit and a playful attitude.

SCIENCE

Sanziana Foia
Science Writer

Richard Feynman, born on the 11th of May 1918 in New York, is one of the greatest physicists and science communicators of all times. He is best known for his work in the field of quantum electrodynamics and for his ingenious way of representing complex mathematics through simplified diagrams. However, his contribution to science is more than a series of discoveries. It is about the human – or more specifically, how the fears, the joys, and the ambitions of the human led to those breakthroughs. Can one mind change society? Can the genius, the principles, and the choices of a single person all converge to lead to great discoveries and

giant scientific progress?

In the summer of 1945, a young man was watching through a truck’s windshield something no one else dared to view with the naked eye. Only he saw the blinding light and the deadly cloud rising from what was the first atomic bomb in history. However, in the shadow of his beloved wife’s recent death, the joy of success was suddenly followed by disturbance. The race he had embarked to save his country had a side he did not contemplate before, but that eventually grew too prominent to overlook – Hiroshima and Nagasaki, two names that became synonymous with ‘destruction’ in the young scientist’s vocabulary. In the aftermath of the genocide he realised he contributed to, Feynman made himself a life-changing promise: he vowed he would never again use science to provide

humanity with such tools, rather he would only pursue it for a more selfish reason – for the fun of it. This promise, however, was going to change more than one man – it was going to change mankind.

Deciding what is right

Richard Feynman was born in New York City, growing up through the Great Depression. His father worked in a company that manufactured uniforms for the military, which made him develop a strong distrust of authority. He thought humans should only be admired for what they “especially did” and not because of their “name and position – their uniform”. As Feynman later stated: together with curiosity, disrespect was the most important thing his father taught him. It allowed him to place himself and his thinking

above social norms and hierarchies, turning him into a nonconformist.

“As Feynman said: along with curiosity, disrespect was the most important thing his father taught him”

As a successful MIT graduate and remarkable Princeton PhD student, he was recruited to join the Manhattan Project at a secret laboratory in Los Alamos. The US feared Germany would be the first to invent the atomic bomb and that they would win World War II to become a dominant power. This was a defeat the US could not afford, so the project was put in place, taking on the brightest physicists of the time. Feynman strongly felt it was part of his duty as a citizen, so accepted the job, and was integral in helping the team speed up their calculations.

America did win the atomic bomb race and – with that – the war. But the fact that he contributed to the deaths of so many individuals deeply disturbed Feynman – the whole race had not been worthwhile. Leaving for Cornell University to become a professor in the Physics department – and still shaken by the events of the summer – he developed anxiety about doing anything important that

could eventually turn into something destructive. However, he recalled he used to enjoy physics, and because he “used to play with it, it was never very important”. This decision of only approaching science with ludicrous curiosity, and solely for personal entertainment, made him even more of a nonconformist in the world of science, and shaped his style of enquiry.

Nonconformity fuels creativity

Individuals with an independent concept of themselves are stimulated by standing out and being seen as separate from others. Insensitive to isolation, they place little value on belonging to a group, and so renounce all the constraints that prevent them from thinking by their own rules within an environment that demands conformity. Exploring unusual or controversial ideas, which pose a high risk of being rejected or not being understood by the scientific community, led to some of the most creative solutions and truly, some of the world’s greatest discoveries. This was also the case with Albert Einstein, who revolutionised physics through his theory of general relativity, first proposed to an incredulous public. Another example is Oswald Avery, who was the first to state that, contrary to the general scientific opinion, genetic material was represented by DNA and not proteins.

Feynman was a non-conformist as “he did not need the external validation of having everybody respecting him all the

time”. His manner of disregarding the opinion of those around him, which was primarily instilled by his father, enabled him to assert his ideas in entourage that were likely to dismiss them. It is this attitude that allowed him, for instance, to become one of the most valued debate partners for Niels Bohr. As Feynman said, once he was made to talk about physics, he would forget about all social subtleties. That is why he pointed out any flaws in the thinking of Bohr, making him very appreciated, though not liked, by the great physicist.

But most important for Feynman was – as he had promised himself – to play, guided by what was “interesting, fun and right to do”. He took a sabbatical year to study viruses and ants, a decision fuelled purely by his refusal to constrain his passions. He also took drawing classes, much to his colleagues’ discontentment, who thought he was “wasting his time” and gift for Physics. When the time came to be nominated for a Nobel Prize, he scorned it, saying he did not need any honours. “The pleasure of finding the thing out, the kick in the discovery, and the observation that other people use it” was the only prize he needed. This playful curiosity, coupled with anti-authoritarian values, projected over his style of enquiry. His unconventional mode of approaching problems excited his creativity, which meant he could arrive to solutions in an unprecedented manner



Feynman in the centre, at Los Alamos // Wikimedia

SCIENCE

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Sometimes it is important just to play

Feynman’s unorthodox way of thinking stepped in when physics was confronting with a great crisis. Classical theories were beginning to fail at explaining or predicting all phenomena in the universe, as a new field was emerging: Quantum Electro-Dynamics (QED). This area of physics describes the interaction of light with charged elementary particles. By explaining how these interactions work, QED thoroughly explains electromagnetism, one of the fundamental forces of nature and of the universe. As electromagnetism underlies how atoms come together or break apart to form molecules, it explains chemistry. And, as living organisms are the result of a myriad of complex chemical reactions, electromagnetism is also at the base of all biological processes.

Without a coherent QED theory, nature could not be entirely understood. But, there was a problem –

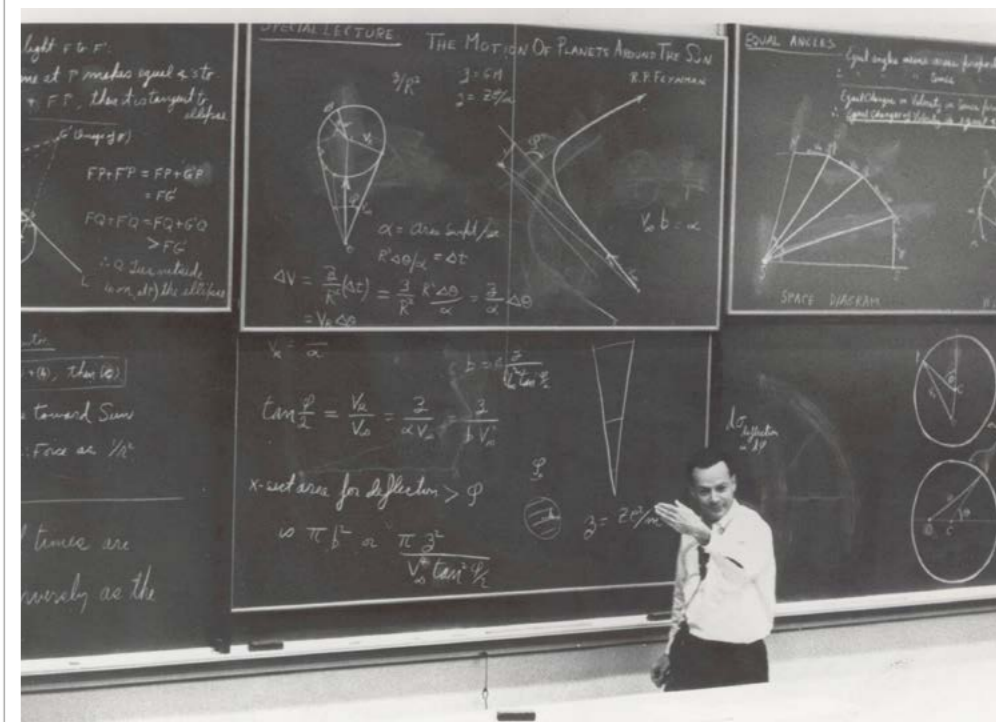
when the mathematics of QED were not becoming inhumanly complex, they appeared to be flawed. Some equations predicted results of infinity for measurements that yielded finite numerical values in the laboratory – a complete contradiction. It was Feynman who found the underlying cause of this problem, though his source of inspiration was rather unconventional.

A student tossed a plate up in Cornell’s cafeteria, and Feynman observed how the imprinted blue crest of the university was wobbling as the plate was spinning down. He “played around” with the equations of motion until they led to the similar problem of the electron’s spin in QED equations. Richard realised the equations resulting in infinity did not mean they were wrong, but that they needed to be approached from a different perspective. For a man who decided to explore physics for fun, and who did not care about how his ideas were going to be judged by fellow scientists, this

was the perfect task. Feynman’s strange method of depicting complex mathematical equations through diagrams meant that the complicated calculations required by QED could be side-stepped.

Though revolutionary, Feynman’s idea was unfamiliar and only understood by few at first. Although some great personalities of physics raised objections, they all soon began to acknowledge the powerful tool that Feynman had created, and which eventually brought him a Nobel prize. QED was finally a complete theory which made meaningful predictions about the world. The “most numerically precise theory invented” was working, and it was all down to Richard Feynman’s childish self, who gave no importance to the implications of his work – he just wanted to play.

Feynman’s work has found applications in numerous fields that either explain the world around us or affect our daily lives. From elucidating the evolution of galaxies to



Richard Feynman approached physics in his unique style // Wikimedia

telecommunications, from fundamental phenomena to daily life, everything has QED at work. Even our smartphones and computers might have been science fiction today if it was not for a young heartbroken scientist who decided not to ever do anything important, in the summer of 1945.

Do shifts within scientists affect humanity? Nonconformity, coupled with an individual concept of self and the mind of a genius lead to spikes in creativity. Creative solutions are sometimes found by exploring realms that are novel, unusual, and often get rejected by the more conservative

thinkers. The choices scientists make, and the approaches they decide to take when tackling a problem, are reflected in how they find a solution. A problem solved, a small success for a single man, could become a scientific revolution for mankind.

Connect with conservation: Snake Fungal Disease

SCIENCE

Steve Allain
Science Writer

In recent years, we have seen a spike in the number of fungal diseases infecting wildlife, causing population declines. This includes the chytrid fungus in amphibians and white-nose syndrome in bats. Recently, a new fungus has been discovered in the US, which so far seems to exclusively infect snakes. Snake Fungal Disease (or SFD for short) can infect the eyes, nose, mouth, throat, and lungs,

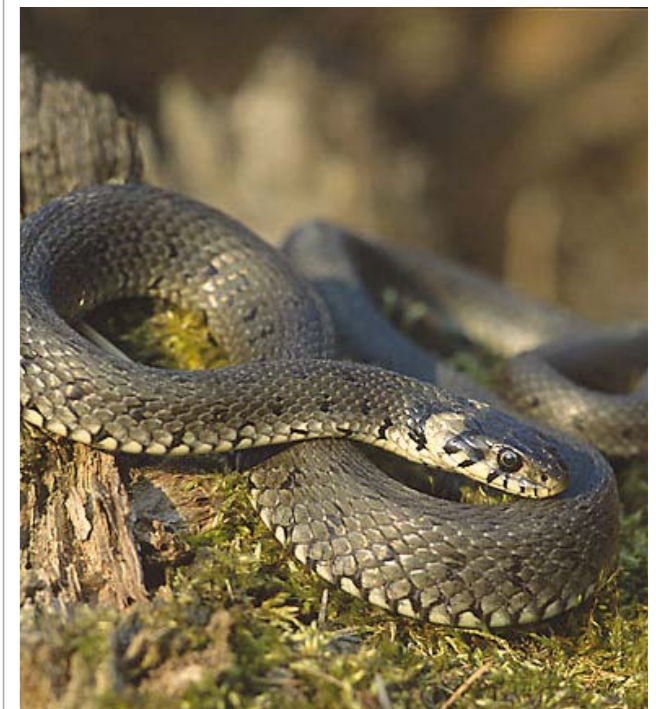
resulting in blindness and difficulty eating for the infected snakes. In extreme cases there is deformation, which causes disability in terms of feeding. Scientists believe SFD has been around for a lot longer than we have currently identified, but – for some unknown reason, such as a change in the environment – the fungus has become more virulent in recent years.

In the US, where the disease was first discovered, a number of snake species have suffered from localised population declines due to SFD. It may not sound important, but snakes play a vital role in the ecosystems

they inhabit, acting as a natural pest control and even helping to reduce the incidence of diseases like Lyme disease. With the loss of snakes in an environment, the levels of pest species are likely to rise, which may lead to increased damage to human property. Unfortunately, SFD is not just restricted to the US: it has recently been found in the UK and the Czech Republic. Here in the UK it affects our humble grass snake but the true effects of the disease on populations are not currently known – our snakes may be more resilient, or they may decline as in the US.

It is important to stress

that the diseases listed above currently only affect wildlife and not humans, and it is very unlikely they will pose a threat to us. Most of the time, the effects of SFD in infected snakes seems to be fairly mild, but in some cases, and for reasons which we do not yet fully understand – it can be extremely dangerous. There is still a lot we need to learn about in terms of the mechanisms of spread and infection of SFD. Due to its relatively recent discovery, there are so many aspects still to learn, but hopefully we will, one day, be able to prevent declines like those seen in the US.



Grass snakes are potentially under threat from Snake Fungal Disease // Wikimedia

Felix reports: Wearable Technology Show 2018

An closer look at the future of wearables, reporting live from London's ExCeL.

