



JSGS

2020 ISSUE

**JOHN STACE
GEOGRAPHY SOCIETY**

Exclusive interview with Mr Will Stockdale
Events and highlights this year
Student articles

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FOREWORD

I am sure we can all agree, 2020 has been a traumatic year in more ways than one. Coronavirus (or Covid 19) has left a trail of human and economic destruction in its wake. This is not the time or place to wade into the debate over its origin or how the pandemic has been managed save to say the cost in lives and living standards is going to be with us for many years to come. It is a scar that will never leave us. Ros and I have been extremely fortunate to be in our New Zealand “bubble”. As I write this on 9th June 2020 there have been no new cases in New Zealand for 18 days and the Country is officially Covid free. With only 22 deaths and no reported cases, our lives are returning to normal other than having closed borders. We are a country of 104,000 square miles (roughly 14,000 square miles larger than the United Kingdom including Northern Ireland) with a population of only 5 million. That helps!



What is important to me is the health and academic success of the students at Westminster, especially those who are JSGS Members. You have all experienced the ultimate “disrupter” being sent home from school for a whole term and maybe longer. Your respective homes are around the globe, your President this year, Skyler Lu is at home in Shanghai while others of you are in London. We will all remember these unprecedented days and for the rest of our lives we will recall where we were. Some of you may have had illness in the family and others will have experienced the sadness of death amongst relations or friends. My thoughts are with those families.

In the difficult days and months ahead may I ask you all to think kindly of other people, be thoughtful, show leadership and humility. Whatever any of us may think or have been told, about the origins of the cataclysmic pandemic or the senseless killing of George Floyd, let us all pull together and help to make this earth a more equitable and a fairer society.

To those of you leaving Westminster this year may you have success and reward for all your hard work. To Skyler Lu, this year’s President a special “thank you” for your passionate leadership in difficult circumstances. Skyler has been ably supported by Thomas, Kit, Nicole, Maddy, Bel, David and Pan. Thank you all and I hope we can all meet up in person before too long.

John Stace

June 2020

WHO ARE WE?

→ Joanna Fang WW



Jo is proud to call herself a geographer despite the haters, but she doesn't mind the linguist label either.

In her free time she enjoys, in no particular order: efficient nap taking, playing the piano, eating rice, collecting rocks, and coddling her dog, and is always up for a discussion on anything from police abolition to the entire discography of One Direction.

→ William Yu GG



Will admittedly took geography because he had a spare A Level, but has not regretted it once. Enjoys physical, cause glaciers are cool.

He mostly splits his time between making robots and sleeping (though really, just the latter,) and can be found napping at all times of day in room 62.

→ Max Peel RR



Max is an out and proud geographer who enjoys wearing sloppy hats indoors, and writing their prep the same day that it's set.

Their wisest life decision so far has been to spend lockdown trying to become TikTok famous. So far they have no regrets.



INCOMING JSGS TEAM 2020 - 2021

It's safe to say that we all felt slightly apprehensive when faced with being handed over the reins to the JSGS society in the midst of a pandemic. Coming up with ways to continue promoting geography whilst online was a real challenge, one which we rose to, through many Zoom meetings and tips from Skyler, the outgoing president.

We are proud to present the culmination of our efforts in this year's JSGS magazine, the ultimate labour of love, formed through many hours of late night editing, weekend work grinding (who knew coming up with 20+ individual design ideas would be so difficult?) and equal margin pedantry (courtesy of Will, our design expert.) Do find us and let us know what you think of it!

We would like to thank the Geography department (the best in the school) for supporting us in our endeavours - a special mention to Mr Stockdale, who this year leaves us for a (inferior) post at Abingdon School - and all the students who contributed insightful and fascinating articles. A big thank you also to Skyler, who has not only done a fantastic job of running the society, but who made the transition to our new jobs so much easier. Finally, we would like to thank John Stace himself, for continuing to support the society and providing us with an admirable patron.

The geographer of today tries to make sense of a constantly changing, dynamic and confusing environment. To study the subject is to become equipped with the skills necessary to analyse the turning points which we will face in the coming years, and to take the action that is needed. We hope that this sentiment is one you find within the magazine. Enjoy!



EVENTS



Skyler Lu

As a head of society, I have always struggled to write intros to articles, but please do read on – the article gets much more interesting. This academic year, our society has been lucky to welcome a range of speakers across a great diversity of fields. All of the talks covered topical areas that are greatly relevant in this age of uncertainty.



The year kicked off with a talk from Hassan Al-Damluji OW, who works for the Gates foundations. He argued in his talk titled 'Do all lives have equal values?' that we should all be responsible global citizens and work for the common good of the whole planet. Echoing the view held by the Gates Foundation, Hassan argues that all lives are equal and states that the foundation's goal is to end extreme poverty.



As a British-Iraqi development expert, he proudly presents his identity as a globalist, and argues against Theresa May's point of view that 'If you are a citizen of a world, you are citizen of nowhere and you do not understand citizenship.' Global citizens are not disloyal to their country, he claims, but through having diverse backgrounds, gain a wealth of experiences. This point of view is extremely interesting in light of the COVID-19 outbreak. The approach taken to control the pandemic has been mostly made on a national level, lacking true global cooperation, with a few nations threatening to defund the WHO. International mobility has been heavily restrained. The race for vaccination should also be an exciting event to watch out for. Many nations have promised to make the vaccination a global good and those in most need would be able to gain access. The extent to which these promises would translate into action would be tested after one vaccination makes a breakthrough.



As a joint event between JSGS and John Locke society, Mr John Stace kindly invited Mr Terry Waite to the school to talk about his experience. Being held in Beirut for nearly five years and spending the first four years in solitary confinement is a life-changing experience to say the least. It surely could not be summed up in a 40-minute Locke lecture, but his calmness retelling the story left me in awe, as well as his kind descriptions of his captives. He believes in the best of everyone, and it is sure this faith that made him an excellent negotiator. His message that 'violence does not solve violence' is a very important message to us all in light of current events. It is only through conversation and cooperation that stigma can be removed and racism combatted.

As part of the One World Week initiative, the society planned out an event named 'Map Yourself'. We provided a map of London, a map of the UK and a map of the world. Students and staff alike marked their residence, origin and inheritance. It was great to see students with cultural ties to all continents and a great range of countries. There are also students and staff from across the UK. However, the regional inequality within London was still highlighted, as there were very few students living in the South East part of London. The event was a great success, thanks to the genius of the President to hold it in Yard, and it was truly encouraging to see people enjoying the activity, chatting with their peers and observing the trends.



The next speaker, Terence Bendixson, was an OW that I met by chance at the RGS. When asking a question about the Tube at an urban lecture at the RGS, Terence explained to me the target consumers of the London Tube are middle class commuters. By chance, we got talking as I am from Shanghai, where he is planning to write a book about, and he turned out to be an OW. His visit to Westminster was a nostalgic trip, and during the talk he interestingly compared 21st century Shanghai to 20th century New York and 19th century London, though the picture might have been heavily changed following the COVID-19 outbreak.

The first talk in 2020 was from Ms Madhu Rajesh. As the director of International Tourism Partnership, she has been working on sustainable development across the globe. Her talk brought the big idea of sustainable development into everyday context. She described how large corporations try to be more environmentally friendly through investing in water-saving technology when producing jeans, and how hotels can reduce plastic waste by the simple method of not directly offering single-use plastic combs and toothbrushes to guests. Her talk highlighted that how we as individuals can choose to be environmentally aware when we shop and help reduce plastic pollution and save freshwater resources. COVID-19 has significantly increased the disposal of single-use products, especially in medical settings. Large numbers of protective gear and masks might find their way into the ocean, posing a risk of infection while heavily polluting the environment.

Apart from talks delivered by wonderful external speakers, our student speakers also presented a series of exciting talks throughout the year. Maddy Shah-Scott presented her view on the eradication of malaria. As malaria has not been completely eradicated, it has the full potential to make a dramatic comeback. She argues that as malaria rarely affects the wealthy nations and most of the victims are in sub-Saharan Africa, its funding has been declining. However, organizations such as the Bill and Melinda Gates Foundation has promised 1 billion dollars towards its research and eradication. Max Peel delivered another talk stressing the importance of ports in the context of geopolitics, especially mentioning recent events such as the power struggle over Crimea and the strategic importance of a warmwater port for Russia. Ollie Ellis delivered the very first society talk over Zoom on the historical context and geopolitical impact of the cod wars, a series of conflicts between the UK and Iceland over fishing rights, during which the UK bravely defended the supply of the raw material for the national dish of fish and chips.

Quizzes are another important event which the society is excited to hold. This year, there was one quiz for the sixth year and another for the lower years. The questions had been carefully picked and there is always food to follow up. It is great to see many pupils using this as a bonding opportunity and laugh at each other when they get everything wrong. Stupid mistakes are often an excellent conversation starter.

As a society, we are proud with the variety of events we offer. With the current uncertainty posed by the pandemic, I sincerely hope that it would not severely impact the diversity of activities on offer. Nevertheless, my successors are a creative bunch and I am sure that they would be able to come up with creative solutions.