TECH

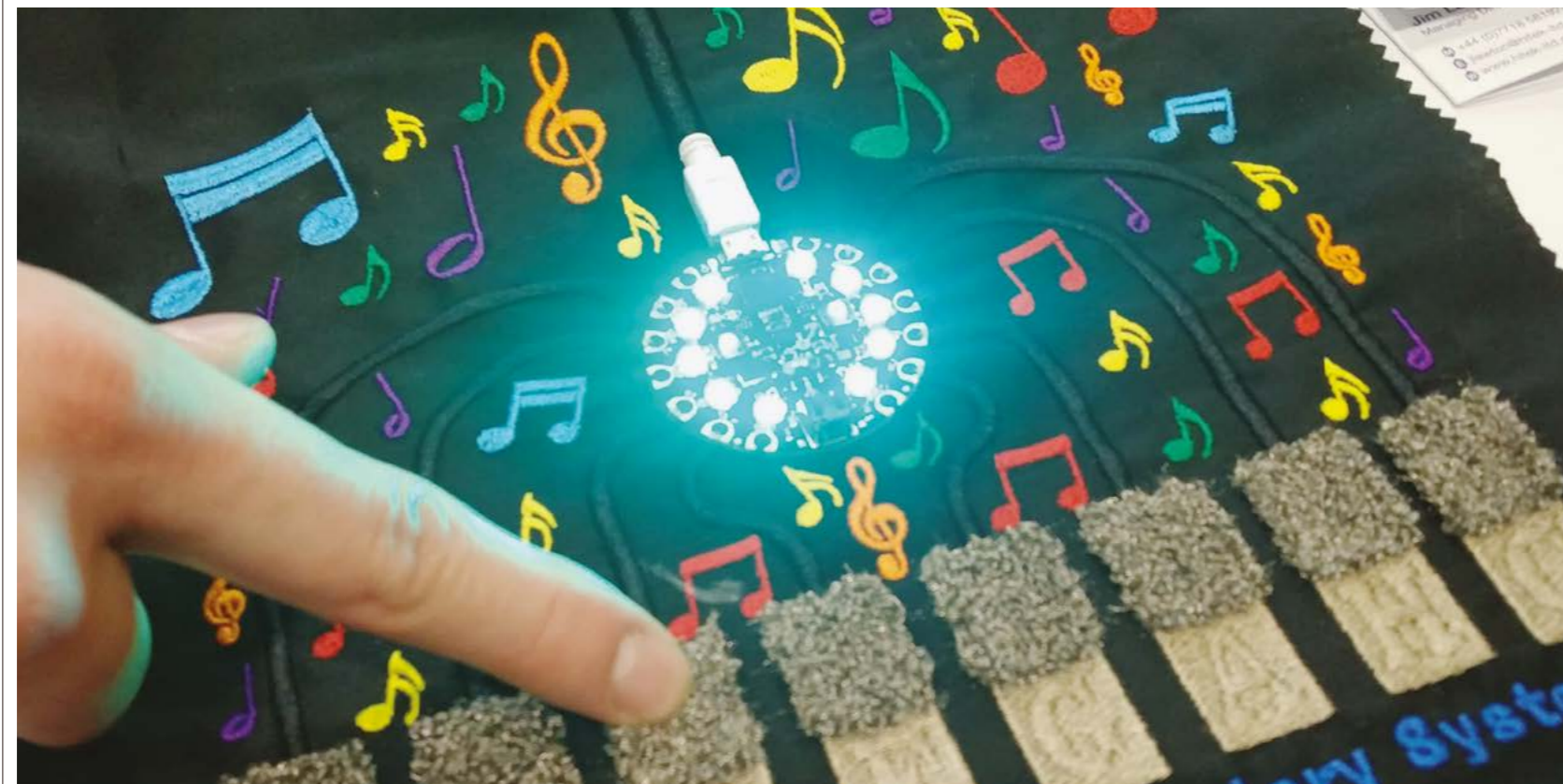
**Robert Jin and
Krithika Balaji**
Tech Writers

Virtual Reality – the shift from gaming to healthcare

Current therapy for psychological phenomena like anxiety, depression, and addiction involves going to a therapist on a regular basis (maybe once a week) and talking with them about your progress. They would suggest treatment goals and tips that could help manage your problem and you can try them out during the week. Based on your observations of your mental state, you would report back during your next appointment on how successful the tips were. It could also involve medication. While this process works for some people, it doesn't for others.

“Up till now, VR has been closely associated with video games”

One of the problems with this current approach is that the time duration between consecutive appointments give opportunities for the client to do nothing. Change is scary and fraught with uncertainty – it is hard to accept the need for therapy and harder to find the willpower to stick through the long process. In many cases, suggested strategies may prove to be



Gadgets you can wear every day were a hot topic – here is a keyboard made entirely out of fabric // Geek News Central

failures, further lowering one's willpower and lengthening the duration of the therapy.

Before, solutions to dealing with this problem would involve visiting more experienced therapists, and carefully analysing similar case studies from the therapist's behalf. In the Wearable Technology Show, 2018, bioengineers proposed another solution – virtual reality (VR).

Up until now, VR has been closely associated with video games. It did take years for this association to be made due to the limitations of the technology but, over the past few years, top technology companies like Facebook and HTC have invested billions of dollars in hardware and cemented this association. As the technology for VR has developed enough to produce games that engage gamers, scientists questioned why it couldn't be used to engage patients

in a similar manner and help them deal with their psychological issues. The idea behind VR therapy

“VR technology is programmed to make the patient feel exposed”

is that the VR technology is programmed to display situations that make the patient feel exposed and uncomfortable. These are situations that one normally wouldn't put themselves in but the fact that it's VR and not reality provides a metaphorical safety net for the patient.

A simple example of this in practice: an arachnophobe might be exposed to multiple spiders during a therapy session using VR technology. Using the

VR, the patient can try out different ways in which they can cope with their fear of spiders while being exposed to one.

While some might argue that the scenario faced with the VR technology is obviously fake and that the computer graphics aren't realistic enough to effectively simulate real life, scientists argue that this is actually the greatest strength of using VR technology for therapy. Research shows that the physiological symptoms experienced by the patient in response to the VR scenario are just like the ones experienced in response to the same scenario in real life. With respect to the photorealism of the VR scenario, research shows there is no correlation between photorealism and learning transfer. Also, photorealism is commercially very hard to achieve and takes a lot of time and money. Another drawback is that patients would mistrust

the technology when they know the scenario is fake but is starting to look real, which would hamper their progress in the therapy.

While the VR technology sounds like it is a good fit for helping cope with phobias, scientists don't want to stop there. Many believe that the future

“Using VR, the patient can try out different ways in which they can cope with their fear of spiders”

of VR technology lies in other aspects such as treatment for psychosis, depression, drug addiction and substance abuse. This isn't an exhaustive list – there are many

other interesting uses of it. VR technology offers therapists and psychologists ways to experiment with scenarios that can't otherwise be conducted in clinics, due to ethical, financial, or social limitations.

One way scientists propose to change a typical therapy meeting with VR is by introducing the concept of Immersive Therapy. This is a therapy intervention rigorously conducted over a day. The patient is exposed to the VR scenario for a certain period of time. Then, they discuss with the therapist about possible coping mechanisms and how successful they were during the time spent in VR. After a period of relaxation, the patient and the therapist reconvene to go onto the next step. It is hypothesized that this could reduce the relapse rate, as reflections on the success of coping mechanisms are done immediately, instead of after a couple of days.

While this article mainly discussed the use of VR technology in therapies, it also has a possible application in training doctors. VR could be used to teach clinical skills that are tool-based, allowing doctors to practice those skills even when they don't have physical access to those tools at that time.

The future of wearable technology: Smarter and smarter

Google Glass was criticized a lot for its privacy concerns, and smartwatches are only just starting to take off. So where is the world of wearable technology heading towards?

The Wearable Technology show at ExCeL London in March attempted to answer that question. With dozens of exhibitors demonstrating advancements in technology and products, ranging from a

playable electric keyboard embroidered into cloth and controlling a toy car with your brain waves, to training firefighting through VR goggles, some of this technology could find its way into your life sooner or later.

The three main categories exhibited were Augmented/Virtual

“So where is the world of wearable technology heading towards?”

Reality, smart sensors and conductive fabric/yarn.

Size and looks are the big concerns for current consumer wearables, but less so in a working environment, foregoing them

for greater comfort and technology. Augmented reality could show you the specific locations that need repairing, have someone look through your eyes and direct you, or display circuit boards and instruction manuals through a flippable display. These are the applications being developed by companies such as Trivision and Realwear, who already have a growing market in the professional industry. Meanwhile, Leicester Fire and Rescue Service is working on realistic training exercises through a set of VR goggles, gloves and backpack you can wear.

“Smart” products have been around for quite some time, and if you can think of a clothing/traditional wearable, there probably exists a “smart” version of it with a whole array of sensors and functions built in. And not just for you, but sensors on

pet and livestock collars can allow monitoring of their health and tracking activity, for your dog or a farmer checking on his cows. The vitals of whole football teams can be transmitted live for a coach to optimise training, and soon you may be able to pay contactless through a NFC chip built into...anything you want really. A watch, ring, or even fake fingernail.

“Soon you may be able to pay through an NFC chip built into... anything”

These all already exist but companies are developing the proper support and payment protocols

to enable and expand payment capability.

One particular wearable is a light sensor to monitor how light exposure is affecting your sleep and life. It was developed by LYS technologies, founded by Imperial graduate Christina Petersen. After raising over £50,000 on Kickstarter, it is now available for sale, and a newer version of its sensor was showcased at the show.

A good section of the show was dedicated to showcasing the technology and applications of conductive fabric/yarn. It would allow the placing of thin electronics and conduction through clothing and remove the need for external wires. From fun applications such as built-in lights in dresses and heated clothing, to flexible sensors in socks, sleeves, and shirts, there may be challenges to consider before mass-production,

such as washability and durability in use.

Unless you already own a few smart wearables, and enjoy being an early adopter of technology, most of these products fill niches that the usual

“Maybe your next shoes or jacket will come with sensors”

person won't need, and require some finesse before being able to be marketed commercially. But who knows, maybe your next pendant, shoes, or jacket will come with sensors and smart functions!



WTS 2018 marked a 5-year anniversary for this London-based technology showcase // Akuaroworld

Your Union events

Friday 11 May



THE UNION BAR

Beer & Boardgames

Every Monday
18:00 - 23:00
The Union Bar

Grab a boardgame and a beer from the bar and relax during exam season

Food and drink deal
Sharing platter and 2 drinks for £13
£11 with soft drinks

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Royal WEDDING celebration

PGI FRIDAY

FRIDAY 18 MAY
in the h-bar
16:00 - 01:00
FREE ENTRY

DJ 20:00-01:00
2 cocktails for £6

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REYNOLDS BAR

CLUB reynolds

Royal Wedding Celebration

Friday 18 May
19:00 - 02:00

Celebrate Harry and Meghan the way they would want you to!
With music, drinks and Student DJs in Reynolds Bar!

free entry

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Coming up in our bars



Super Quiz
Every Tuesday
20:00 - 22:00

Cocktail Night
Every Tuesday
18:00 - 23:00

iPOP
Friday 4 May
20:00 - 02:00

Find us on Facebook!
[fb.com/beitbars](https://www.facebook.com/beitbars)



Cocktail Club
Every Tuesday
19:30 - 23:00

Pub Quiz
Every Thursday
19:30 - 23:00

PGI Friday - Royal Wedding Edition
Friday 18 May
16:00 - 01:00

Find us on Facebook!
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Free Pool
Every Day
17:00-23:00

Pub Quiz
Every Tuesday
18:30-23:00

Sports Night
Every Wednesday
18:00 onwards

Cocktail Night
Every Friday
17:30 onwards

Club Reynolds - Royal Wedding Edition
Friday 18 May
19:00 - 02:00

Get exclusive offers, discounts and more on our bars' Facebook pages.

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The *Felix* Guide to the EUROVISION SONG CONTEST LISBON 2018

Hello, readers! For many of us, this is the most important time of the year – months of time and effort culminate in our final two-hour shot to prove our dedication to our art. Of course, I am talking about the Eurovision Song Contest! The iconic show, which has created massive artists such as ABBA and Céline Dion, is back for its 63rd year. The two semi-finals happened this week and we have our final twenty-six countries who will compete for the title this Saturday in the Atlice Arena in Lisbon, Portugal.

My name's Shervin and I'll be taking you through all the highlights of this year's competition including backstage gossip from the participants, all the controversies, what to look out for during the performances, and some sprinklings of my own take on things here and there.

For the less educated amongst you who are wondering what Eurovision is, here's some quick background: in 1956, the European Broadcasting Union (EBU) was looking for ways to rebuild war-torn Europe through 'light entertainment programmes'. The Eurovision Song Contest was conceived and the first competition was held in Lugano, Switzerland that year. It was won by Lys Assia (R.I.P.) from Switzerland with the song 'Refrain'. Since then, the contest has been held every year, and now up to 43 countries compete every year.

Some may say that Eurovision has lost its original meaning, and is all about politics. I disagree. The show is the biggest music event of the year, and unites many countries with many cultures through the common music of language. So make sure you tune in 8pm Saturday on BBC1 to watch all the whacky performances, exercise your professional music opinion to comment on everyone's vocals, and complain when Greece gives Cyprus 12 points. And, most importantly, to feel the love <3

EUROVISION

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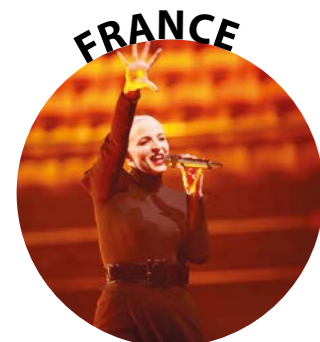
The Acts: Part I

**Tu Canción – Amaia y Alfred**

Spanish broadcaster RTE brought back to life Spanish reality show *Operación Triunfo*, a weird cross between *Big Brother* and *X Factor*. Out of it came Spanish power couple Amaia and Alfred. Their Spanish language song 'Tu Canción' ('Your Song') is your quintessential love song with (translated) lyrics like "feels like I'm dancing for the first time" and "everything is perfect when you're here". Alfred and Amaia (or, Almaia as they're called a lot) are just about as cute as a couple can get, and this translates onto the stage as well. Spanish Eurovision fans – who are amongst some of the most passionate – are sure this is going to win, but they said that about Pastora Soler, Ruth Lorenzo, Edurne, and Barei all in the last six years so I wouldn't hold your breath.

Non mi avete fatto niente – Eral Meta and Fabrizio Moro

This song has one of the deepest lyrics in the competition, responding to terrorist attacks around Europe over the last few years. 'Non mi avete fatto niente' means 'you haven't done anything to me' in Italian, and is the main message of this song. Eral and Fabrizio earned the right to represent Italy after winning the Sanremo Music Festival, although this win wasn't without its dramas. It transpires a song called 'Silenzio' was entered to the festival in 2016 which is extremely similar to this year's song, and the duo were temporarily disqualified from the festival until they were eventually allowed back in after they argued that it wasn't plagiarism, but self-referencing since the author of both songs were the same.

**Mercy – Madame Monsieur**

Émilie Satt and Jean-Karl Lucas, the wife and husband duo creatively called Madame Monsieur, are representing France this year with the hard hitting song 'Mercy'. The song starts with 'Je suis née ce matin, je m'appelle Mercy'; if you hear it and think this person is called 'thank you', you won't be the first. In fact, this song tells the story of a Libyan refugee child born at sea called Mercy, a story which made headlines in March last year, and the journey her mother made to give birth in a safe place. Francophones might gulp at the lyric 'Je suis tous ces enfants que la mer a pris' – I know I did. The end of the song culminates in a chant of 'merci merci' where Jean-Karl and Émilie will try get the audience to reach out and give love to the beat.

You Let Me Walk Alone – Michael Schulte

This is the first Eurovision song I've ever cried to on first listen. Michael pulls on the heartstrings in a massive way with a poignant song lamenting about his life after the death of his father in his teenage years. The song has a strong Ed Sheeran feel, and is similarly quality. The staging of this performance just elevates this already-beautiful song – Michael stands in front of a screen with images of fathers and their children as well as pictures relevant to the song being projected onto it. This song is growing in many people's estimations, and the emotional resonance it may have with many people is expected to propel it to perhaps Germany's best result since they won in 2010. I certainly hope this is the case.

**Storm – SuRie**

In a post Brexit world, we really need an epic song to win Eurovision. The BBC ran their 'Eurovision You Decide' national final again – the show that gave us classics like 'Flying the Flag' and Andrew Lloyd Webber – so hopes were high. Were these hopes matched? Maybe not. But should we be ashamed of our entry this year? No way. Susanna Marie Cork, or SuRie, brings us an uplifting pop ballad about how storms don't last forever, and while the song isn't creating storms itself, SuRie sells it to the camera and has a clever light show so we might not come last.

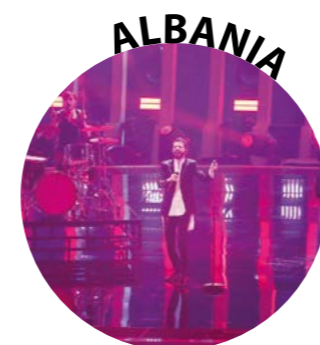
O Jardim – Cláudia Pascoal and Isaura

Portugal won the competition for the first time ever last year with the song 'Amar Pelos Dois', a pretty, atmospheric love song. This year, they've sent a song with a similar tone yet, for me, it's much better. 'O Jardim' means 'The Garden' in Portuguese and is about the death of Isaura's grandmother and how she will continue to tend her garden – something which will forever remind her of her grandmother. It's sang by Claudia Pascoal who is best known in Portugal for coming fifth in *The Voice Portugal*, and her distinctive voice gives this song an ethereal feeling that makes it stand out above other ballads in the competition. Portugal may not win again this year, but this an entry they can really be proud of.



EUROVISION

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**Mall – Eugent Bushpepa**

This was another unexpected qualifier from semi-final one, but one I was personally quite pleased with. Eugent Bushpepa is a fairly well known rock singer in Albania, having won the 'Best Male Singer' category twice in Albania's 'Top Fest' talent show. He's also supported some big names on tour before such as Deep Purple, both lead guitarists of Guns N' Roses and Overkill. His soft-rock song 'Mall' (that doesn't mean the same thing in Albanian as it does in English just to clarify...) is about the yearning you feel when you're away from the people you love, and is just a quality number. Eugent also nails some high notes that brings this song to a new level, and it is a deserving qualifier.

Lie to Me – Mikolas Joseph

If you were ever listening to Jason Derulo's 'Talk Dirty' and thought 'I would love to hear a pretty Czech boy sing a worse version of this song on the Eurovision stage' then you're in luck. I personally can't stand this song, but it's got a lot of support and has given Czech their second qualification in history. It hasn't been plain sailing, – following an attempted back flip in the first rehearsals, Mikolas landed himself in hospital. He got back on his feet after a few days and could potentially do well on Saturday. Listen to some of the... inspired lyrics in the song: "plenty motherfuckers wanna eat my spaghetti".

**When We're Old – Ieva Zatzumsikate**

Now this song is just the epitome of cuteness. Ieva is just this little ball of sweetness singing about growing old with your one true love. Her performance is beautifully simple, just her on stage with a flowing pink gown and a few subtle graphics showing people with different types of love. Right at the end of the song, she walks onto one of the small bridges coming off from the stage and delivers the final lines "(in Lithuanian) Right from our very first kiss I knew it'd end up like this. (In English) I'm not afraid to grow old if I have your hand to hold" just as her husband walks by her side and holds her hand **start crying now**.

Toy – Netta

There's been a craze surrounding Netta since her song dropped in March, and was firm favourite to win until a few days ago – she's slipped to third now. It's hard to describe 'Toy', really; I suppose it's an electro-pop song that makes good use of a live looper, but that doesn't really do the whole thing justice. Much of the craze stems from the chicken clucking that serves as the pre-chorus which, somehow, manages to work perfectly in the song. With lyrics like "Wonder Woman don't you ever forget, you're divine and he's about to regret", Netta's message is one of self-empowerment for anyone who's been mistreated.

**La Forza – Elina Nechayeva**

'La Forza' is an Italian language pop-opera piece delivered flawlessly by accomplished soprano Elina Nechayeva. I fell deeply in love with this song after watching the Estonian national final performance where Elina's out-of-this-world vocals and the projection light show happening on her dress that fills the entire stage make for a magical three-minute viewing experience. Her journey to Lisbon was thwarted by financial difficulties since Estonian broadcaster ERR couldn't afford the €65,000 to rent the projectors for the dress light show – however the dress drama came to an eventual end when sponsors were found.

Bones – Equinox

Bulgaria have been riding a wave of good results since they returned from a two-year hiatus in 2016, placing fourth that year then second last year, and they've come back again with a solid entry. 'Bones' is a fairly dark, ominous song about deep love that goes 'beyond the bones'. Equinox is a common framework of five singers from both Bulgaria and America created just for the competition. The single woman in the group, Zhana Bergendorff, has been the suspect of speculation during rehearsals due to doubts that she is actually singing in the performance. I'll admit, after watching the semi-final performance, I share them.

**Nobody But You – Cesár Sampson**

Austria saw their first win in decades recently with the fabulous Conchita Wurst and her impressive beard. They got the dreaded nul point the year after but have enjoyed a couple of mid-board successes since. As for this year – I'm not really sure what to say about this entry really. The song is nice, the staging is nice, the guy looks nice, his vocals are nice and that's about it really. If you're looking for a toilet break song, I'd recommend this one because I guarantee if you do watch it, the main things you'll remember is Cesár's gap tooth and little about the song itself.



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The Acts: Part II

**Monsters – Saara Aalto**

Saara Aalto describes herself as a Finnish snow fairy, although I describe her as MY QUEEN. Fans of the UK *X Factor* might recognise the name – Saara got second place in the show in 2016 after she repeatedly wowed judges with her amazing voice and bonkers performances. She's no stranger to second place, having come second in all five TV talent shows she's competed in including two previous attempts at representing Finland in Eurovision. She was chosen this year with her song 'Monsters' – a really upbeat song about facing your problems head on and "making friends with all the creatures hiding there under your bed". Some wrote her off as a fan-favourite flop, but my girl slays her performance every time and sailed into the final.

Together – Ryan O'Shaughnessy

Ryan O'Shaughnessy might be a familiar name to people in the UK having come fifth in *Britain's Got Talent* in 2012, and now he's returned to the spotlight, already creating a stir as being a shock qualifier from semi-final one. His song 'Together' is a cute, though slightly repetitive, break-up song that Ryan wrote about two friends of his. The song itself is slightly meh but its music video showcases gay love story with two men dancing through the streets of Dublin at night and was embraced warmly by Eurovision's large LGBTQ+ fan base. They replicated this story on stage and created a moment that propelled them into the finals despite many expectations. Fun fact: Ryan's uncle Gary O'Shaughnessy represented Eurovision in 2001 and came 21st.

**Fuego – Eleni Foureira**

Yeah, yeah, fire! Eleni Foureira is the sizzling hot Albanian born, Greek singer representing Cyprus this year who's now climbed to first in the betting odds to win. Last year, when Salvador Sobral won for Portugal, his winning message was about 'fast food music' and that 'music is not fireworks; music is feeling' but Eleni apparently didn't get this memo and is serving us some fierce hair flicking, sassy realness – fireworks and all. Is this the best song in the world? No. Have we heard many songs just like this before? Yes, but Eleni brings it to life on stage and could very well walk away with the title. There's been a lot of speculation whether or not Cyprus would actually be able to host the contest last year, with financial constraints and lack of venues and accommodation potentially getting in the way.

That's How You Write a Song – Alexander Rybak

Rybak very convincingly won the whole thing in 2009 with 'Fairytale', and after nine years of maturing (though not physically ageing apparently – how does someone stay looking so young?) and to think of a new winner, he's come back with a cheesy, nonsensical, though admittedly catchy song that would be better suited to the Junior Eurovision Song Contest. Norway have had a run of top ten entries since 2014 (except for the sad blip in 2016 #JusticeForAgnete), and this seems set to follow that trend being the bookies' second favourite to win. The song is akin to a WikiHow article about how to write a song, and apparently it takes just two steps! Step 1: believe in it; step 2: roll with it. Who knew song writing was so easy!

**Dance You Off – Benjamin Ingrosso**

Benjamin Ingrosso won *Melodifestivalen*, the Swedish selection show, with his funky, 80s throwback song 'Dance You Off'. I'll be honest with you, I have no clue what it means to dance someone off, but I'm pretty sure that he's getting over some girl by doing it. Sweden is a Eurovision powerhouse having placed in the top five six out of seven times since 2011, and their success is often due to effective staging. We've seen them bring interactive projection shows, dance routines on treadmills (think OK Go) and this year we have a charming Michael Jackson wannabe thrusting his hips on a background of light tubes which, surprisingly, works.

We Got Love – Jessica Mauboy

We're four years into Australia's run at Eurovision and I think it's about time we drop the questions about why they're in the competition SO I AIN'T GONNA TALK ABOUT IT. They have pulled out a top ten finish in every competition they've competed in so far - are they on track to maintain this record? At one point, everyone thought so but people aren't really sure anymore. Jessica Mauboy is a fairly big deal in Australia, and her song 'We Got Love' sounds almost perfectly made for Eurovision with messages about love, love, peace, peace. Unfortunately, this isn't really translating on the stage and people have been left underwhelmed with the performance. But she is a seasoned performer and could very well pull it out of the bag on the night.



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**My Lucky Day – DoReDos**

Moldova surprised everyone with a third place result last year – their best ever – when they brought back Epic Sax Guy in the group Sunstroke Project who previously represented them in 2010. They're going for the same upbeat, slapstick song this year with 'My Lucky Day' which was produced by Russian superstar Philipp Kirkorov and performed by the trio DoReDos (no clue where this name comes from). No one thought all that much about it before the show, but the staging is sorta fun and makes you forget the trash lyrics. Moldova could very well pull out another top ten performance this year.

Outlaw In 'Em – Waylon

Waylon is certainly no stranger to the Eurovision stage having come second in 2014 as part of the group The Common Linnets. Fast forward four years and he was announced to be representing The Netherlands again with the song 'Outlaw In 'Em' which is a country/rock song claiming that "everyone's got a little outlaw in 'em". Due to this message in the song, you can imagine why some controversy started to brew around the stage performance when it transpired that Waylon is accompanied by four African-American dancers – a staging choice which left people wondering if they were meant to represent the outlaws?

**Under The Ladder - MĚLOVIN**

This is weird in many respects. The song is, apparently, in English but I can't understand a word. The guy's stage name is 'Melovin' which is apparently an amalgamation of 'Alexander McQueen' and 'Halloween', but don't ask me how that works. His aesthetic is vampire chic and his performance sees him emerging from a coffin-like piano. He's got a coloured contact lens in one eye making him look terrifying. I could list more but you'll see for yourself on Saturday. Despite all the weirdness, this is something of a fan favourite and admittedly really quite catchy.

Sanja Ilić & Balkanika – Nova Deca

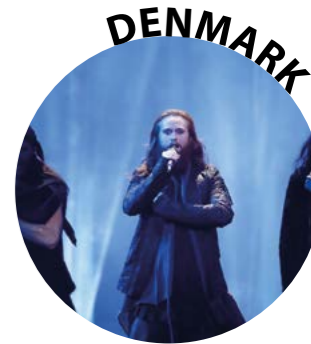
Serbia has brought one of the strongest ethnic feeling songs, in a year with the highest number of songs sang in languages other than English, with their song 'Nova Deca' which means 'New Children' in Serbian. The song is an ode to the next generation, with a hopeful feeling of creating a new world together. The group were one of the most fun on the promo tour before the competition, always willing to take an interview and give fun new renditions of songs

**Viszlát nyár – AWS**

Hungary like to send something a bit different to the competition, and this year is no exception. After winning preselection show A Dal, the metal group AWS were chosen to represent Hungary with the song 'Viszlát nyár'. This is a fairly polarising entry and will immediately turn some people off due to how screamy it is. The song title means 'Goodbye Summer' in Hungarian and is about the lead singer's loss of his father (déjà vu right?). You can really feel the pain in the screams and, just as you're about to get emotional, you see the guitarist dive into the stage and forget all about it.

Rasmussen – Higher Ground

Danish broadcaster DR had the idea of creating a song about peace and waving the white flag, and what better way for a Scandinavian country to do this other than with Vikings! They were after someone with the right look (i.e. big beard and big hair) to give the performance, and they found singer and stage actor Rasmussen to play the part. The one word that comes to mind when watching the stage show is 'testosterone', as Rasmussen is accompanied by four equally haired men providing (slightly demonic) backing vocals and 'Viking walking'.

**Lea Sirk – Hvala, ne!**

Hvala, ne? More like *hvala, ye!* Lea Sirk wrote the song 'Hvala, ne!' ('No thanks!') is about the fakers in the world, and the people who try to tell others how they should live their lives. This is an upbeat Slovenian language song complete with dance routine that Lea delivers fiercely. No one really expected her to qualify, but against all odds – here she is! And I think she definitely deserves her place there. Also, keep an ear out for the break in the song – she's using the cheapest gimmick there is, pretending the music has stopped working...

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How the hell does all this work?

43 countries go in, only one emerges. We take you through how the qualifying process works, so you know exactly how that man gyrating in sparkling parachute pants got to be on the stage. And no, we don't know why Australia is included either...