In light of the recent Black Lives Matter protests sparked by the murder of George Floyd, the JSGS team has compiled a list of geography focused resources to do with the BLM movement and the history of the Black community, both in the US and globally. We hope you find these helpful. These resources and more can also be found on the Geography department's [Firefly page](#).

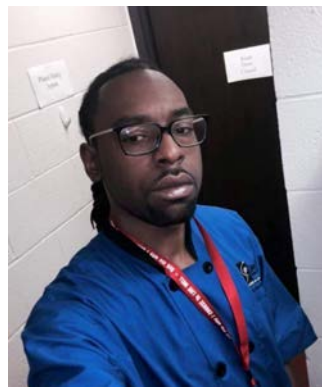
- JSTOR articles on [institutionalised racism](#)
- TED talks [to help you understand racism in America](#)
- Slavery and [the origins of the American police state](#)
- NYPD: Biggest gang in New York ([BBC documentary](#))
- [Who Do You Serve, Who Do You Protect?](#) (essays on police brutality)
- Amnesty International on the [Windrush generation](#)
- Books by [Benjamin Zephania](#) (the library has some of these)
- US [immigration timeline](#)
- [Segregation in America \(Fair Housing Act\)](#)
- [AI instils racial bias](#)
- [The Atlantic slave trade and the legacy of injustice](#)
- How [race has framed Geographic research](#)
- An analysis of the [role of race in the War on Drugs](#)
- How the [1994 Bill](#) fed the mass incarceration crisis
- [Discrimination](#) in the judicial system
- On White Flight: [My Road Trip Through the Whitest Towns in America](#), [The Little Problem I Had Renting A House](#)

THE POWER OF PROTEST

Jo Fang WW

George Floyd was not the first Black man killed by police. Before him there was Philando Castile, Alton Sterling, Eric Garner, Tamir Rice, Trayvon Martin. Killed for reaching for drivers' licenses, selling cigarettes, carrying a toy gun, looking 'suspicious' when holding a bag of Skittles. These are only the most well-known cases, propelled to attention by the power of social media. It is sobering that it took a combination of worldwide lockdown in the midst of a pandemic and the widespread distribution of yet another innocent Black man's graphic death to truly galvanise large numbers of people into educating themselves on the Black Lives Matter movement in order to begin to act. As Renni Eddo Lodge, author of 'Why I'm No Longer Talking To White People About Race,' puts it, 'I do think some of it has to do with the fact that people haven't got anything to do right now. I do find it distressing that it took that to legitimise racism for a bunch of people who weren't paying attention before.'

Across social media, one of the most dominant emotions expressed - especially when it comes to non-Black POC or white people contributing to the conversation - is shock. Shock that we could live in a world where Black people are unjustly killed, and their families do not get the justice they deserve. As I write this article, George Zimmerman, the killer of Trayvon Martin, is suing Martin's parents for more than \$100m, claiming to be the victim of a conspiracy along with malicious prosecution and defamation. (In 2013, he was acquitted of all charges; in 2016, he sold the gun with which he shot Martin for \$250,000.) This shock is often coupled with anger, sometimes disbelief, or guilt, and an inability or struggle to process witnessing Floyd's death. These emotions are explicable because they come from having been sheltered from what is the lived reality of others; in some cases this is wilful ignorance. What was for many a first wake-up call was for others a representation



Left to right: George Floyd, Philando Castile, Alton Sterling, Eric Garner

of their everyday, their now practically unavoidable trauma filmed and broadcasted for the world to see.

Emotions on the part of white people and non BIPOC (Black and Indigenous people of colour) are encouraging evidence of growing awareness, but they do little to trigger change unless active action is taken - petitions, boycotts, protests, riots. Struggling against the powerful is a tradition which stretches back generations, whether peaceful or violent. Those who ask why those on the streets can't just 'protest peacefully' (keeping in mind that the large majority of protesters have been peaceful, most violence has been incited by white supremacist groups exploiting the protests, and the police have often reacted with disproportionate violence) would do well to remember that the US revolution itself involved property destruction, in the form of the 1773 Boston Tea Party. Those who uphold Martin Luther King as a bastion of pacifism forget that peacefulness did not prevent his murder, and that he was in fact labelled as a radical, believing that vast systemic change was the only way forward, saying, 'I could never again raise my voice



Left to right: Tamir Rice, Trayvon Martin

against the violence of those oppressed... without having first spoken clearly to the greatest purveyor of violence in the world today: my own government.' And those who praise Ghandi in a similar vein should consider why they have not heard of Bhagat Singh, or other more violent revolutionaries who had as much to do with Indian independence.

When learning about past revolution, we should all be evaluating whose narrative we are learning - that of former ruler, or that of the revolting oppressed? Have we forgotten that the suffragettes, now so praised as heroines and pioneers, were demonised as anarchists and even terrorists by contemporary media, in a dynamic eerily



similar to what is currently occurring? What about Stonewall, 51 years ago, a turning point in the fight for LGBTQ+ rights, which started out as a riot? Why exactly do students learn about MLK and Rosa Parks, and their peaceful sit ins and boycotts in school, and not their more militant counterpart Malcolm X, who also contributed to the civil rights movement? What is the 'right' way to protest for BIPOC rights in a nation inherently built on the suppression and systemic neglect of said rights? Wide, systemic change is by its very nature a shaking up of the status quo, the very same status quo which has granted protection to only some - never to all - who will see their security threatened and challenged; rightly so, when it is contingent on the marginalisation of others. Peaceful protest is indeed valid, and it has been undertaken for centuries, evidently not always successfully, and, ironically, more often than not met by violence (think of the Freedom Riders, or the beatings of those who participated in sit-ins, and the lynching of those who organised Black voters.) Those in power are obsessed with calling for this selective peace, and we must critically think about how they themselves benefit from this narrative.

People who feel uneasy with the idea of anything more than that should examine exactly why they feel that the destruction of material goods and profits is less palatable than fighting for the lives of Black people in a society where the former has been consistently valued above the latter. On which should we be placing more importance? For the privileged, the change that those in the streets are asking for requires confronting the benefits brought by centuries of violent oppression, considering how best to deconstruct them, and sitting with the feelings of anger, shame, guilt and discomfort that will inevitably occur. This is the same discomfort which cannot see how the protests were never just about George Floyd, or which feels it has the right to dictate how one should appropriately react to generations of vicious suppression, or which manifests itself in the, 'I'm not racist, but...'

Protest in all its forms, when undertaken by the underdog, will always threaten the powerful. That is in its very nature. Change is all too often presented as a gift, a concession, from those at the top, when in reality it has much to do with the sacrifice and struggle with those from below. We are witnessing history right now. It is important to keep in mind what is really behind popular contemporary opinions, who is forming them, and why.



Photo: The George Floyd mural outside Cup Foods at Chicago Ave and E 38th St in Minneapolis, Minnesota. Flickr / Lorie Shaull (cc)

Sixth Form Articles

Perspectives from Upper
School geographers

THE RISE OF WECHAT

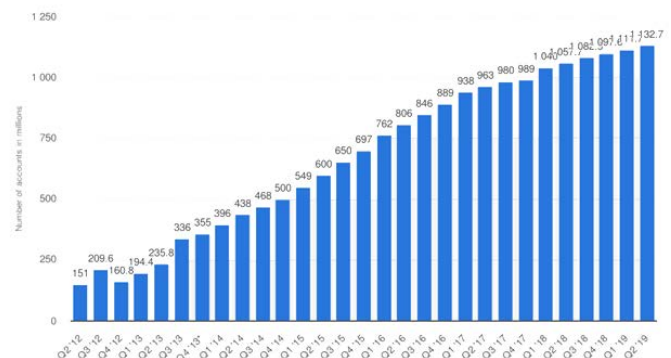
WILLIAM YU GG

Social media in the west is often seen as a past-time: it's trivial, inane and seemingly exclusive to the younger generations.

However, in China, social media is a lifestyle. The rise of QQ, an instant messaging service, and the ensuing transition towards WeChat has underpinned China's recent development economically, socially and politically. The app is both ubiquitous and universal, encroaching on every aspect of public and private life.

WeChat is a messaging, social-media and payment app developed by Tencent and published in 2011. E-commerce was being strongly supported by the Chinese government at the time (as part of the 12th five-year plan), and WeChat saw strong user ship – over 100 million people had downloaded the app by 2012 – which earned support from the state. This figure rapidly rose past 400 million by 2014, to 889 million monthly active users by the end 2016, and eventually now – as of 2019 – an estimated 1.1 billion people use WeChat monthly.