19 countries took part in the first semifinal round, which took place on the 8th May. Ten made it through to the final.

Five countries automatically qualify – Germany, France, Spain, Italy, and the United Kingdom. Portugal, as host, also qualify automatically

18 countries took part in the second semifinal round, which took place on the 10th May. Ten made it through to the final.



The remaining 26 countries battle it out on the 12th May. Results are decided by televote and jury decision – split evenly – which gives the overall winner. The winner will then host the competition next year.



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#icuHereforYou

Hi Imperial,

There's something you should know - it's okay to not be okay. Life is inconvenient and the stuff that throws us out of sorts doesn't always happen when we're best equipped to handle them. In fact, it's often the opposite. So this exam season, if you're going through something that's making it extra hard to cope, we need you to know two things: it's okay to not be okay, and we're here for you.

Imperial College Union employs full time professional caseworkers in our Advice Centre to handle the kinds of problems you may be experiencing. They are completely confidential and will provide as much or as little support as you require. The Advice Centre handles mitigating circumstances, appeals, money issues, legal woes, or anything which may affect your performance or ability to prepare.

So go ahead, send us an email at advice@imperial.ac.uk, drop by the Union (Level 2), or visit imperialcollegeunion.org/exams.

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P.S. We're also giving away exam goodies every Monday this month. Find us lunchtime in Central Library at South Kensington for ear plugs, energy bars, water bottles and breakfast tea. It's our way of showing we care and to help make studying easier.

Summer
Elections¹⁸

#leadthechange

Yet another election

Oh no, not another election! We hear you. But *Democracy* is one of our key values and that means giving all students the chance to lead the change and have their say. Summer Elections are a chance to do that across a range of positions affecting student life, including Liberation, Constituent Unions, our Academic & Wellbeing Representation Networks and our biggest Clubs, Societies and Projects.

The full range of positions will be available online when nominations open next Wednesday 16 May. The nomination period closes 23 May, while voting will run from Tuesday 29 May to Friday 1 June.

If you're planning to stand, manifestos will be due on Thursday 24 May, with campaigning set to begin on Friday 25 May.

#leadthechange

ARTS

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Clash of Cultures: Giskin Day

Giskin Day is a Principal teaching fellow and course lead for the intercalated BSc in Medical Sciences with Humanities, Philosophy, and Law. She sat down with Felix's Editor-in-Chief, Fred Fyles, to discuss her career, course, and the importance of creativity in science.

ARTS

Fred Fyles

Felix Editor

When I enter Giskin Day's office, past the main entrance of the Centre for Languages, Culture, and Communication, on the third floor of Sherfield, it has been overrun with an array of padlocked backpacks. They're being stored there in preparation of the Imperial Festival, which ran the weekend after I spoke to her, and for which she'd helped students to design an escape-room-in-a-bag challenge. Educational escape rooms, which help develop teamwork, communication, and lateral thinking, are just one example of how she brings a sense of creativity and excitement to Imperial. As one of the course leads for the newly-created intercalated BSc in Medical Sciences with Humanities, Philosophy, and Law, she's more than qualified to talk about how to break down the barriers between art and science.

Fred: Can you tell us about the intercalated BSc you've been running this year?

Giskin: Medical Humanities is actually not new at Imperial; we've run a course for about 15 years, as part of a BSc. But this is the first year we've taken the plunge and offered a full intercalated BSc in Humanities, Philosophy, and Law. We've merged with another short course called Death,

Autopsy, and Law and the course is wonderfully interdisciplinary. I think it differs from other types of intercalated BSc, in that ours is bespoke for our students. We're not sending students off to 'sit in on' other courses the way they often do in other medical schools. We've really thought about what our students like to do – and what they need to do – and we've themed the course around that. So, we've had one module on the body, one on the mind, and one on death and dying, and then students have the choice to do a project for which there is an art component.

Throughout the course every week there is a field trip; we've been to lots of galleries, we've also been to the law courts, we've been to museums. We've worked in partnership with the Chelsea Physic Garden to learn about the history of pharmaceuticals, and we've had a lot of wonderful workshops with practising artists who are inspired by medicine

"The arts give you, first and foremost, the opportunity to learn to manage ambiguity"

and science. Students have had a chance to have a go at these various art-forms, like life drawing and sculpture, as well as learning about the medical contexts of the arts.



Giskin's first love was botany // Giskin Day

F: And what's the reaction been like from the students on the course?

G: Well, naturally, the students who choose our course do tend to think of themselves as being interdisciplinary and interested. But, I guess, it's slight different now with intercalated BSc, because we've got students who are attracted to the philosophy component, or the law component, perhaps more than the art. Probably a greater proportion of them feel slightly like a fish out of water when it comes to art. But

our mantra is: you don't have to be artistic to do the course, it's all about creativity and giving it a go; the process is far more important than the product.

F: What do you think the benefits are in engaging with the arts, particularly in scientific practice? What does it bring?

G: I like to use the analogy of Exhibition Road: it used to be a traditional road with the traffic going two ways and a small pavement, but of course now there's

a huge amount of uncertainty. They've removed the boundary between the pavement and the road and it feels like there's a lot happening on there, bicycles, coaches and everything – huge amount of ambiguity. As a result, you'd think it would be dangerous, but actually it makes it safer. People have to communicate their intentions. The traffic slows down and drivers are more attentive because unpredictable things happen. What science often gives the impression of doing is beating the uncertainty out of things, but unless you can handle

uncertainty, you're in real trouble, especially if you're going to practise as a doctor. The arts have never that reputation: they have always been ambiguous. There's famously no one right answer. I think engaging in the arts is like walking down Exhibition Road: you've got to communicate, you've got to make eye contact, you've got to make reasoned judgements. These are all good skills in medicine.

When you're working in real life, you rarely have all the data to hand, there's rarely one right answer. So the BSc is a wonderful safe space of

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experimenting with the idea of there not always being one right answer and how you still defend an interpretation through lots of different types of evidence. I think it's hugely valuable for our students to do that.

F: Another thing you're involved with is the Science Communication Horizons module. I think a lot of people at Imperial maybe don't necessarily see it this way, but no matter what kind of career you go into, you're going to need the skills to explain what you're doing, and I think it is incredibly important for their careers.

G: I couldn't agree more. It's quite a tricky skill: when you write for different audiences it's not about dumbing down, it is really about pitching yourself and your material in a slightly different way. And it is invaluable. I think those kinds of skills are becoming ever more important in a digital world. It's important not just to be able to communicate technical information to others in your field, but to think about different audiences. And today, we're talking before the Imperial Festival takes place, which is a wonderful chance for scientists to leave the labs and the ivory tower and engage with real people who are interested in their work.

F: Do you also think that humanities and arts students should study some science? Can that help their practice as well?

G: I think we often view the arts and sciences as two incommensurate paradigms, when actually, there's a lot of overlap. They can both be analytical, they can both be emotional, and they both have elements of subjectivity as well as objectivity. So actually, there's not a great difference between

them, but just for the purposes of academia, we do tend to divide them up. Artists are hugely inspired by science and medicine. Go to any art gallery and you'll find works that have been really inspired by science and the weight of knowledge. I think that we could all do with being curious about everything, and not pigeon hole ourselves as 'sciencey' or 'arty'. We should be embracing both. They complement each other.

"I think we could all do with being curious about everything, and not pigeon hole ourselves as 'sciencey' or 'arty'"

F: I know I've spoken to quite a few people who, when I talk to them about the Horizons programme they say, "that's not really related to what I'm doing". Do you think that kind of distinction between art and science is what is creating a barrier of people getting involved?

G: Without a doubt. I think it starts very early on in school, where if you're going to do the science route you're obliged to take a certain set of subjects. There is definitely this two-tier system, where it's generally thought that those good at maths go into the sciences and those that are not take the humanities, which is a great shame.

Paradoxically, by the time students get to university, the arts feel too challenging somehow. But I think that is a side



The current Humanities, Philosophy and Law intercalated BSc class // Giskin Day

effect of being part of an institution in which the rhetoric of excellence sometimes interferes with the permission to experiment and permission to try things out. That's what I think the arts are so useful: you can be experimental. The Horizons programme allows students to expand their boundaries and their ways of thinking. It's a fantastic opportunity for all undergraduate students to engage with subjects that make them well-rounded individuals. They can then graduate with an education rather than with just a degree.

F: Taking things back a little, could you tell us a little about your career and your journey and how you ended up here today?

G: It's slightly unconventional. I think I too felt the pressure to go into the sciences where I was more inclined to humanities. I did my first degree in botany and biochemistry. I loved botany – I don't know why I was doing biochemistry! But I always

had a feeling that I wasn't going to be a lab scientist. I did want to go into publishing and editing, and I was lucky enough to get a job with Blackwell Science working on medical journals. And then I landed a dream job at the Science Museum, working as the publications officer. I really enjoyed it, I loved being at the museum. At the same time I was doing the MSc here at Imperial in Science Communication and at that time I was starting a family, so when Imperial offered me a part-time job teaching I jumped at that. And then a few years in I was offered a chance to devise a proposal for a medical humanities course.

I remember it incredibly clearly, as being a moment of being very torn. I didn't think the medical school would be interested in an arts-based BSc. I very nearly just turned it down straight away. But then I asked a few more questions and found out the medical school was totally on-board with this, and have been very

supportive ever since. The minute I got involved in medical humanities I realised that this was my thing. My work has always had some kind of medical angle. When I was doing botany I was studying medicinal bark, at Blackwells I worked on medical journals, and then when I was at the Science Museum I was working on the guidebooks for the health matters gallery. It felt perfectly suited to my interests, and I've loved it ever since. I think Medical Humanities is a fantastic discipline. Writers and artists have such rich perspectives to offer to medical practice – I've so enjoyed teaching it. I feel very lucky to have the opportunity to teach in a subject about which I feel passionate.

F: Within your past career you've had a lot of different roles. Do you think having that many different elements to your past career helps you today in what you do?

G: I think it definitely

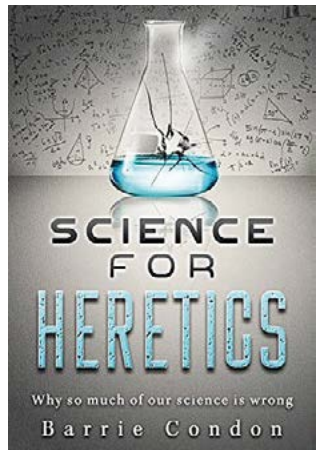
does. I should practise what I preach, and what I preach is that interdisciplinarity and creativity are wonderful. So I really think my past career has pushed me to be innovative and creative. I'm not a particularly arty person, but I think my creativity manifests itself in playful learning activities: I like designing games to incorporate in my teaching. I think if you're an engaged practitioner then you are curious about the world and you try to take in as much as you can and incorporate that into what you know and what you can pass on. That is the fantastic thing about teaching is that it's also lifelong learning. And I learn so much from the students as well. Being a non-medic teaching medics, the students have a chance to practise their communication skills. They're telling me about what they know and what they think. So that's one of the real pleasures of the job: I'm always learning from students.

BOOKS

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Science for Heretics review – the heretics have not got it right

Barrie Condon fails to convince in his attempt to overturn our current understanding and faith in science, which leaves Books Writer Clemens Jakubec less than impressed.



chance to come to grips with what has just been stated before the next claim hits them like a freight train. Apparently, there is a causal link between arithmetic, the ability to count, and the horrendous mass killings committed in the Soviet Union and Nazi Germany. If it actually exists, then somebody please explain it to me because I cannot see it.

BOOKS

Clemens Jakubec
Books Writer

The scientific method is not absolute. Every good scientist should be aware of that. However, for scientists, science and the scientific method have proven to be the most effective ways of moving towards a more objective view on the universe around us. Barrie Condon is such a scientist. He is a trained physicist. He held an Honorary Professorship with the University of Glasgow and is the author of over 80 papers published in peer reviewed journals.

Nevertheless, he decided to turn his back on his scientific background and to come out as a ‘heretic’. In his book *Science for Heretics* he sets out to undermine our current understanding of physics, mathematics, and basically all of science, with moderate success, to put it mildly. The book is one big mess, in which one wild claim follows the next so quickly that the reader hardly has the

“Some of the main problems Condon has with science seems to have their origins in a dislike for abstractions and approximations”

Another one is that mathematics does not work because one plus one never equals two. This seemingly follows from the fact that two things are never ever exactly identical. Not even atoms. Or at least not to our knowledge since we cannot look at every atom individually. I will come back to this point later. Here the author refers to Nietzsche in what appears to be a classic example of an out-of-context quotation. He speaks about the concept of “zero” as if it were some kind of spectre haunting human culture. The only thing worse than zero is infinity,



Be afraid of Fourier Transforms. Very afraid. // Gravure/Granger/Bridgeman Images

and of course, Fourier transforms. Be afraid of Fourier transforms. Very afraid.

Some of the main problems Condon has with science seems to have their origins in a dislike for abstractions and approximations. Even if no two things are ever the same, I can still imagine two things to be identical. There is no problem with that. This is an abstraction. When I say there are two cups on the table in front of me then I do not mean two in every way identical cups but two things that are similar enough in their “cupness” to be classified as identical.

Furthermore, approximations are ubiquitous in science. Every model in physics involves some

sort of approximations and every good physicist should keep them in the back of their head when

“Condon is clearly not an expert in the philosophy of science”

deriving new theories. Coming to the problem that we are not able to probe every atom individually: This is a well known philosophical problem called the Induction Problem. Karl Popper has circumnavigated this problem by saying that science can only ever falsify a theory but never

verify it. Good theories have to be falsifiable.

Although Condon has experience with the practicalities of science and knows how the scientific method is applied, he clearly is not an expert in the philosophy of science. He is so keen on stepping back from science and trying to figure out what science is actually doing, that he completely misses what science is *actually* doing. In an attempt to overthrow all of science as swiftly and long lastingly as possible, he entirely falls short of being critical about his own ideas. Perhaps the author should be more heretical in relation to his own theories, or the lack thereof. The book does not convey the picture of a critical inquiry of the sci-

entific method, but rather that of a blind and hysterical tirade against anything and anybody that aims to make a logical statement about the universe.

Nevertheless, as I like to get something positive out of every book I read, here are some of the things I took away from reading this book: it did make me think about certain issues regarding how science is conducted. It also motivated me to read up on some of the philosophical issues mentioned above, such as the Induction Problem. Although the book makes for an invigorating – or sometimes irritating – read, I do not think that it will go down in history as the work that opened the eyes of thousands of scientists to the bitter truth of reality.

The background of the entire image is a repeating pattern of various emojis. These include fruits like peaches, bananas, and eggplants, as well as vegetables like eggplants. There are also several face emojis, including a winking face with a red heart, a kissing face with a red heart, and a face with a tongue sticking out. The emojis are scattered across the light pink background.

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SURVEY

COMING SOON

MUSIC

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The soul of hip-hop: why J. Cole's status as a member

J. Cole is often seen as a musician overshadowed by Drake and Kendrick Lamar, but with KOD, his latest studio album, he shows why he's a vital voice in modern hip-hop. Music writer Jordan Bunke charts his evolution as an artist, and shows why nobody can dispute Cole's importance as a musician, or the relevance of his work in today's world.

MUSIC

Jordan Bunke
Music Writer

J. Cole is a singularly intriguing figure in hip-hop. Over the course of his ten-year career, one can observe significant growth in almost every facet of

his psyche. Whether it is his relationship with the lifestyle he has dreamt of for so many years, or his musings on his identity as a biracial black man in America, Cole has been on a journey towards finding peace and contentment that can be tracked through each of his five studio albums. With his latest release, *KOD*, Cole

has re-emerged from his self-imposed exile from public life, and instantly made a splash only the likes of Drake, Kendrick, or Kanye could match in hip-hop, all while making an emphatic statement on vices, addiction, and society. While Cole's music has always included social commentary – on topics ranging from materialism

in black America in 'Chaining Day' on his sophomore effort *Born Sinner* to cultural appropriation on 2014 *Forest Hills Drive*'s 'Fire Squad' – *KOD* feels like his masterstroke. From top to bottom, Cole sets out with the purpose to start a discourse that promotes introspection, and the execution is nothing short of astonishing. With his fifth album under his belt, J. Cole may have finally climbed out of the shadow

"J. Cole took a massive gamble with his second album, *Born Sinner*, changing the release date to coincide with Kanye's *Yeezus*"

that his two juggernaut contemporaries have cast over him for years now.

One of the tracks that best illustrates who J. Cole is as a person is 'Let Nas Down', a record that appeared on *Born Sinner*. The track has Cole recount the discovery that Nas, one of his icons throughout his youth making beats and writing raps in Fayetteville, North Carolina, hated Cole's breakout single, 'Work Out'. It is clear that Cole was conflicted about 'Work Out' well before he learned that he had disappointed one of his idols. The song is a very accessible radio single geared towards a female audience that has a catchy hook and an interpolation

of Paula Abdul's 1988 Billboard Hot 100 number one smash hit 'Straight Up'. It was only included on J. Cole's debut album *Cole World: The Sideline Story* as a bonus track, and Cole reminisces about his apprehension on 'Let Nas Down', citing the song as a necessary evil because the label would only give him a release date with a radio single. The fact that J. Cole recorded 'Let Nas Down' shows his integrity and the truth in his art, revealing a profound regret at recording a song that astronomically elevated his profile and led to his debut landing atop the Billboard 200 albums chart upon its release. 'Let Nas Down' was a pivotal moment for Cole, as it taught him to never compromise his integrity again.

J. Cole took a massive gamble with his second album, *Born Sinner*, opting to change the release date to coincide with Kanye West's *Yeezus*. After all, Kanye's status as a hip-hop juggernaut wasn't cemented until he famously thrashed the seemingly indomitable 50 Cent in a sales battle in 2007. *Yeezus* did end up outselling *Born Sinner* in their first week, but only by 30,000 copies – around 10%. Cole's album proved to have longer legs, however, edging out Kanye for the top spot on the Billboard 200 chart in the third sales week. After this, J. Cole gained greater artistic freedom. His third and most acclaimed album 2014 *Forest Hills Drive* was released in late 2014 without a promotional single or any featured artists and went on to be certified 2x Platinum by the RIAA in the United States, signifying two million sales. The album was nominated for a Best Rap Album Grammy and spawned hits like

'No Role Modelz', 'Wet Dreamz', and 'G.O.M.D.'. J. Cole decided to follow a similar route for his next effort, but *4 Your Eyez Only* failed to meet the lofty standards set by its predecessor in the eyes of many fans and consumers. It was around the release of this record that J. Cole quietly welcomed his first child with his long-time girlfriend-turned-wife. The album was hardly promoted, apart from a documentary, and after a few months spent away from his life as a world-famous rapper, Cole leaned on his die-hard fans and still toured very well despite his album's lack of impact.

And that brings us to *KOD*. Since *4 Your Eyez Only* dropped on 9th December 2016, all Cole had put out is a handful of carefully selected features for the likes of Logic, Joey Bada\$\$, Royce da 5'9", and his own Dreamville artist Cozz. On 16th April, Cole simply tweeted: "New album. KOD 4/20". Within hours, the hip-hop section of the Internet practically melted as speculation began: What does *KOD* stand for? Why is Cole's Instagram icon just the colour purple? Without a months-long album rollout, a single, or a stunt, Cole was relevant again. He released the album on 20th April and broke the single day global streaming record for an album on Apple Music, with 64.5 million streams, and the single day US streaming record on Spotify, with 36.6 million streams in the US. While he will undoubtedly perform extremely well commercially given the way the album came out of the gate, that it not why this album is so important to Cole's status in hip-hop and, ultimately, to his legacy.

Drake, Kendrick Lamar,

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of rap's elite trifecta can no longer be disputed

and J. Cole are often pegged as the three kings of the current generation of hip-hop. All of them came up in the late 2000s and early 2010s, with Drake making a splash on the scene first and Cole and Kendrick hot on his heels. Each have released a classic mixtape that has helped lead to the near-indistinguishable difference between mixtapes and albums today: Drake's *So Far Gone*, Kendrick's *Section.80*, and Cole's *Friday Night Lights*. However, over time, Cole became the dark horse of the trio. Kendrick's *good kid, m.A.A.d city* was a critically lauded masterpiece that was celebrated as the triumphant return of west coast hip-hop. It led to one of the most infamous Grammy upsets in recent memory: when Macklemore and Ryan Lewis's *The Heist* edged out *G.K.M.C.* for Best Rap Album. His follow-up, *To Pimp A Butterfly*, was massively ambitious, preaching pan-Africanism and filled with 2Pac and Jesus allegories. Kendrick came out of the album as a

messianic, near-mythical figure for hip-hop whose reputation and status in the game had exceeded that of a mere mortal.

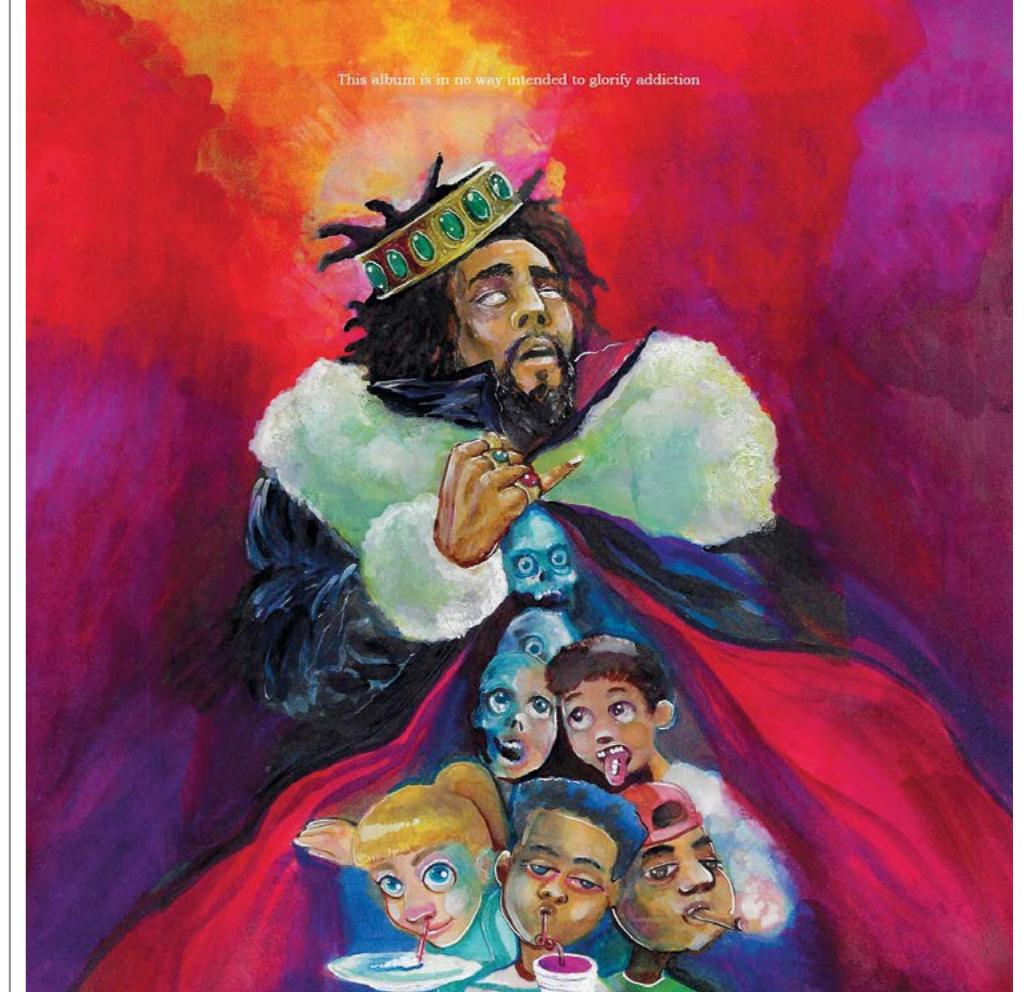
On the other hand,

"Drake, Kendrick Lamar, and J. Cole are often pegged as the three kings of the current generation of hip-hop"

Drake continued to do what he did best: produce ear worm after ear worm and hit after hit. After his 2015 commercial mixtape *If You're Reading This It's Too Late*, Drake had achieved near-global ubiquity. His fourth album *Views* spawned 'One Dance', his first Billboard Hot 100 number 1 hit as a primary artist that became the most streamed song

on Spotify (until 'Shape of You' happened, that is). With Drake's status as arguably the biggest name in the entire music industry and Kendrick's status as the saviour of rap, Cole appeared to be a tier below them. He was categorized as the middle ground: possessing elements of Kendrick's conscious music without being a revolutionary; being a hitmaker like Drake without tailoring much of his music towards a mainstream audience. Despite consistently releasing quality music, Cole was branded as the boring everyman in the middle of the hip-hop spectrum who continuously failed to seize his potential and join his generational peers among the pantheon of hip-hop legends.

That is no longer the case. With *KOD*, Cole has shown us exactly why hip-hop needs him. The album is conceptual, but one doesn't need multiple degrees or hours spent poring over forums to fully decipher its contents like a decent portion of



This remake of *Alice in Wonderland* is wack // Dreamville

Kendrick's recent work. Cole's lyrics are potent. He is an evocative storyteller whose words paint a vivid image in the mind of the listener as he transports them through a myriad of experiences with nigh-cinematic prowess. Whether it is his conversation with a damaged single mother groupie on 'Is She Gon Pop' from *Born Sinner*, or his portrayal of a deceased father leaving a message for his daughter on the title track of *4 Your Eyez Only*, Cole has shown time and again that he is unparalleled in this regard. However, this has always been the case. What sets *KOD* apart from the rest of his discography is the album's potential beyond music. Cole's releases have always been substantive, with tracks highlighting or toying with social issues or aspects of human frailty. Before *KOD*, Cole has never set out to make a

true concept album with such cohesion and effectiveness in its execution. The theme of addiction in its many forms is handled in a manner that people from all walks of life can relate to. Cole does not claim to have all the answers to the issues that he presents, but he still presents some. The album

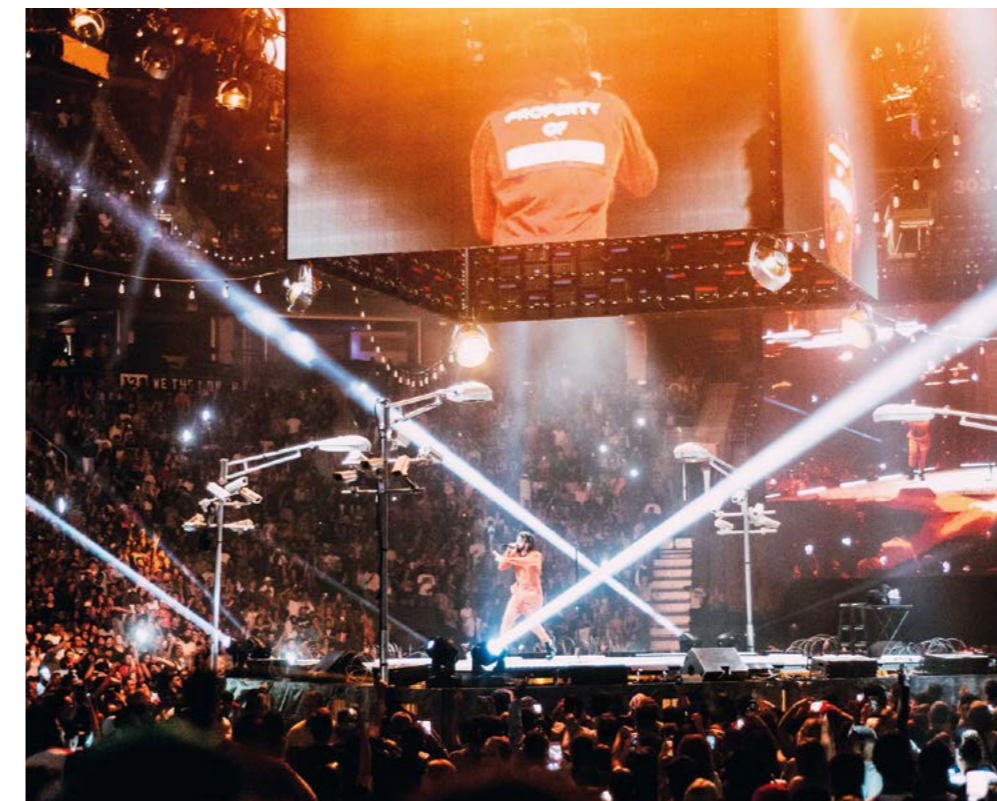
"Cole is an evocative storyteller whose words paint a vivid image in the mind of the listener"

has already begun to spark conversations about infidelity, materialism, alcoholism, drug abuse, the

tax system, and a range of other issues. Great art starts conversations, and J. Cole is a great artist. For several reasons, Drake and Kendrick's music up to this point in their respective careers has not initiated conversations with the socioeconomic reach and openness that this album has and will continue to do. Whether that is because Kendrick is difficult to relate to and not as accessible as J. Cole, or whether Drake's image makes it hard for him to tackle social issues can be debated, but the prevailing truth is that J. Cole is a necessary staple of the game. Drake, Kendrick, and Cole have been fittingly described as the heart, mind, and soul of hip-hop, respectively, and each of them is a critical component that cannot be overlooked or underestimated.