Number of monthly active WeChat users from 2nd quarter 2012 to 2nd quarter 2019
(in millions)



Sources

Tencent, China Internet Watch
© Statista 2019

Additional Information:

China: Q2-2012 to Q2-2019: MAU of Weixin and WeChat

Growth in WeChat userbase, 2012-2019

This is unsurprising. It is true that potential competition is smothered out by both the infamous Great Firewall of China (which blocks out Western media platforms) and steady government support – however, even beyond that, WeChat offers a plethora of services to its userbase. What is unique to WeChat is its marriage of both social and functional features: users can send instant messages, make voice and video calls,

and post updates on their life to Moments. However, the app also acts as a transactional platform. WeChat Pay is a digital wallet that is directly integrated into the mobile app; not only can users exchange money with each other, but businesses can develop ‘mini-programs’ that act as a virtual storefront. This includes everything from a coffee delivery, to hailing a cab, to buying a handbag. Moreover, by scanning a printed code, customers can pay physical businesses using their virtual balance, be that a supermarket or market stall; restaurant or street stand. The scale of digital payments in China is immense: in 2018, 83% of all payments in the country were made on a mobile phone as opposed to cash or a bank card. Companies using the platform as a market contributed to over 20.3 million jobs in 2017. WeChat itself doesn’t own a complete monopoly on digital payments – its competitor, Alibaba, has a widely used payment service as well. However, WeChat handles over twice the transactions daily (1.2 billion compared to 0.5), and altogether, this is still reflective of the huge uptake of digital platforms both by consumers and producers, and of its overwhelming influence on the Chinese economy.

But perhaps more significant is the social side – the amount of information being disseminated through the platform is astronomical. 34% of all Chinese mobile traffic in 2017 was WeChat-driven – this is compared to 15% for Facebook in both North America and Europe. However, this data is all conveniently subjected to the purview of the Chinese State: this involves not only abidance to strict censorship laws, but also reveals text messages, location history, and financial credit to

government eyes. When you consider the complex integration into individuals’ lives, you discover that near-every facet of citizenship can be exposed to scrutiny.

Imagine a person waking up in the morning. They read and reply to friends’ messages; order a coffee on with a mini-program; request a taxi to work. Before they have even left the building, WeChat already knows when they wake up; who they talk to; their payment information; their tastes; their address; where and when they travel. Many people authorise payments with biometrics; the app now knows their fingerprint and even the contours of their face. It is data centralisation that surpasses even giants such as Google and Facebook, but a necessity to provide users with a customised and even intimate service. However, it is terrifying to think how people are inextricably reliant on this service – more so, how the government has total access to this information.

This has been clear through the many years of WeChat’s existence. Private chats are subject to scrutiny; any comments that ‘damage the national image’ or ‘cause adverse international effects’ could at best ban you from the service, and at worst lead to a prison sentence. In 2017, two people were arrested in Nanjing for satirical comments; another was arrested for joking about joining the Islamic State. People are regularly detained without trial for ‘picking quarrels and provoking trouble’. The common factor between these cases is that they were all in private contexts. The reach of the state extends to even the most personal aspects of life, where an inappropriate but casual joke can lead to serious consequences.

Moreover, the heavy hand of censorship is forever looming over the populace; any message, post, or even reference to ‘unapproved’ content – such as to political scandals, the Tiananmen Square Massacre, or the concentration camps in Xinjiang – is swiftly disappeared from the platform. Censorship is ruthless and surgical, happening minutes, if not seconds, after a provocative statement. Anecdotally, a classmate of mine was banned from the service before he even finished laughing about the joke he had made.

While arrests are obviously grave, even a ban from WeChat has severe effects: losing access to the app shuts you out from digital payments, from communication, from keeping up with the people and country around you. The former is especially important given China’s aforementioned shift in recent years away from being a cash-based nation – which has simultaneously meant that many businesses, especially small ones, don’t carry cash for change, and are reluctant to trade with you if you can’t pay with your phone.



Example of mobile payment

However, it is important not to disregard the benefits that WeChat has brought upon China. It is



multifunctional and eases the lives of many people with its convenient features, saving time and money. It acts as a platform on which millions of people can easily set up businesses and earn a living - they way it democratizes business that enables even those living in the most rural conditions has a distinct irony. But most importantly, it connects people together – at its heart, WeChat is a messenger and social media app. Its success is plain to see, given its massive growth, and its importance to its userbase cannot be understated. At the same time, it is important to be aware of the almost Orwellian control the app has on Chinese citizens. Learning lessons from this service will be necessary, especially for our Western social giant counterparts, to reconcile data collection and provision of everyday utilities with freedom and personal privacy.

THE SOCIO-POLITICAL IMPACTS OF UNRESTRICTED MIGRATION ON THE UAE

Max Peel RR

Over the past 5 decades, the United Arab Emirates has become an increasingly popular destination for international temporary labour migrants seeking employment opportunities and higher standards of living. According to the most recent UN estimates, migrants account for 7.8 million UAE residents out of a total of 9.2 million. The UAE has become heavily reliant on economic labour sourced predominantly from South Asian countries and hence in 1971 the UAE government introduced the Kafala Sponsorship System which allows nationals, expatriates and companies to hire migrant workers. The Kafala program has been heavily criticised both nationally and internationally due to the concerns regarding labour and human rights abuses of guest-workers in the UAE. The state of workers' rights was aptly summed up by Karen Young, who was a political science professor at the American University of Sharjah from 2009 to 2014. "Foreigners contribute to society but, as outsiders, are not part of that society."

The UAE is well-known as an authoritarian nation which has come consistently under fire for human rights abuses. Despite this, many migrants claim that the environment of the UAE is welcoming of foreign influence as well as a place of limited freedom of discussion and thought. Many longer-term migrants have also made claims of a greater liberalisation of thought and belief over the past few decades,

although it is important to note that most of these opinions come from migrants who have lived primarily in Abu Dhabi or Dubai with legislation and social attitudes varying between the different Emirates. This apparent liberalisation of the strict social and sharia legal practices is one of the key reasons that many western businesses choose to locate branches - which range from financial services to a branch of the NYU campus - in Abu Dhabi and to a lesser extent Dubai, as opposed to the other three Emirates.



However, such liberalisation has been labelled by many as simply an illusion. "Dubai has an economy that's based on a mirage," says Syed Ali, sociologist and author of "Dubai: Gilded Cage." There is an "unspoken contract" between a place that has very little natural resources and the foreign labour that comes in to fill that gap, he says, and it works as long as everybody follows the unspoken rules.



"The deal is to come and work and enjoy the good life – here or once you get home to the money you remitted – as long as you don't engage in anything remotely political." The state of workers' rights is highlighted by Young who added that had a UAE national desired her job, she would have been immediately fired. Such practices in The United Kingdom would almost certainly result in an employment tribunal hearing or a lawsuit whilst in the UAE such workplace discrimination is completely legal.

The extreme lack of migrant workers' rights in the UAE has led Amnesty International and other humanitarian agencies to illuminate the hardships migrant workers have faced, including exploitation of construction workers and unequal protection of women and domestic workers. In response, the UAE government has passed limited legislation to help prevent contract substitution which is often used to force migrants to accept lower wages than promised, although historically, the UAE has been highly resistant to legal reform. Even though migrants represent over 90% of the UAE's labour force, the government has continually passed legislation to restrict granting citizenship to guest workers, even though citizenship has been correlated with increased wages for migrants and Emirati nationals.



Moreover, since Emirati citizenship passed down by the father as opposed to the mother (a policy consistent with other Middle Eastern countries) the government has firmly advocated against interracial marriages between Emirati citizens and guest workers. This is due to a combination of fears regarding a loss of an Emirati cultural identity as well as concerns regarding public services: quite simply, the UAE government wants to be able to prioritise its own citizens and a population explosion of Emirati nationals would make this policy financially unfeasible.



Even though the government has been hesitant to support reforms regarding workers' rights, there is evidence that public opinion amongst UAE nationals is becoming increasingly welcoming to a more liberal outlook. According to a recent survey, 80% of UAE nationals say their country should be more welcoming to immigrants, which is far higher than the global average which has fluctuated around 60%. However, in an authoritarian society where the power lies with policymakers and employers, these opinions are rarely heard. As the UAE government currently debates introducing a separate and restrictive legal code for guest workers, the future for migrants remains uncertain.

Cantonese:

The Exception

Jo Fang WW

In 1982 the Beijing government began to impose Mandarin Chinese - or Putonghua - as the sole official language of China. The policy was an attempt to, in the government's eyes, 'unify' China under a single language to foster patriotic sentiment, weakening regional loyalties in favour of a sense of common identity - especially in areas with prominent independence movements such as Xinjiang and Tibet. The years that followed saw the decline of various Sinitic languages as schools became Mandarin exclusive and radio and television stations censored or banned. Nowadays, fewer than 50% of native born Shanghai residents speak some form of Shanghainese - a member of the Sino-Tibetan language family with an 800 year old history, completely mutually unintelligible with Mandarin Chinese - a marked change from the Shanghainings (locals born and raised in the area) of the past, who were so proud of their language they refused to speak anything else and earned a xenophobic reputation. These Sinitic language groups - Hakka, Gan, Xian, Min, to name just a few - are rightfully called languages, not dialects: they differ in phonology, syntax, vocabulary, lexicon and grammar; a speaker of Mandarin would be unable to understand Hakka, just as a speaker of Hakka would be unable to understand a sentence of Hainanese.



But Cantonese, a variety of Chinese originating from Guangzhou (also known as Canton) and its surrounding area, seems to have become the exception and a survivor amongst the many other Sinitic languages which have fallen to China's Putonghua focused policy. It is currently spoken by more than 60 million people in China, on a par with Italian in the number of native speakers, and despite discouragement on the government's part of the unofficial use of

any form of non standard Chinese, enjoys a higher standing than other Sinitic languages, with its own media and usage in public transportation in Guangdong province. In the province's capital, Guangzhou, China's third largest city, it stands as the first language of half the population, and for many elderly residents, their only tongue.

So why has Cantonese survived the test of a century promoting Putonghua and Putonghua only? A major part of Cantonese's longevity rests in the fact that the language itself forms a huge part of cultural identity for its native speakers, and its particular prominence in Hong Kong, where it remains, alongside English, one of two official languages. For Hong Kongers, speaking Cantonese represents their independence and separate identity from the mainland China government in times of strife as Beijing attempts to tighten its rule over the region. Victor Mair, professor of Chinese language and literature at the University of Pennsylvania, believes that Cantonese in mainland China has been 'tremendously weakened' since the establishment of the People's Republic in 1949 and 'if it weren't for Hong Kong, Cantonese would soon cease to exist as a linguistic force.'

In Hong Kong, then, Cantonese remains strong. The figures and statistics seem to agree. But cross the border into mainland China and the future of the language seems comparably more bleak. In Guangdong, fewer and fewer youngsters are being taught and actively using Cantonese - and in some cases, are decisively shunning their ancestors' native tongue. This is because the government's policies are working. Local heritage is given less prominence in community activities, whilst students are discouraged from using Cantonese in any context and often are unwilling to learn both traditional and simplified characters because they believe that the former is useless for daily life. (In mainland China, Mandarin is written almost exclusively in simplified characters; Cantonese is written using the more complicated and older traditional system.) Cantonese is losing influence on the mainland, partially due to the passing of the peak of the manufacturing boom of the late 1970s, fuelled





by investment from Hong Kong and overseas Chinese, most of them Cantonese speakers. Long gone, too, is Cantonese media's golden age - music, drama, movies - which once commanded huge followings across Asia. In recent years, many home-grown talents who made it big have left Hong Kong and Cantonese behind for greener pastures up north in the mainland. Even when content is produced in Hong Kong, it is usually a cross-border collaboration that has diluted its Cantonese flavour to cater to a wider audience. In 2017, only one Hong Kong movie with Cantonese dialogue debuted on mainland cinema screens.

That is not to say that mainland Cantonese speakers are not digging their heels into the ground. Led by more middle aged and elderly residents of the area who grew up with the language, there remains a movement within Guangdong aiming to preserve its cultural heritage and pass on its traditions. In 2010, a proposal by the Guangzhou People's Political Consultative Conference that Guangzhou Television should broadcast its prime time programmes in Putonghua for the duration of the Asian Games to be held in November of that year, claiming that it would allow visiting athletes and spectators to enjoy the programmes in a more widely understood language, led to thousands of residents on the streets protesting against what they saw as the marginalisation of Cantonese. The proposal was never implemented.

As such, Cantonese speakers remain wary of moves to marginalise their mother tongue. A campaign launched in 2014 by Lao Zhenyu, editor-in-chief of a news and discussion website on Guangzhou lifestyle and culture, aimed to establish an annual 'Cantonese Day' to celebrate aspects of the culture on social media, websites and online forums. Increasingly Cantonese parents are becoming tired of being swamped by the tide of Putonghua, and complain that their children are reluctant to speak their mother tongue, even at home.

The future of Cantonese remains to be seen. Beijing is not aiming at the older, adult demographic - instead it is zoning in on the young, who are the future of the language and without whom Cantonese will not survive - meeting the same fate as other Sinitic languages which have not fared so well. Determination within the Cantonese speaking area to keep the language alive is at odds with decreasing popularity amongst the demographic which will ultimately count the most; whether or not identity will usurp policy is a question that only time can answer.

BANGLADESH

A COUNTRY ON THE VERGE OF DROWNING

Manal Pandey PP

Bangladesh is exceptionally vulnerable to climate change. Its low elevation, high population density and inadequate infrastructure all put the nation in harm's way, along with an economy that is heavily reliant on farming. Bangladesh is a densely populated country with a population of just under 165 million people and a population density of 1116 people/km squared, meaning that it ranks 10th in the world. Bangladesh is also an incredibly low-lying country with the North of the country generally lying no more than 10m above sea level on average, and the plains in the south rising to no higher than sea level. The landmass of Bangladesh that is at dire risk of flooding could increase by as much as 29% for a 2.5 ° C rise in temperature. This means that Bangladesh is a potential impact hotspot of rising sea levels and up to 18 million (the equivalent of the city of Mumbai) people may have to move because of sea level rise by 2020.

The most profound effect that rising sea levels will have on Bangladesh is the negative impact that it will have on its food security. Rising sea levels will mean extreme losses of fertile arable land due to saline water causing soil degradation and thus a reduction in food production. In Bangladesh, 40% of productive land is projected to be lost in the southern region of Bangladesh for a 65cm sea level rise by the year 2080. The production of rice has increased by over 200% since 1971 however 30% of the population is still malnourished. There has been a recent shift in population increase putting strain on the existing food reserves and the methods of agriculture are not efficient and vast enough to supply the ever-growing population.

Yields from rain-fed agriculture could reduce to 50% by 2020 and this will have an adverse effect on food security. In the agriculture sector, which accounts for 20% of the country's GDP and also 50% of the total labour force will be annihilated by rising sea levels which would cause mass unemployment for tens of millions of people and an increase in food price as food scarcity increases. In simple words less people will be able to buy food and more malnourishment will occur as families are forced to go hungry - also leading to increased inequality.



About 20 million people in the coastal areas of Bangladesh are already affected by salinity in drinking water. Rising sea levels could intensify the contamination of groundwater and surface water causing more diarrheal outbreaks and increase the spread of other diseases such as such as pre-eclampsia during pregnancy, acute respiratory infections and skin diseases affecting around 33 million people. In the south of Bangladesh there is a vast mangrove forest that protects the southern region from cyclones - this is now at risk of inundation due to rising sea levels, making the people in southern Bangladesh more vulnerable.

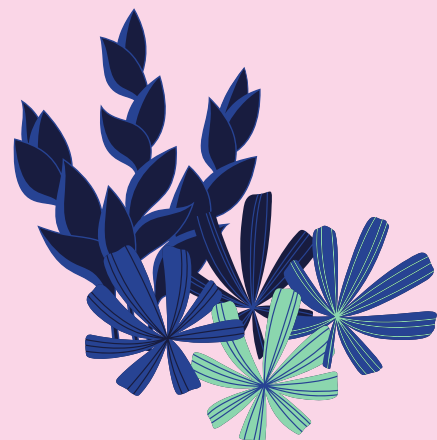
In conclusion there are many factors which contribute to Bangladesh being the 6th most at risk of rising sea levels in the world, with a 3-foot rise in sea level potentially causing 20% of the country to be submerged underwater. The main impact that rising sea levels will have is the damage caused to arable land leading to a reduction in agricultural output and as a product of this decreased food security.

people with access to clean water. As Bangladesh is a very poor country it is likely that it will not have the resources to combat rising sea levels via physical means e.g. flood defences etc... Though Bangladesh had contributed little to the industrial pollution that drives climate change, they will suffer the most from the devastating consequences and it is up to all of us to intervene and attempt to save these low lying countries.

This is the perfect example to prove the sad reality that we live in. The saying 'the rich get richer whilst the poor get poorer' is applicable in this situation. The big three emitters (China, India and the USA) are either developed economies or economies that are booming. They have profited from their colossal industrial and residential sectors which in turn lead to emissions on a sickening scale . Countries like Bangladesh are still developing (stage two of the Demographic Transition Model), and are most likely not going to be given an opportunity to develop further as the country's infrastructure will be ruined, and Bangladesh does not have the resources to rebuild 30% of its country. Bangladesh is doomed to eternal poverty unless those in the position to make changes decide to act.



However, a rise in sea levels will contaminate drinking supplies and decrease the number of



ONE STEP FORWARD, TWO STEPS BACK:

The impact of the Boko Haram insurgency on slowing health reform in Northern Nigeria

HECTOR CROSS RR

On Friday 8th February 2013 in the Kano, the largest city in Nigeria's predominantly Muslim north, a group of gunmen arrived on motorcycles and opened fire on the Hotoro Hayi neighbourhood in the early hours of the morning. However, their targets were not government troops or munitions but local women who were delivering the polio vaccine door-to-door as part of a national immunisation program. These women had taken over the role of vaccinators since, due to the religious conservatism of the region, families were generally more comfortable allowing women inside their homes than men.



For the past 30 years Nigeria's cases of polio, which causes irreversible paralysis within hours, have been steadily decreased thanks to the combined efforts of the government with huge support from NGOs, such as the WHO and the Gates Foundation. Since Boko Haram took control of Northern Nigeria in 2003, they have prevented the vaccination of over 66,000 children in the state of Borno alone. This led to a resurgence of Polio in 2016 when an outbreak occurred for the first time in three years. The impact

of the insurgency on public health concerns is not limited to vaccination programs but also has been seen to effect sanitation, women's health and child malnutrition. Over the course of their occupation, militants have destroyed 788 health facilities and only one third of those remaining are still functional. In Borno state alone 48 health workers have been killed and over 250 injured in attacks by Boko Haram. This has led to many areas being unsafe for foreign health workers and means that these areas suffer from little donor aid funding compared to the rest of Nigeria. This lack of security has also led to high attrition of aid workers, with Borno losing 35% of its doctors to neighbouring states between 2015 and 2017. This catastrophic damage is set to a backdrop of an already weak health system suffering from inadequate health facilities and a lack of experienced medical experts.