Getting deep into things // Wikimedia



J. Cole bringing the house last year // Wikimedia

FILM

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Lean on Pete: Transmissions from the Interior West

Andrew Haigh's latest release is a new direction for the filmmaker, but sees him expanding his horizons for a modern-day western.

FILM

LEAN ON PETE



Dir: Andrew Haigh. **Script:** Andrew Haigh. **Starring:** Charlie Plummer, Chloë Sevigny, Travis Fimmel, Steve Buscemi. *122 minutes*

Fred Fyles
Editor-in-Chief

What is a Western? While everybody might know a film is a Western when they watch it, the actual definition is – as with any attempt to define cultural movements – difficult to pin down, squirming and wriggling away like a slippery eel. The American Film Institute has defined the Western as films “set in the American West that embody the spirit, the struggle and the demise of the new frontier” – a classification that fails to take into account the work of Japanese directors like Kurosawa, or subgenres like the post-apocalyptic western.

However, within this definition is a kernel of truth: a western must deal with characters facing up against a harsh landscape, upon which they stake their claim.

In that respect, *Lean on Pete*, the latest film from British director Andrew Haigh, is most certainly a Western. At its centre is Charley (Charlie Plummer), a 15-year-old living in Portland with his father; abandoned by his mother, and essentially left to raise himself by his father, Charlie begins working for Del (Steve Buscemi), a cynical

horse-racer whose horizons are dwindling. After he finds out his favourite horse, *Lean on Pete*, is bound for the glue factory, he ‘liberates’ the animal, and the two begin their epic journey across America.

The shift into a Western is a surprise for Haigh. His breakout film, *Weekend*, focussed on the first 48 hours in the relationship between two men in Nottingham; introspective and humanistic, it resembled some of the best work by Richard Linklater, and became a landmark drama within queer cinema. His

“The shift into Western is a surprise for Haigh, following his previous work”

follow-up, *45 Years* took the opposite approach to relationships and time, with Tom Courtenay and Charlotte Rampling playing a couple about to celebrate their 45th wedding anniversary, whose lives are disrupted by the emergence of a hidden secret. With *Lean on Pete*, a much more sprawling work, in a completely different setting, Haigh is setting himself a challenge.

While Haigh's last two films have focussed on the relationships between individuals, and the intimacy that can develop – both over hours and years. Central to his work is what his characters say – or, in the case of *45 Years*, what is left unsaid. *Lean*



A boy and his horse // A24

on Pete, however, due to its narrative structure, consists of not so much a dialogue, but rather a soliloquy from Charley, delivered to the horse and the land and the sky. It's a risk by Haigh, one that leaves relative newcomer Plummer the chance of being over-exposed; while this vulnerability is the desired effect, there was no guarantee that it would be the outcome. Luckily, for both Haigh and the audience, it works.

Buscemi is similarly brilliantly wry and bitter as Del, and he is ably supported by Chloe Sevigny, who appears as a burnt-out jockey, whose career has been marked by a series of injuries. While it might be surprising to see two actors so associated with New York be transplanted to Oregon, but both manage to make their characters feel real

and lived-in.

The film belongs, however, to Plummer. At only 18, the assurance with which he handles his difficult role is exceptional; despite facing on extreme hardships, Plummer never allows the audience to forget that, underneath it all, his character is still essentially a child, one who will struggle to deal with his experiences once the credits roll. Haigh, similarly, who adapted the script from a novel by Willy Vlautin, highlights the harsh nature of the American wilderness, centring on the bleak, inhospitable, beautiful terrain.

The imagery used in Haigh's films have been undergoing a period of transformation from the intimate to the expansive; like the Eames' *Power of Ten*, Haigh has been slowly pulling away,

moving away from close-ups into a more monumental exploration of nature. *Weekend*, filmed

“The imagery in Haigh's films have undergone a transformation from intimate to expansive”

mostly within cramped confines of flats and cars and clubs and buses, was a study of interiors. In *45 Years*, meanwhile, the domestic interior of the couple's house was juxtaposed against the flat, misted landscapes of Norfolk – as evocative as any Yorkshire moor. With *Lean on Pete*, Haigh

pulls out dramatically, in an exuberant celebration of the Interior West. The boy and his horse become small figures, crushed between the twin horizontals of sky and land – two limitless expanses that are simultaneously freeing and oppressive.

Despite a slight bagginess to the film, which could have been edited down slightly, particularly towards the end, *Lean on Pete* marks three for three for Haigh, who is able to bring his humanistic film-making to any genre. *Lean on Pete* will evoke comparisons to the work of Kelly Reichardt – Haigh is as adept as Reichardt at capturing the twin loneliness and freedom of the natural world – but as Haigh continues his directorial journey, it's exciting to see where he might land next.

GAMES

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Video games as an art form

An examination of what characteristics and features make video games creative and artistic.

GAMES

Saad Ahmed

Games Editor

Are video games an art form? It's a bit of a controversial question and to some people, usually "old" people and art critics, it's no question at all. One of the biggest voices against considering games as art was the film critic Roger Ebert who battled against the perception of video games becoming art all the way to his death. His argument was that no one in any field had been able to name a game worthy of comparison with great poets, authors, and filmmakers.

The dictionary definition of art is "the expression or application of human creative skill and imagination". With this simple definition, it becomes easy to consider video games as art;

however, not all games may meet this criteria. The additional subtleties behind the creation of games makes their classification as art a bit

"Video games incorporate several pieces of art and creation together into something new"

more complex. Artists work with the intention of creating art and expressing themselves. In contrast, video game designers, arguably, intend to craft. Designers put into consideration things like how to push the creation to as many people as possible and publicize it. While games

must be creative and distinctive, their purpose is usually to make money. While this isn't bad in of itself, it could conceivably take away from being an art form.

Compared to most other "critically defined" pieces of art, video games are a medium of mediums. They have unique graphics with an array of 2D and 3D models as well as immersive stories and unique soundtracks and effects. If they are an art, they're one that's unique to digital space and are an amalgamation of art and science. Video games incorporate several pieces of art and creation together to make something new and unique that transcends the limits of any one type.

Video games are inherently interactive and, for some, art is usually a passive medium, in that it requires you to observe and reflect on what you experience. However, by the very act of interpretation, art arguable becomes



Limbo's dark world creates a haunting atmosphere // Playdead

interactive. Games are designed with a set of rules and are restricted to the limitations imposed by the designer. However, there is still a realm of freedom and possibility that a gamer is able to make their own. Through how you play, how you explore, and how you react, the gaming experience becomes a personal one. *Super Mario Brothers* can recreate the childlike wonder in exploring a

colorful world, whereas *That Dragon, Cancer* can make you experience the hopelessness of losing a child. I personally cried my eyes out at the touching and melancholic story of *To The Moon*. And if you've found a personal connection with the work of another, then the purpose of art has been achieved.

As technology is no longer a significant limitation now as it was in the past, game developers have gone out of their way to add creative touches in order to add to the experience. These deliberate constraints can include limited controls, muted colour palettes or abstruse renderings; all of which serve to enhance the narrative and the emotion experienced. Some noteworthy examples are, *Thomas was Alone* where the minimalist aesthetic made you feel more of a connection to geometric shapes, and *Limbo* where the dark, silhouetted universe created a feeling of mystery and unease.

Due to the fact that video games require effort and attention to immerse yourself in, it makes it easy for non-gamers to dismiss the medium.

Movies last around two hours and books may take a few days to read. By contrast, some video games need around forty hours of dedication to get the complete experience. Some people also prefer passive forms of entertainment, not wanting to bother with even a short game; their loss at the end of the day.

Video games can do so much. They reflect the world, challenge societal ideas, make us question

"Game developers have gone out of their way to add creative touches"

ourselves and our morality or, in the case of *Super Smash Brothers*, bring people together (or maybe tear friendships apart with this particular example). While some people may disagree, video games are definitely a dominant art form for the 21st century, and will likely continue to be so for times ahead.



Admiring and immersing yourself in the art. // Dotnod Entertainment

TRAVEL

travel.felix@imperial.ac.uk

London from above: *Felix's* guide to the best views

The London experience isn't complete without catching a glimpse of the city from above. But you don't always need to spend a fortune – *Elina Michaelidou* shows us where to go for the most breath-taking panoramic views.

TRAVEL

Elina Michaelidou
Travel Writer

The London Eye

The London Eye is one of the most famous attractions in London, where you can see views of Big Ben, the Houses of Parliament, and other Westminster buildings unfold along the River Thames. It has 32 capsules that run non-stop when the attraction is open, and each of them can carry up to 25 passengers at once. The entry is a bit pricey, so make sure you book in advance to benefit from the online discounts and skip the queues.

The Shard

The tallest building in London, at 306m, the Shard has everything – from offices and restaurants, to apartments and hotel rooms. Of course, it also has a viewing platform (that's for those

Taking in the views of the London skyline at the ArcelorMittal Orbit // *Elina Michaelidou*

of us who can't afford to pay £8,500 for a night in their luxury suite – or at least £450 per night for a simple room). Your ticket allows you to take their fast elevator to three observation points on floors 68, 69, and 72. The last one is outside so get a jacket, especially on cold

days – I visited the Shard on a Friday evening in late November, and it was freezing up there! Also, remember to book in advance to ensure entry.

Sky Garden

Don't forget to book in advance for *free* entry (yes, you read it correctly – *free* entry) to the Sky Garden, located inside the infamous Walkie Talkie building at 20 Fenchurch Street. Tickets go on sale up to three weeks in advance, but be quick as they sell out super fast, especially during peak periods (on weekends, around Christmas, and in summer). Upon entry, you are given one hour to grasp as much as you can from there. The highlights of your visit will not only be the view of London but also the indoor garden. There is a lovely cafe, two bars, two restaurants, and a brasserie. Booking in advance is advised.

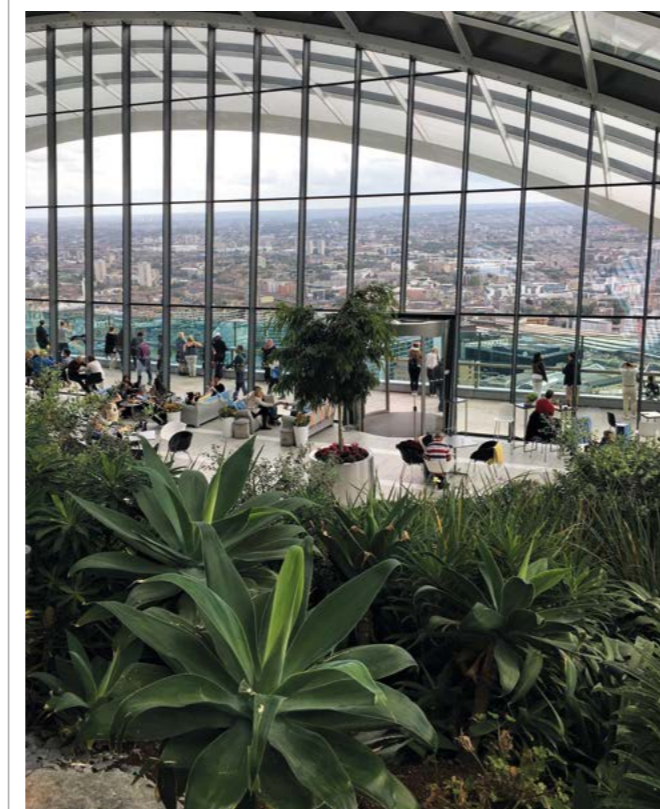
The view from Greenwich Park // *Elina Michaelidou*

The O2 Arena

The O2 Arena is a venue in Greenwich, where most of the biggest concerts happen. The 'Up at The O2' experience gives you a chance to "walk above the stars". How does this happen? You are given a harness, a pair of climbing shoes, and climbing clothes; then, you put all your belongings (except your phone and compact camera) in a locker and start "urban mountaineering" to the top of the O2; at the same time big stars may be performing under your feet. If you haven't quite got it so far, you don't get an elevator or stairs – you walk straight up the side! The whole experience is approximately 90 minutes, including a safety induction, a 20-25 minute climb, 15 minutes at the top, and a 20 minute descent. There are also sunset and twilight climbs but they cost a bit extra.

ArcelorMittal Orbit

Situated in Queen Elizabeth II Olympic Park, next to Westfield Stratford City shopping centre (a bit further from central London – took me 50 minutes to get there from my South Kensington base), the ArcelorMittal Orbit is really worth a try. The best part of it is the Slide! How does it work? Once you arrive, you put all your stuff in lockers and take the lift to floor one, where you can descend the "world's largest tunnel slide". Then, you take all your belongings, go back to the lift, and this time get off on floor two with the main observation deck, offering the views of London and the nearby area. When you're done, take either 455 stairs or the lift to go down. If you have time, go for a walk in the park or allow yourself some time for shopping!

Sky Garden at the Walkie Talkie // *Elina Michaelidou*

Emirates Air Line

This cable car runs from Greenwich Peninsula to the Royal Docks. It's next to the Emirates Aviation Experience (you can get combo tickets) and the O2 Arena. There are different types of tickets available, and you can get discounted rates with your Oyster card. Also, if you purchase a return ticket, you won't have to get off on the other side. During the ride, you can get excellent views of the River Thames and Canary Wharf. You can also spot the Shard and even the London Eye, just wait for the right moment!