The Boko Haram insurgency has led to over 153,000 people fleeing to neighbouring Niger, Chad and Cameroon. However, this is only a fraction of the almost million displaced by the conflict. The majority are internally displaced within camps with no portable water. This has led to diarrhoea frequency rising to 50 cases per week within a population of about 1000 residents and outbreaks of treatable ailments such as measles and cholera have occurred due to a lack of proper vaccination programs and treatment facilities. In fact, outbreaks of diseases cannot be confirmed by health workers on the ground due to a lack of proper laboratory facilities to validate samples. Boko Haram's literal meaning is "Western education is sin" and the Sharia law imposed by the insurgency leads to a lack of proper health education and provision, particularly for women. There are currently no facilities within either official or unofficial camps for pregnant women. This means births are riskier and all maternal deaths recorded in one camp (Adamawa) were due to excessive bleeding, a cause easily preventable with the correct modern medical facilities and a qualified health worker.

Perhaps the most long-lasting secondary effect of the insurgency on public health in Nigeria is on child malnutrition. A study measured the weight for height (WHZ) coefficients of different groups of children within North-Eastern Nigeria, where 72% of mothers and 60% of fathers have no formal education. Wealth made only marginal difference, but they found that children whose mothers had received no formal education scored 0.13 lower in their WHZ than those who did. These results showed how the conflict had a marked effect on the health of children and more crucially the key link between a lack of education for women and infant malnutrition.

This study also examined the effects of probability of a child wasting. This is when a child has a low weight for its height and is a good index of mortality for children under the age of five. They found that if those who were exposed to the Boko Haram insurgency had not been exposed then their chances of wasting would have decreased thirteen percentage points. Food insecurity in these areas of conflict is caused by many factors but the insurgency has seen weaker harvest yields and so reduced food stocks for the dry season leading to mass shortages. Mass movement of internal refugees has also disrupted transportation flows and a lack of information means food is not distributed equally or efficiently.

The current health crisis in Northern Nigeria requires immediate attention and intervention from both local governments and NGOs. The damage to health facilities and security in the region has set back crucial health programmes such as Polio vaccinations. The erosion of women's rights to education has reduced women's knowledge of safe health practices and led to deaths at childbirth with easily preventable causes.

EXTINCTION REBELLION HEROES OR VILLAINS?

James Ellis BB

The month of October saw 2 weeks of protest by the environmental campaign group Extinction Rebellion, a decentralised movement calling for action against the Earth's 'global warming emergency'. Their 3 demands are:

1. The government must declare a 'climate emergency'.
2. The UK must legally commit to reducing carbon emissions to net zero by 2025.
3. A Citizen's assembly must be formed to 'oversee the changes.'

Their tactics mainly consist of non-violent protests, disruption to everyday life and civil disobedience. However, the protests saw a lot of backlash, especially by everyday Londoners and the media, thus posing the question - is Extinction Rebellion doing more harm than good in pushing the wider climate movement further?

When examining this question, it's certainly hard to ignore the fact that Extinction Rebellion (XR) has antagonised and disrupted people in their day to day life, irrespective of their views on climate change.

The growing tension came to a head at Canning Town tube station where protesters were dragged off the top of a train and then assaulted, after delaying commuters in the morning rush hour (ironically people then had to get into their cars to get to work).

The waste on police resources, which are already strained as it is, must also be noted - £16M was spent on policing the earlier April protests and the cost for the October ones will be even higher.

The unrealistic nature of XR's aims is also certainly an obvious fault of the movement. To achieve net zero carbon emissions by 2025 would require a complete overhaul in how everyone leads their lives: e.g. changes would have to be made to our diets (no meat), a massive reduction in air travel, unaffordable heating and electricity, not to mention the impact this would have on British industry and jobs.

The idea of a Citizen's assembly which would advise the government on climate policy sounds promising in theory but would be near impossible to implement in practice. Who would organise it? Who would sit on the assembly and how would they be appointed? How would it be funded? These problems of implementation are exacerbated by the lack of centralised leadership within the movement, leading to an absence of cohesive aims and voices.



XR defends its lack of clear solutions to the problem of climate change by saying it's raising publicity about the issue and pushing it up the agenda- the movement has certainly been successful in this regard, with massive coverage by the press and TV. However, the vast majority of people are already aware of the climate issue. What we don't know is what to do about it, and this is where XR falls short. Instead of advocating for net zero carbon emissions by 2025, surely the way forward is through political action - "laws, codes, taxes, incentives and policies that mesh with peoples' lives and needs".

The anti-Capitalist sentiment which has been propagated by some of XR's 'leaders' is also concerning- according to its handbook 'This is not a drill', the "climate crisis and the associated crises of capitalism and colonialism that caused it, will not be solved by gradual reform and rotten compromise". This issue is an environmental one and should not be used as a front to promote an eco-socialist agenda.

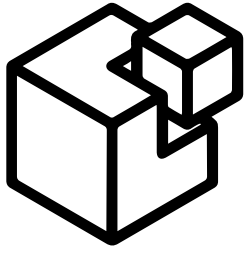
It's easy to see that the general motive driving the movement is a good one - climate change and its potential effects on human life, biodiversity and the environment must be acknowledged. In addition, sometimes the price we have to pay as a society for democracy is disruption and inconvenience- everyone is for the right to protest until it disrupts their lives. However, the predictions of mass starvation and even human extinction in the near future are not based on evidence and scientific proof and come across as merely fear mongering and rampant exaggeration by XR, which no one can sympathise with.

When we look back in the decades to come at the impact that Extinction Rebellion had today, it is likely that we will view the movement in a more favourable light- after all history tends to favour action, not inaction.



XR has also become a part of Britain's long history of civil movements, for example the Suffragettes, many of which were not popular at the time. Having said that, the action that XR is taking could actually be harming the wider climate movement in a world where the effects of climate change must be approached in a pragmatic fashion.





salt

THE RISE OF VENICE

OLIVER ELLIS LL

How the production and control of salt contributed to the emergence of the Republic of Venice

During the heyday of the Roman Empire, Venice was merely a cluster of villas on sandbars, or lidi, acting as tourist resorts for wealthy Romans. Additionally, these lidi contained a saltworks, with infrastructure set up for salt extraction and transport to Rome. The invasion of Germanic tribes to the mainland in the sixth century saw many locals flee to these lidi to preserve their independence.



SALT EVAPORATION PONDS - ONE OF THE OLDEST EXTRACTION METHODS THAT IS STILL USED TODAY

The main product of this town grew to be salt, traded for goods with the mainland and sold to merchants from other nations. This salt trade grew to be fairly dominant in the region, due to the importance of salt in many industries other than as a table ornament. Cassiodorus, a Roman monastic scholar, wrote, "Upon your industry all other products depend for, although there may be someone who does not seek gold, there never yet lived the man who does not desire salt."

Venice, located just 50km north of the mouth of the river Po, was a main salt supplier for industries along the Po river valley region, then the most agriculturally productive region of northern Italy. Venetian salt was an integral ingredient in the now world-famous Parmigiano-Reggiano cheese, the wheels of which are soaked in brine baths for nearly a month before being aged in a dry room for a year. Salt was and is still used nearby in the production of Prosciutto di Parma, which is sliced and dried from a salted ham.

The regional salt trade was challenged by other local producers, such as the saltworks at Cervia, 130km down the coast. Partly to expand salt production, the Venetians carried out landfill works in the salty marshes near the mainland, extending the coastline roughly out to where it is today. After a series of floods and storms severely impacted salt production and therefore dominance in the salt trade, Venice realized that the buying and selling of salt was more lucrative than producing it.

THE SALT ADMINISTRATION

This change in stance to the salt trade led to the founding of the salt administration, a bureaucratic body dealing solely with the trade, control, and taxation of salt. The introduction of salt subsidies in 1281 had a dramatic effect on Venetian relevance in maritime trade. Venice effectively paid merchants to sell salt to the city-state, meaning that these merchants could afford to underprice their competitors when trading other goods, and could afford to travel farther afield in pursuit of valuable commodities from the Eastern Mediterranean. The income gained by the Venetian government from selling this salt proved invaluable for use in other areas – for example during a poor grain season in mainland Italy, Venice could afford to corner the grain market with its surplus income. With a subsidized salt

trade, Venice became a very attractive trading partner for salt merchants, and much more lucrative than trading with smaller towns and other cities. As a result, Venice became the principal source of salt for much of the northern Mediterranean, and as such was able to monopolize the market and impose single-supplier contracts on clients.

The vast merchant fleet employed by the Venetians was mobilized as a reserve naval force in the fifteenth century, enabling Venice to exert even harsher controls on the saltworks that supplied its network. This control was exerted to the degree that when money was needed in Venice in the late thirteenth century, all saltworks on the island of Crete were destroyed, in order to raise the market price. The thalassocracy resulting from this use of naval power remained intact until the 18th century, when new trade routes to the Americas from Atlantic ports reduced the importance of Mediterranean trade.