Tower Bridge

Tower Bridge is one of the most recognised landmarks of London, but check its lifting times before going. You can get to the top of the towers (take either the stairs or the lift) and marvel at the

TRAVEL

travel.felix@imperial.ac.uk

"Check the forecast since you want a sunny day, though cloudy views of London are a more authentic representation of the city"

River Thames. There are two walkways connecting the towers, one on the east side of the bridge and one on the west. Both of them allow you to see the respective part of the river and also feature a glass floor in the middle! Informative videos are played in the hall before entering each walkway. At the end of your visit, don't forget to pop into the Engine Rooms, situated two minutes away from the ticket office.

Monument

You can get a value-for-money combo ticket for both Tower Bridge and the Monument to the Great Fire of London for more of the magnificent city views. At the Monument, ascend the 311 steps to arrive at a viewing platform, which, despite being small, offers fantastic views of the nearby area, including the Tower Bridge and, of course, the Shard! However, if you want to get a ticket from the ticket office, remember that only cash is accepted.

Bonus

A few other famous tall buildings in London include the Gherkin (30 St Mary Axe), the Heron Tower, the Tate Modern, and St Paul's Cathedral (paid entrance allows you to climb 528 steps to the dome). Another good spot, though maybe not as popular as the others, is the highest point in Greenwich Park, just before entering the Royal Observatory on the hill, where you can look back and admire the view. You can see a panoramic view

of the National Maritime Museum and the whole of Canary Wharf behind it. And last but not least, Parliament Hill in Hampstead Heath and Primrose Hill in Regent's Park also offer amazing views of London.

Last tips:

Check the weather forecast since you want a (partly) sunny day. I know this is not ideal if you want to plan the trip early, but if you leave it to the last minute (two to three days before), you'll get a better

indication of when to go. That's what I did for 'Up at The O2', ArcelorMittal Orbit, and the Emirates Air Line. However, this is not a good practice if you are short on time or it's the high season and you want to go to the Sky Garden. On the other hand, cloudy views of London are a more authentic representation of the city.

Ed: For more travel stories and tips, visit Elina's blog at empnefsysandtravel.com/.

The French Riviera – a dreamy Mediterranean seaside paradise!

The southern coast of France, known as the French Riviera or Côte d'Azur, is a perfect spot for beach holidays, with its beautiful nature and hot climate. Here are some tips if you're heading there this summer (you really should!)

TRAVEL

Edita Pileckyte
Travel Editor

As one of the most popular Mediterranean resorts, Nice does really live up to its expectations! Its main highlight is the azure sea, so blue it almost looks

Monaco life is definitely not too shabby // *Edita Pileckyte*

artificial and does justice to the region's name. The only imperfection of the beach is that it's made of sharp stones – quite uncomfortable to walk on barefoot – so consider bringing a pair of special beach shoes (or not – no pain, no gain). While chilling on the beach, you can observe incoming planes which seem to be landing on water since the

airport is further along the coast. You can also enjoy the views of the beach and the city from above by climbing Castle Hill, where you can find stunning waterfalls and lovely little paths.

The city itself is full of palm trees and beautiful fountains that light up in a variety of colours in the dark. The streets are very lively, especially in the evening. Loads of restaurants offer Mediterranean seafood, and although most places are quite pricey, you can find happy hours or other enticing offers. Otherwise, there's always a McDonald's around. Finally, the main street leading to the beach is full of fashion shops if you want to treat yo'self.

If you wish to explore the rest of the French Riviera, you can take a train from Nice along the coastline, where going west will take you to Cannes, home to the annual Film Festival, and going east will take you to Eze village. It is situated up on a hill so you'll need to get off the train at the bottom and take a bus to

Nice offers the best kind of summer blues // *Edita Pileckyte*

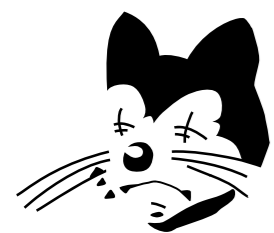
the top (or walk if you dare) The altitude is quite high, the road is winding in sharp turns, and the bus is going rather fast – it's an interesting adventure but if you're sensitive to motion sickness, this may not be suitable for you. The village itself is very beautiful – you can explore its cute little streets, visit the botanical garden, and enjoy the panoramic views. There are also some art/fashion/souvenir shops and res-

taurants – plenty of things to do for a day trip.

Going further along the coast you will reach Monaco – one of the smallest and richest countries in Europe. The royal palace is on a hill, which also offers mesmerising views of the sea and the city. You can walk along the tiny streets, chill at the park, visit the oceanographic museum, and do some souvenir shopping. Just be prepared to see many fancy cars and

yachts around! You can then head back downhill and take a city bus to Monte Carlo, famous for its casinos – even if you're not keen on gambling, pop in to look around the impressive interior.

Going even further east will take you all the way to Italy. You can get off the train at any stop along the coast and visit the beaches nearby. They will be less crowded than city beaches and will let you explore less popular areas.



Hangman



Students were horrified after losing their means of procrastination // Imperial

Students on course for record exam results after Imperial Secrets shuts down

HANGMAN

Negafelix
Editor-in-Chief

Academic staff believe the number of firsts will rocket following the closure of the Imperial Secrets page.

Imperial College London students are on track to achieve record-breaking exam results this summer, following the deletion of the Imperial Secrets Facebook page. Hangman has spoken to a number of senior tutors, from across all College faculties, who believe

the removal of the page will lead to exponentially increased productivity this exam season. In a report delivered to the Provost, academics from the mathematics department predicted the page's removal would increase the rate of firsts by around 20% across the College.

"Senior tutors believe removal of the page will lead to greatly increased productivity"

One senior tutor, who asked not to be named for fear of an online backlash, told Hangman: "this is an unpopular opinion among our students, but I really feel like this will benefit our students in the long run. Now, instead of spending their time reading awful secrets from guys about how unfair it is that girls won't sleep with them, they'll be able to learn Schrödinger's Equation - only about two years too late, but still..."

The removal of the page, on which Imperial students and staff could post anonymous secrets about their sad love lives, was not welcomed by everyone. Several students reached out to Hangman following the

page's deletion, to express their concerns. James Buxton, a second-year geophysics student, told Hangman: "I'm just so angry about the removal of the page. I didn't come to university to learn crap about rocks - I came here to troll people on the internet with literally no consequences."

Hangman also spoke to some of the admins responsible for monitoring the Imperial Secrets page, and who were hit hard by its deletion. "I graduated last year," one admin told Hangman, "and the page was really the only outlet I had. My job in management consulting makes me feel hollow, and my inability to perform basic human interactions means

I have no social life to speak of. Now we've been zucked I just cry myself to sleep each night alone on my bed of money."

"One student told Hangman 'I didn't come here to learn about rocks, I came to chat shit on the internet'"

While there was initial suspicion the College was behind the deletion of the page, when approached for

comment, faculty denied this. However, Patrick Langley, Vice-Provost (How Do You Do Fellow Kids), thought it would bring benefits: "At Imperial, it's important for us that, alongside receiving a world-class educational experience, and helping take part in ground-breaking research, our students are able to pursue their passions, whether that's handgliding, or chatting shit on the internet. While we regret the deletion of the Imperial Secrets page, we do believe it will allow students to put their education first by removing a vital source of procrastination. If Memeperial is zucked too, then we might be on track for an 80% first rate."

HANGMAN

negafelix@imperial.ac.uk

Academics demand 'safe space' after SCR invaded by undergraduate students

HANGMAN

Negafelix
Editor-in-Chief

Academic staff say they're not able to eat their lunch without the threat of having to interact with students.

Academic staff have begun legal action against the College, saying closure of the Queen's Tower Rooms (QTR) Restau-

rant for the summer violates Imperial policy. The lawsuit, which is a class action, accuses the College of "gross negligence" in shutting the QTR Restaurant, which they say is a direct breach of the College's Safe Space Policy. In a statement for Hangman, the plaintiffs said: "the closure of the QTR Restaurant was frustrating, but understandable. However, the College then decided to open up the Senior Common Room up to undergraduates. This is a clear violation of the College's own Safe Space Policy, and leaves

academics without a space to escape students harassing them about feedback or past papers." One staff member, who spoke to Hangman on the condition of anonymity, said: "the SCR was my only real respite from spending time with undergraduates. I already have to take vital time out of my research to teach the little shites, and now I've got to spend my lunch break with them too? Give me a break." When asked for comment, a representative from the College said they were "not at liberty to discuss the case for legal

reasons, but really everyone just needs to grow the fuck up." Hangman has also been made aware of a number of postgraduate students who are similarly upset about the changes, with one saying: "The one thing I was most excited about when I started my PhD was the chance to finally get into the SCR, and now first years are allowed in? It's completely unfair." Imperial College Union have said they are looking into the complaints of their postgraduate members. Speaking to Hangman, Kris Limery, Head of Postgraduate Relations,



Give us back our safe spaces! // Imperial/FJ Gaylor

said: "Imperial College Union take complaints of our postgraduate members extremely seriously. We need to find out the extent of this issue, and will therefore be arranging a survey in the next 6-12

months, which we will then never report on. Imperial College Union's survey on safe spaces will maybe be available in the near future.



ARIES

This week you're the Felix Editor, and you decide to make Felix more environmentally-friendly you'll only print the centrefold and Hangman. It's what the people want.



TAURUS

This week you decide to do your bit for the environment, and stop picking up Felix each week. Probably for the best, it's really going downhill this term.



GEMINI

This week you're done with exams! You're finally free to go back to questioning your life choices and being miserable.



CANCER

This week Imperial Secrets gets shut down - you didn't know that one you submitted about your sexual fantasies would be so controversial.



LEO

This week you fall asleep in the sun, and the next day your whole body is burnt and peeling. Does this count as mitigating circumstances?



VIRGO

This week you've only got two weeks to go until exams - better stop repeatedly making revision timetables and actually do some fucking work.



LIBRA

This week you take some time off from revision, and distract yourself with something more worthwhile: having huge arguments within your fracturing friendship group over who's going to live together next year.



SCORPIO

This week there's no farmer's market, and you essentially have no reason to live any more.



SAGITTARIUS

This week you and literally 10,000 other students decide to converge on Queen's Lawn at lunchtime to lie in the sun despite the fact Hyde Park is right next door what the fuck is wrong with you.



CAPRICORN

This week's weather means you're so dehydrated you don't even have enough fluid left to cry.



AQUARIUS

This week the fear prompted by Trump potentially cancelling the Iran nuclear deal is tempered by the fact we're one step closer to sweet nuclear armageddon.



PISCES

This week you're the Horoscopes Writer, and you can't figure out how to fit in a gag about the council elections. I'M SORRY I'M TRYING OK!!!

CLUBS & SOCIETIES

felix.clubsandsocieties@imperial.ac.uk

BELLY DANCING SUMMER WORKSHOP: TRIBAL FUSION

During the summer term, due to exams, the Belly Dancing Society pauses its regular class timetable in favour of one-off classes or workshops. This term we have three workshops lined up, the first off which is happening next Thursday, and will be in the modern style of Tribal Fusion Belly Dance.

Tribal Fusion Belly Dance is a western belly dance style originating in San Francisco, USA, in the '60s, which fuses middle eastern belly dance with elements of flamenco, hip-hop, Kathak, Odissi, and a variety of folkloric dance styles from around the world.

We've invited Alexis Southall to London to teach the foundations of this fun and quirky belly dance style; Alexis is an internationally renowned professional teacher and performer of Fusion Bellydance and Improvisational Tribal Style (ITS) based in Wolverhampton, UK, and is known for



Kenshi coming from all over the world // ICU Shorinji Kempo

her unique style, flawless musicality, precise technique, and dedicated and engaging teaching.

During this class we will work through the fundamental vocabulary and movement approach of Tribal Fusion bellydance. Throughout the class you will have the option to increase the complexity through travelling steps and arm patterns, or to concentrate on the base movement, meaning this class is suitable for any experience level, including complete beginners to belly dancing! Tribal

Fusion is characterised by fluidity contrasted with precise isolations, and we will cover both of these approaches in class. We will finish the class by stringing this vocabulary together into combinations to get you really dancing!

We hope you'll join us for this workshop – if you can't make it but are still interested in learning to belly dance with us, we have a Belly-Hoop fitness class coming up on 14th June and a Saidi (a form of belly dance performed with canes) class on the

21st June. Email bellydancing@imperial.ac.uk for details!

When: 18:00-20:00, Thursday 17th May

Where: Activity Space 1, Union Building

Tickets: £10 for members, £12 for non-members – on the door or on the Union website

You can follow us on social media to keep up with us and our classes. We have Instagram: *icu_belly_dance*, Twitter: *@ICUBelly*, a Facebook page: *ICBellydance* and a YouTube channel: *ICBellydance*. We also have a lot of info on our website: www.union.ic.ac.uk/rcc/bellydancing so do check it out!

§

IMPERIAL UNION SHORINJI KEMPO JOINS INTERNATIONAL SEMINAR

Gassho! Two weeks ago, *kenshi* (or students) practising *Shorinji Kempo*, a Japanese martial art, flew in from around the world to participate in an intense two-day seminar held in Bristol. *Kenshi* from dojos in England, Scotland, Ireland, Spain, Czech Republic, Switzerland, and Japan all

came to learn from each other. For many of us this was our first international seminar, and the first time we would train and learn from our overseas counterparts. *Shorinji Kempo* is designed to effectively subdue any attacker with minimal damage by using acupressure and the attacker's momentum against them. As a result, the size of the attacker should not matter when it comes to self-defence, and this was certainly put to the test at the IKA (International Kempo Association) seminar as individuals of all sizes trained together. The acupressure comes in helpful later too as massage (*seiho*) is also taught – helpful to soothe the aching joints and muscles of some of our more senior *kenshi*.

As well as intense training, international seminars also provide an opportunity for everyone attending to socialise with one another. This year, Bristol *Shorinji Kempo* arranged a suitably-British boat pub crawl around the city Harbour on the first night of the event, an evening of seeing lions and monkeys as well as a dining and dancing experience at Bristol zoo, and a survivor's party on the final night. Other highlights of the event included learning from chief instructors from each country, the *Taikai* (either single or group

demonstrations of a series of techniques in front of an audience), and the fantastic boy-band style dance moves from our very own club secretary, D.A. Williams.

The international seminars are held every year in a different participating country of the IKA, with the previous seminar taking place in Spain and making the national news.