The salt administration and Venetian trade policy in the late Middle Ages were undoubtedly some of the most formative factors in Venice's emergence as a power before and during the Renaissance period. The global geopolitical impacts of the salt trade and its uses are linked with the rise and prosperity of many civilizations, from ancient Chinese dynasties to the Gauls.

NORTHWEST PASSAGE

BEN ANDREYEV, WW

*JUST A SIGN OF THE TIMES,
OR A SIGNAL THAT WE
MUST DO MORE TO TACKLE
CLIMATE CHANGE?*

A famed sea route linking the Pacific and Atlantic oceans, the Northwest passage has provided intrigue and captivation to many explorers since the fifteenth century.

Many fated journeys, such as that made by Sir John Franklin in 1845, have ended in great tragedy. Sir John's voyage to cross this passageway ended in the sinking of both ships and cannibalism; a gnarly way to go. Thick, year-round sea ice, as well as treacherous weather and sea conditions, have previously gained the Northwest Passage a reputation of being impassable. Success in traversing the crossing only came in 1906, with Norwegian Roald Amundsen navigating the Passageway.

On one hand, the economic benefits of an ice-free Northwest Passage seems lucrative. The passageway has garnered interest from global shipping companies and governments, as it has the potential to cut journey times between east Asia, Europe and the US east coast by weeks, compared to using the Panama Canal.

However, the thick sea ice has meant there have only been a handful of successful crossings since 1906, making the passageway commercially unviable.

In summer 2007, though, the route was entirely ice-free for the first time in recorded history. Climate change has reduced Arctic ice by 12.85% per decade over the last 40 years, and the melting of the arctic ice caps will have disastrous, global, consequences. This provides a lucrative opportunity to exploit the passageway and would provide the Canadian government with \$Billions in fees and charges for using the passageway. Furthermore, by reducing journey times, overall emissions from an e.g. East Asia to East Coast North America route would be reduced, making the transportation of goods more environmentally friendly.



Moreover, a US Geological Survey (USGS) has found that nearly one-quarter of the earth's undiscovered, recoverable petroleum resources lie in the arctic region: 13% of the oil; 30% of the natural gas; and 20% of the liquefied natural gas. More than 80 percent of these are thought to be offshore. The value of this finding cannot be understated. Canada would be able to make vast sums from the exploitation of these resources, which could be used to solve domestic issues - such as the country's' high homelessness rates - or utilised in better connect rural indigenous communities with supplies and resources that allow them to keep them functional and alive.

However, the environmental damage that increased shipping through the northwest passage would cause, as well as the rapidly melting ice, is highly significant and should not be ignored. In a new study, published in the 'Proceedings of the National Academy of Sciences', scientists have found that 42 out of 80 subpopulations of seven species that live in the Arctic are at risk from regular September shipping through the Northwest Passage. They concluded that the data-poor, rapidly changing and fragile marine ecosystem of the northwest passage needs to be urgently protected until more can be understanding about the region and potential effects on biodiversity can be fully understood. Narwhals, walruses and bowhead and beluga whales are deemed species most susceptible to go into decline if shipping ramps up.

Furthermore, the fact that ice is melting at such a rapid rate should be an alarming wake-up call to all citizens of the earth. Although it won't cause sea level rise (think ice cube in a cup of water), it will lead to the eradication of further species such as the Polar bear, which relies on the ice for survival and habitat.



So, should we protect our environment and climate, thus protecting the arctic ice cover, or should we invest into the Northwest Passage as a global change for good - helping drive economic development through improved trade links, as well as allow us access to potential untapped natural resources, such as oil, which are believed to be stored beneath the fast-melting ice? Since 1906, there have been 314 crossings of this passageway, 77 of which (roughly 25%) have been in the last 3 years; Professor Peter Wadhams, from the University of Cambridge, has speculated that the trend in ice coverage decline will mean that an ice-free Northwest Passageway will become the norm during future summers. We must, therefore, act sooner rather than later, in order to protect vulnerable ecosystems and species, as well as slow down ice melt, in order to preserve our planet for generations to come.



AN INTERVIEW WITH MR STOCKDALE

Ahead of Mr Stockdale's departure for greener pastures, Jo Fang WW and William Yu GG sat down with the man himself to discuss all things geography, Westminster, and geography at Westminster....

Tell us how you ended up at Westminster.

After secondary school I studied Geography at St. Catherine's, Oxford. Not much is closed off with a Geography degree apart from Medicine and Law so I was a bit indulgent and took two years off to travel around the world. Then I worked for a few carbon offsetting start-ups that failed...

Finally I went to Deloitte Consulting and tried my hand at the world of business. I wasn't very good at it but the final thing I got to do was go to the 2016 Olympic Games in Rio, working in operational planning and logistics. Then the job at Westminster came up. I went through the whole interview process and I don't think Mr Derham was very convinced by me... he gave me a minute to convince him that it was going to work. Clearly something went right in that minute because here I am!

If you hadn't decided to teach, where do you think you'd be?

If I hadn't decided to teach I'd probably be quite sad, haha. Jokes aside, I would have stayed with the British Olympic Association because they offered me a job. But I didn't really see it as a long-term prospect - there's a lot of boring admin and, looking at what's happening globally right now with COVID-19, I think they're probably not doing very much this year.

What's been the best trip?

As a geography teacher I am ashamed to say I'd never been to Iceland. So I went in 2017 with quite a few other teachers on Lower School Expeditions. The students seemed to really value it. We saw glaciers, loads of waterfalls... as a geographer there's loads of physical geography happening in one place and our guide was fantastic; she took us to places that most tourists didn't see. But I enjoyed all my trips in different ways. In my first month I went on a cycling trip to Belgium which was interesting because half the boys couldn't even ride a bike! That was a steep learning curve.



Fig 1: The man, the myth, the legend

What's your favourite year group to teach?

It's difficult to say... I think all different year groups have their good bits, and I definitely enjoy the range. The one that probably feels the most enjoyable is the sixth form because there's no exam constraint at the end and everybody's chosen to study it. We have a real ability to go off topic and explore things in detail.

If you were to give 3 reasons to study geography, what would they be?

Number one: we can answer the big questions. Geography synthesises well – from climate change and sustainability to political problems, to the impact of history on space.

Number two: it cuts across all other academic subjects – science, maths, economics, history... it's rare to find a subject that looks at things from all angles.

Number three: enjoyment! The point of geography isn't to just read about it in a room. It allows you to understand what's going on when you move around and travel. It gets you to look around and consider what's happening and why.



Fig 2: A more sophisticated look

Do you have any advice for our future geographers?

I think you need a deep understanding of climate change. We do a bit in GCSE and A-level, but not to the extent that you need. What geographers can do well is be the middle-man – translate difficult science into policy and action. Geographers can act as translators between differing elements. We're good at lots of things, but not an expert in one specific thing – which is a strength of the subject rather than a limitation.

Time for some lighter questions now... favourite item on the school menu?

Oh, that's easy. Anything with chocolate, but not white chocolate, that doesn't count. And chicken and ribs day because you can pile up pretty high and get quantity.

“

ANYTHING WITH CHOCOLATE

David Attenborough or Hans Rosling?

Definitely David. He's just a legend. He's been around my whole life and he's still going.

Would you rather go vegan or never fly anywhere ever again?

Never fly anywhere. The vegan agenda is not mine.

Physical or human geography?

Human. But you do need both!

Do you have any book recommendations?

I'll be honest with you... with two small children I haven't been reading much as of late. I'm currently reading quite a heavy but fascinating book called 'The Making of the English Landscape' by Nicholas Crane. He charts the history of 15,000 years of how the UK landscape has changed over time. It's definitely not a beach read though! Also, The Colonial Present by Derek Gregory, a commentary on neo-colonialism and countries involvement in conflicts in the early 2000s as another form of colonial power.

How has the department changed whilst you've been here?

We've all had children in the same year so that's quite a big change! Otherwise I wouldn't say it's changed much. We're a good cohesive unit and work well together. I'd say our relationships have only improved. I've tried to introduce more technology like GIS which we're building through fifth form all the way up to the upper school. I'm quite proud of mechanising the department.

What are you going to miss most about being here?

I think it will be the challenge that all the students give every week. I was quite nervous coming in having never taught before. But actually I've really enjoyed it. Most weeks I will get a question where I'll think, 'That's an amazing question, I've got no idea.' I can do my best to fluff it but sometimes I just say, 'I don't know, let's find out.' The pure academic inquiry that you can't teach someone really comes out in Geography because it's such a broad subject. I did my teacher training at various schools and there's nowhere else where that comes so naturally to students. That will be the biggest change for me.

And finally, do you have any regrets?