Shorinji Kempo is a modern Japanese martial art, where striking and throwing techniques are blended together seamlessly with meaningful and practical philosophy. It teaches self-confidence, cooperation, and mutual respect. Every week we train in both hard methods (punches, strikes and kicks) and soft methods (releases and throws), eventually combining the two into a beautiful and dynamic system of martial practice. Zen philosophy underpins the training and is essential for both mental and physical growth.

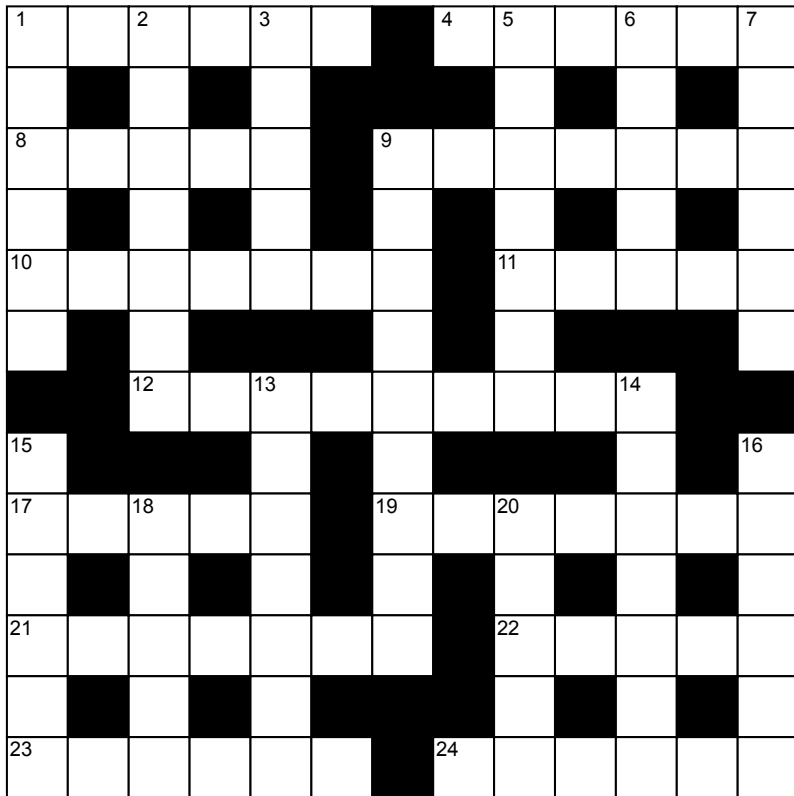
As *Shorinji Kempo* is non-competitive and holistic, the aim of practice is for everyone to benefit, grow stronger and learn the art of self-defence. Particularly when an hour-long "15-minute walk" has turned your tired captain angry, and you're next to a very tall bridge.



Come along to the Tribal Fusion Belly Dance Workshop // ICU Belly Dancing

PUZZLES

fsudoku@imperial.ac.uk

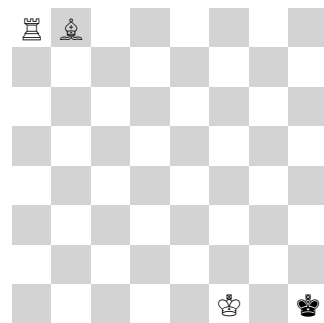
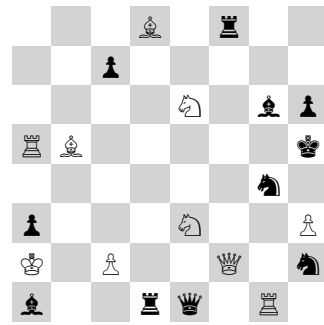
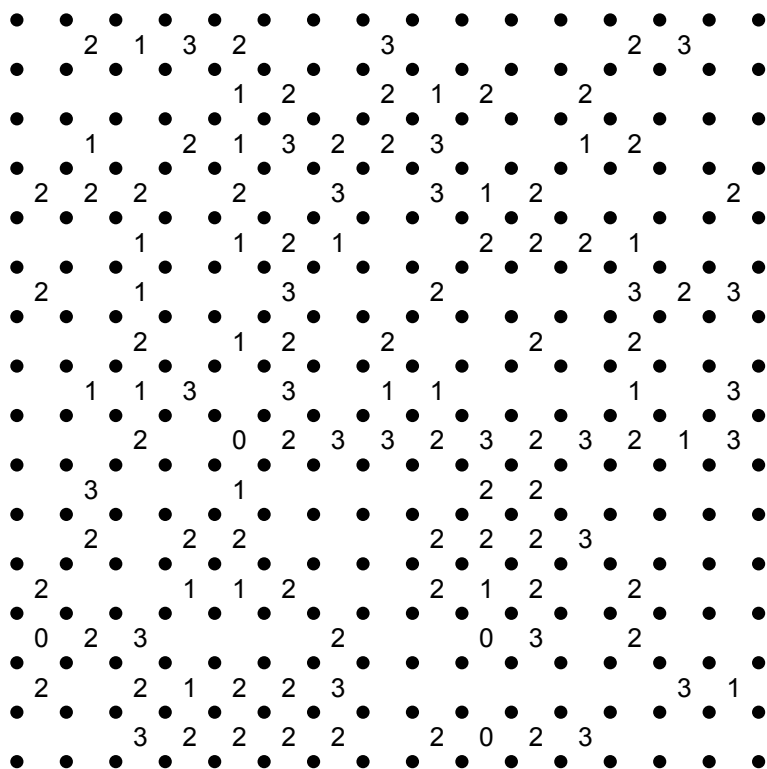


Across

- 1. Conflict (6)
- 4. Appalled (6)
- 8. Fossil resin used for jewellery (5)
- 9. Clinging part of a plant (7)
- 10. South American country (7)
- 11. Frogs' eggs (5)
- 12. Indigestion (9)
- 17. Tree related to the birch (5)
- 19. Couplet (anag) (7)
- 21. Taken away (7)
- 22. Regretting (5)
- 23. Expensive (6)
- 24. Influenced (6)

Down

- 1. Card suit (6)
- 2. Bounce back (7)
- 3. Sacked (5)
- 5. Origin (7)
- 6. Major blood vessel (5)
- 7. Sharp hooked claws (6)
- 9. Triple (9)
- 13. Become shrunken and wrinkled (7)
- 14. Make louder (7)
- 15. Material (6)
- 16. Amalgamated (6)
- 18. The Three Musketeers author (5)
- 20. Cast, shed (5)



Chess

White to move first in both problems. Forced checkmate in two moves for the top problem and three for the bottom.

FUCWIT

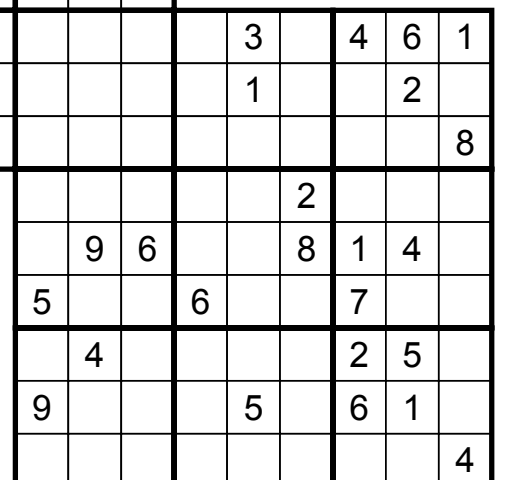
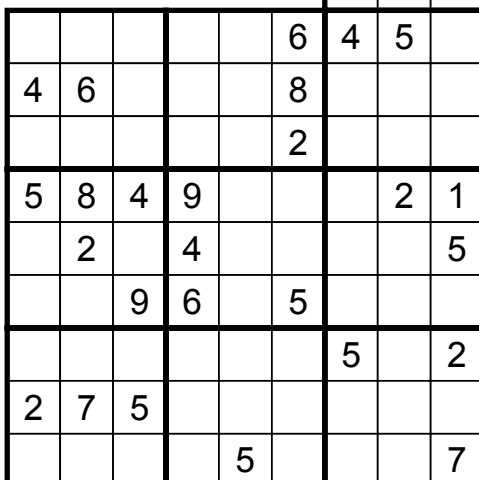
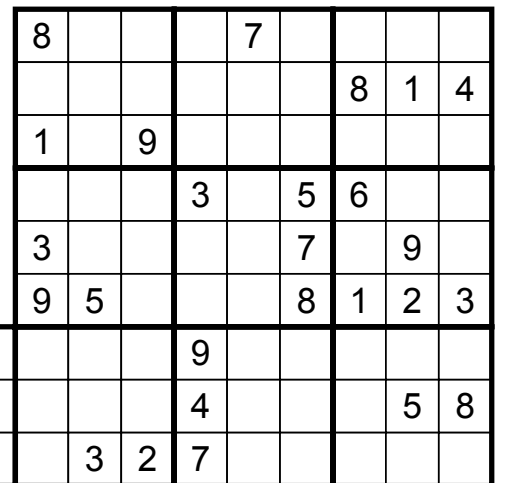
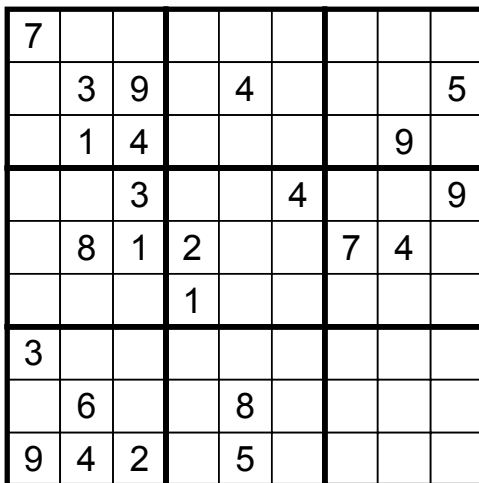
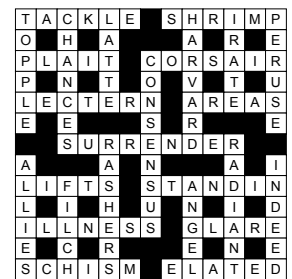
1	Nonogram of Ketamine	349
2	Q	304
3	Puzzle Snuggle Cuddle Couple	278
4	TioUdin	271
5	OK	241
6	Abelian Grapes	169
7	Luncheon Pals	164
8	Maxiane	133
12	The Indoor Sundial	110
16	yHt	67
20	Snails	55

Send in your solutions to fsudoku@imperial.ac.uk before midday Wednesday!

Points Available

Crossword	4
Slitherlink	2
Samurai Sudoku	4
Chess	6
Total	16

Solutions



SPORTS

sport.felix@imperial.ac.uk

There's nothing Bata: ICACXC literally crosses a country

SPORTS

Duncan Hunter
ICXCAC Tour-rep

You Bata believe it: we're back with another of ICXCAC's many high quality trips. For the first time, we've taken a full team of 25 to what has been described in previous years as "the best trip I've been on with Cross Country" and "the daddy of all road relays"; a description that matches the experiences of this year, in the 46th (and Imperial's 4th) Batavierenrace. The race, a gargantuan 175 km, split into 25 legs, is the largest student relay race in the world, running through the night and into the day, from Nijmegen to Enschede.

Early on Friday morning, while the team was awake, they were not united, and would not be until they reached

the start. 14 soon-to-be Batavierens piled into a minibus and Mark's car, before heading off to Nijmegen, accompanied by 15 loaves of bread and ten packs of cheese (Mark left the pickle at home, don't tell Duncan). With an efficient Chunnel, some were able to stop at the beach and still reach their destination well on time. The rest of the group had the pleasure of taking a coach to Eindhoven. With such games as 'who has the red card' and 'why does Mihai always have the red card', and a beautiful ferry ride, the time flew by. Before we knew it the train from Eindhoven had reached Nijmegen. There, the team were united, and, with tour t-shirts donned, the race would begin with Jack Mitchell taking the baton back to the Radboud Uni.

The race is split into three stages, with eleven taking on the gruelling night shift before being met in Ulft by the rest of the team. Heinrich started



Squad that took on the Bata // ICXCAC

this challenge, but luckily our runners would not be alone. Accompanied by a cyclist, on a bike with 'retina burning' blue lights, encouragement and support would be within arm's reach. Mark and Jess then delivered a strong

one-two before handing to Filip and Tom. While we suffered a small bike-mare, we pulled through, with Ian proving hard to find for Georgia. Nomuna managed to wake up in time to finish the stage, before we headed to Ulft to get a bit of rest.

In the morning leg, reverse Tri-Traitor Rowan saw the light and put in a rapid run to start us off, to hand over to the former 24th fastest woman in the Netherlands Jenny Lea. She couldn't stop laughing as she posted a rapid 16:19 3.8k. Due to the antics in the night, we started the day in 142nd place, but with every leg we were improving. Maryna and Anna advanced us to 72nd. "You're the predator and they are the prey, you're a tank, you're flying, you're a flying tank!" were the shouts of Mihai, as he and Remy handed over to Aymeric and Henry, who did a great job of convincing us they weren't injured. The morning stage was done, we were

in 55th, and had only minor damage to our van.

"After the race we got ready to party with the other 8000 students in two festival tents and an outdoor stage"

In the afternoon the rise through the ranks continued. Euan, Greg, Ophelie, and Matt all put in strong times to put us up to 33rd. Could we beat our position of 17th from last year? Lewis was clearly determined for this, although he may have just been keen to get to the brewery at the end of his leg. Liv then finished of the journey, matching Jenny's and Matt's 5th place in their legs. The final stage

saw club captain Alex Mundell and Tour-rep Duncan running from the centre to the finale. With thousands of spectators, and ample water supply, Alex posted the 6th fastest time of the stage, with Duncan showing his two hours of sleep and lack of training with a solid 52nd.

We finished 27th out of 300 teams, which considering our issues, was very impressive. What was even more impressive though was the fancy dress for the afterparty. With our best attempts at retro runner, we got hyped and ready to party with the other 8000 students in two festival tents and an outdoor stage. We danced to the links and rechts well into the dawn, giving everything we had left to showing the Dutch how its done.

The wake up call at 8:30 of music blasting through the sports hall speakers forced the 25 weary heads of ICXC up, before heading back to the vans and heading home.



The extensive route taken by the brave cross-country team. // ICXCAC