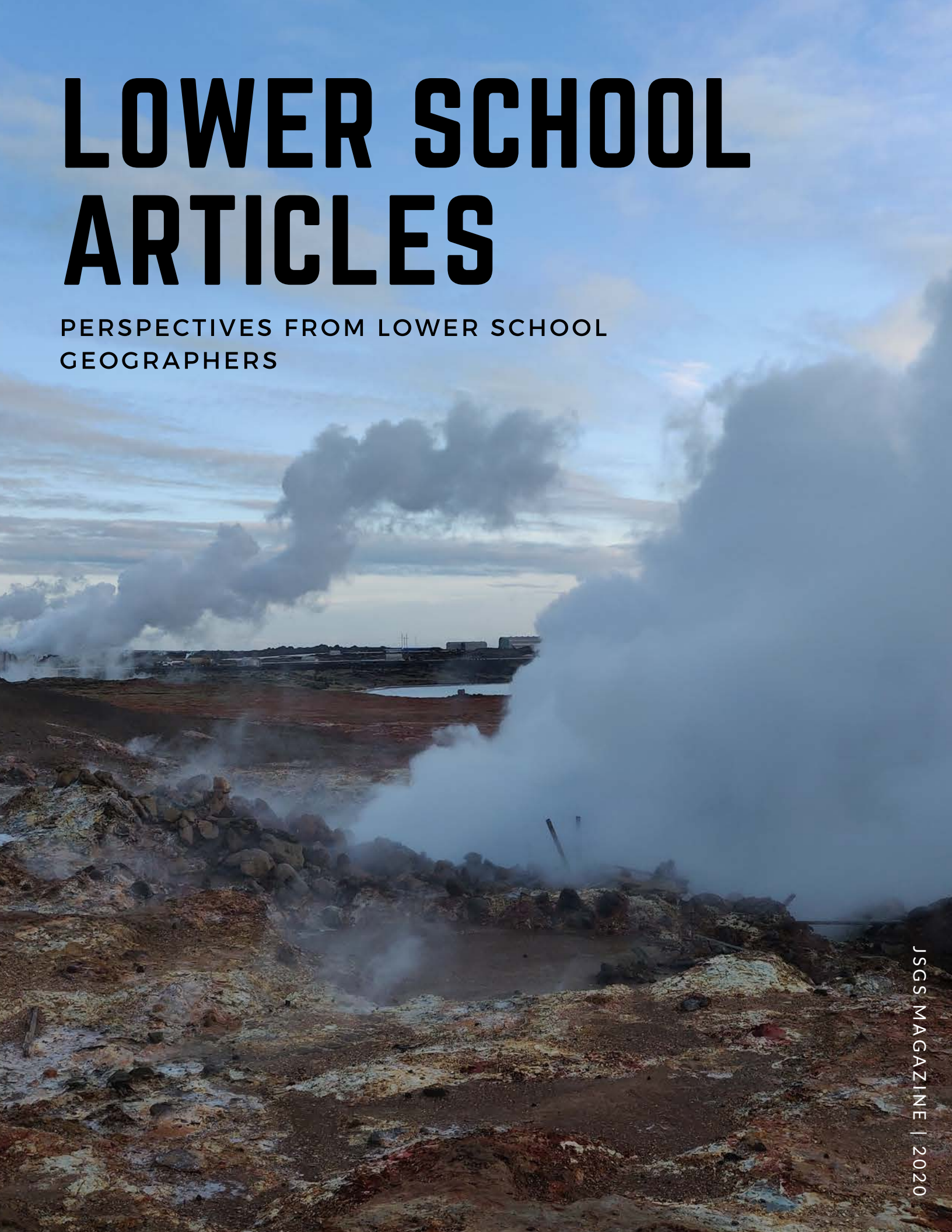
No, I don't think so. I'm not really the kind of person who has regrets; I don't think that's conducive to a good life.

Thank you very much Mr Stockdale! We will miss you lots.

Thank you very much! Some hard questions there...

LOWER SCHOOL ARTICLES

PERSPECTIVES FROM LOWER SCHOOL
GEOGRAPHERS





THE GEOGRAPHY OF



Kaden Prahan WW
Akarsh Shankar GG

Red Dead Redemption II - the critically acclaimed Western video-game that made \$725,000,000 in three days, the best-selling video-game in its first week; 31,000,000 copies sold to this date.

There is no better word for it than a phenomenon - one that has touched the hearts and minds of gamers worldwide. RDR II has revolutionised the video-game industry, immersing the player completely in the life of the protagonist, Arthur Morgan, and while it does have violence, this is balanced subtly with developed characters, nuanced feelings, historical context ... and of course, a colossal amount of complex Geography.

PHYSICAL GEOGRAPHY

The world of Red Dead Redemption II has been painstakingly crafted to be geographically accurate, providing a scaled down snapshot of geographical diversity in the US as a whole. In this section we will consider different examples of geographical processes and how they are represented in the world of RDR II.



2. SOIL TYPES

The south-east of the in-game map is a representation of the south-east of the USA, with its bayous and equivalent of New Orleans, and similarly a distinct soil can be found, also seen primarily in the south-east of the US. This striking soil type (right) is known as Ultisol or red clay soil, an often fairly acidic soil with an abundance of iron, oxidising to form the iron oxide that gives it its red colour. This is derived from crystalline igneous rock, and often develops in a warm temperate climate, acknowledged in the game as this region ranges from 20-40 degrees during the day. They retain nutrients well, therefore the addition of lime or fertiliser allows it to be cultivated as shown in the image, supporting agriculture like the large tobacco industry in Rhodes, an area touched on in the next section of the article.



1. COASTS

This insight into the diverse physical geography of the game begins at the coast, at sea-level, branching out to various different locations in the world. This coast is sandy, as it is found in a sheltered bay in which low-energy constructive waves deposit sediment onto the shore.



3. RIVERS

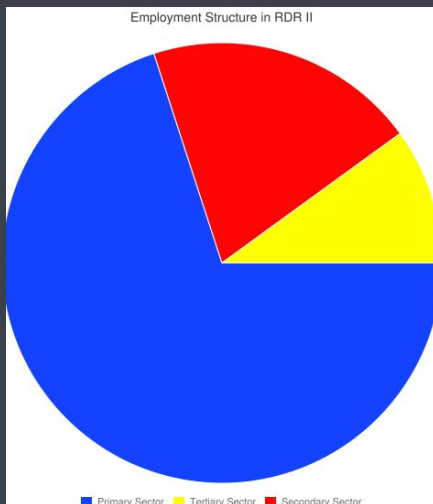
The Dakota River is one of the several rivers that opened out into the coast we observed before, and we can follow that upstream to observe other geographical processes. In its lower course, the river is clearly wider and the terrain flatter as it approaches sea level. Meanders can also be seen, created by the relatively faster flow of water on the outside of the river, resulting in more erosion on one side, creating more pronounced turns. Upstream, the river is narrower due to the more dramatic terrain and mountainous relief causing erosion to be more difficult.

HUMAN GEOGRAPHY

As well as a vastly complex Physical Geography, Red Dead Redemption II also contains a well-developed Human Geography (the interplay between societal and economical factors of the world). A working and varied Economy as well as an interesting Society with the various issues inherent to it add to the game's playability. Both these aspects will be explored here.

1. THE ECONOMY

Throughout the world in RDR II, one can see people going about their daily work. However, the method of making money varies considerably in different regions, affected by physical factors such as the climate and the availability of various raw materials. Most of the employment in the world of RDR II is contained within the Primary Sector – that is, the obtention of raw materials from the natural world. Some employment falls into the Secondary Sector, the manufacturing of products. There is some Tertiary employment, but it is limited and considered specialised; you may find only one “General Store” in a whole region, for example.

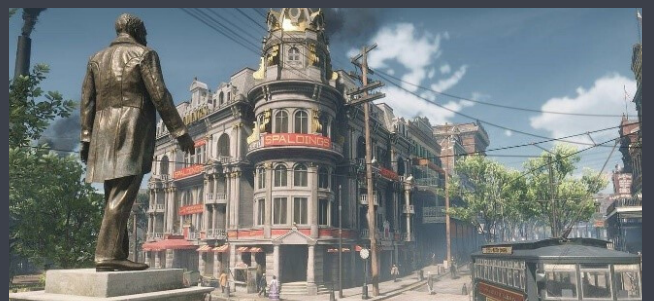


One example is the Strawberry region, in the North-West, which resembles an area around the Rockies in its abundance of pine trees, woodland and mountainous relief. Due to an abundance of coniferous forest in that area, the predominant industry is logging, like at the Appleseed Timber Company (below).



2. SOCIETY

In the America of RDR II, the world is changing. Outlaws like Arthur Morgan, the player's identity, are no longer welcome in a rapidly developing and industrialising country. However, development is significantly slower in some places than others, and this leads to a very stark Inequality gap. In order to examine this hierarchy, we will contrast the settlements of Rhodes and Saint Denis. The two areas are extremely close, barely a 10-minute horse ride from one to the other. However, they are radically different places. Rhodes is a backwater town, and Saint Denis is a large, developed city.



CONCLUSION

The world of Red Dead Redemption II is like no other. It has achieved a realism which other games have not even come close to. The Physical Geography of the world is strikingly beautiful, as those regions were (and still are) in real life. As for the Human Geography, the functioning Economy and the contextually precise Society can be interacted with by the player, leading them on a journey to discover the rifts which lie at a troubled West's soul. The developers use complex and accurate Geography as a tool to make the player spend more time in the game, so they can appreciate the nuances of the world, and this is a huge step forwards in the industry.

In our exploration of the world, we discovered so much more than we thought we would. We now encourage you to do the same, and we hope this helps you look differently at the potential videogames have to be an incredibly rich and detailed form of art.





FORMULA 1

Joseph Stern CC

Countries follow different sports to one another, and while there are some global sports, there are very few global sports championships. Formula 1 is the exception, having raced in all continents but for Antarctica. While Formula 1 hasn't actually touched most of the world, it has spread fascinatingly from its inception in western Europe, and geo-politics has dictated how.

The Formula 1 World Championship was created in 1950, hosting its first race in Silverstone, UK, in the June of that year. The first 10 years of the sport's existence saw races primarily held in western Europe, although races were also held in Argentina, the home nation of Juan Manuel Fangio who won half the championships that decade, and in Morocco, which is near to Europe and had a history of motorsport due to it being a former Spanish colony. Expansion was to continue slowly in the 1960s, with a new South African grand prix and the first of many grands prix in the United States. At this point, motor racing was still very much European, but anywhere else that had the money to pay for a race track to be built in could have a race held there.

The trend continued into the 1970s, with new races in Canada, Brazil, and a first visit to Asia: Japan. All of the countries hosting races had, up

until that point, had histories of motor racing that stretched back to before the Second World War, often due to them being former colonies, but Japan was a new market for motor racing. Its first race came in 1978, which was a year of great change for the sport as Bernie Ecclestone took control of it, staging a coup and selling off its TV rights. This was transformative, and suddenly almost every race was broadcast live on TV, even to countries that had never hosted motor racing events before. The new audience gained was keen to see Formula 1 in person, and so the 1980s saw huge expansion: new races in Australia, and for the first time behind the Iron Curtain in Hungary in 1986, which was incredibly well attended: expansion was financially a great success.

Japan's motor industry had thrived even before Formula 1 had staged a race there, and the Fuji circuit which hosted the nation's first race had been running popular motorsport events for over a decade before.

So the 1999 Malaysian Grand Prix was groundbreaking: a country that had no history of hosting or even watching motorsport had commissioned a circuit to be built and had hosted a grand prix. And it was a success: it made money for the organisers and the sport.

More races in similar countries followed: Bahrain, China, Singapore, South Korea, India... The list of new host nations goes on and on, but the trend is clear: they're all Asian, and they're all either powerful nations, or ones with rich governments, looking to cover over a poor human rights record with sport - Bahrain and the UAE in particular, and this continues into other sports: the Qatar football World Cup and Formula e's Ad Diriyah e-prix in Saudi Arabia share that same aim of making them look hospitable and just countries and attracting tourists. This torrent of new Asian hosts doesn't seem to be slowing either: Vietnam was set to host its first race in April 2020.

The only country with even close to enough money and a large enough population is South Africa, who seem to have no intention of hosting another race.

It seems likely, then, that the current economic circumstances mean that there won't be another revolution in host nations: Africa seems to be the final continent to target, but the conditions there just aren't right for hosting a race. The Covid-19 pandemic will leave very few nations with enough money to organise new grands prix, so it seems like the geographical spread of Formula 1 could stop, for now at least.



But there's one place that is notably absent from the Formula 1 calendar still: Africa. There hasn't been a race on that continent since 1993. What's stopping races being hosted there? It certainly isn't the heat: Formula 1 has raced in the near 100% humidity of Singapore and the 40 degree heat of Bahrain, and races can always be held after dark, so nowhere is the weather too harsh for Formula 1 - Bahrain even sees the desert sands glued to the ground to stop them coming on track. No, it's the economic development of the continent. There are some countries with higher per capita GDPs, but these tend to be just too small to viably host a race, such as Equatorial Guinea, the Seychelles or Gabon.

One thing is for certain: it will be impossible for the sport to abandon not just Europe, but Asia now as well.

WATER MANAGEMENT IN *SINGAPORE*

SAM LUI RR

Singapore is an island nation with no natural potable water resources. With a population of 5.5 million residents and a large amount of tourism, Singapore consumes 400 million gallons of water daily. Moreover, as the population increases, the demand will also increase and is projected to double by 2060. Singapore has implemented a very successful scheme to reduce water consumption, obtain potable water for the people, and ensure sustainability/water security for the future. This is run and managed by a government organisation, PUB (public utilities board).

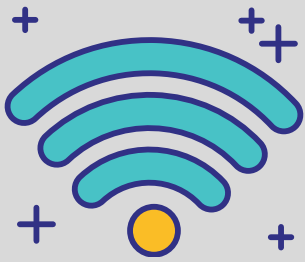
Reducing the amount of water consumed is very important as it means that PUB doesn't have to invest as much into production. Between 2000 and 2018, the number of litres consumed per person per day has decreased from 165 to 141 and the goal is to reduce it to 130 by 2030. In Singapore, the children are educated and there is a water museum where they can go to learn about how they can save water and why it is important. Hopefully, this will mean that they will spend less water running their own household. There is a sense of collective responsibility and awareness in the nation towards conserving water. In Singapore, people take shorter showers, plug the sink when washing vegetables and use the water elsewhere as well. Moreover PUB has also implemented a half-flush on toilets (half flush uses 3 litres while in the UK a flush uses 14), efficient shower heads and sink heads (a standard showerhead uses 25 litres/minute while an efficient one uses 7 litres per minute). PUB's initiatives and the hard work of the citizens have all contributed to lowering the water consumption.

Singapore has four "national taps" for water. The first one is imported water. Singapore has a water deal with Malaysia signed in 1962 and expiring in 2061 which allows Singapore to withdraw up to 250 million gallons of water/day from the Johor river. Currently, imported water provides for around 20% of the nation's needs. This number is based on demands and the production from other sources and Singapore will usually extract less than half of the allowed amount. The percentage of water which is imported will likely drop in the future as Singapore is trying to become more self-sufficient.

The second national tap is water from the local catchments. The government has dug and blocked off a series of rivers, reservoirs and underground water storages that can collect rain from two-thirds of the island. These catchments provide for around 10% of the water needs. These areas of water act as recreational sites and parks. When needed, the water is treated so that it is a good enough quality and then distributed. While it is sustainable as PUB have found a way to store the rainfall, if the climate changes and the island becomes drier, the supply from the catchments might decrease. Thus, PUB doesn't rely too much on the catchments and instead rely upon securer resources. Moreover, investing in catchments doesn't have as much potential as there is only so much rain and only so much of Singapore in which water can be stored.

The third tap is desalination. Currently, Singapore has two desalination plants with two more expected to be completed in 2020. These plants currently provide around 30% of the nation's water needs. Efficiency is always sought after, and PUB is trying to reduce to energy requirements from 3.5kWh/metre cubed to 1kWh/metre cubed. They are doing this by making the current method (reverse osmosis) more efficient as well as researching other methods such as electro-deionisation. When the two desalination plants are completed, the percentage of water that Singapore gets from desalination will increase.





DATA CENTRES

Ivan Solomakhin LL

Data centres are buildings used to house computer systems and their related components such as telecommunications and storage systems. These centres play a major role in the function of the internet as well as any other industry that uses a network such as: telecommunications, health, entertainment, transport and banking. Although theoretically a data centre could be built anywhere in the world with a power supply and connectivity, its geographical location will have large implications for the quality of service that the centre can provide. The largest data centre in Europe is located in a small village in Norway, whilst the European country with the most internet users is Germany. Why is this the case?

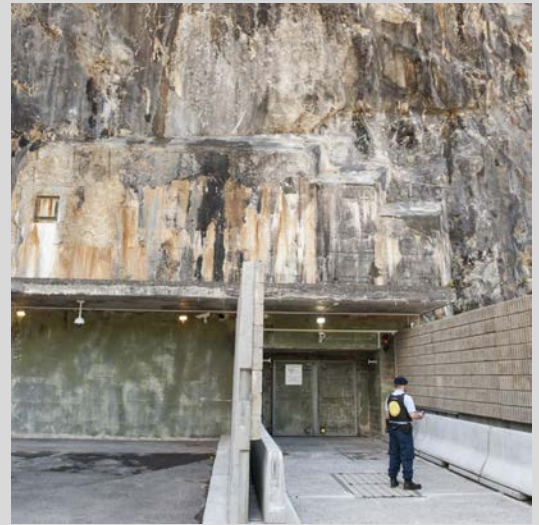
One of the most important considerations for deciding the optimum location of a data centre is the availability of renewable energy in the area. These centres consume huge amounts of energy and the companies providing them are under increasing pressure to make them as environmentally friendly as possible. As a result countries like Iceland, Norway and Sweden with 85%, 98% 56% renewable energy as a proportion of all that is generated respectively, already have quite a lot of centres and this number is only looking to increase in the future. Renewable energy is also quite a lot cheaper than other sources which can make these centres cheaper to run.

Furthermore the climate and natural features of a location can help reduce the energy usage in a data centre. Data centres consume 1% of all of the world's energy and a substantial proportion of this is spent cooling down the computers and other equipment in use. In recent years many interesting methods have been used to lower the amount of energy



spent cooling these systems. The Covilhã centre in Portugal uses outdoor air to cool its computers 99% of the time whilst a centre in Hamina, Finland uses cold sea water to keep its system at a good temperature.

In certain cases the layout of an area can be an important consideration in choosing the location of a centre. For instance the Mount10 “Swiss Fort Knox” data bunker is located in the Alps.

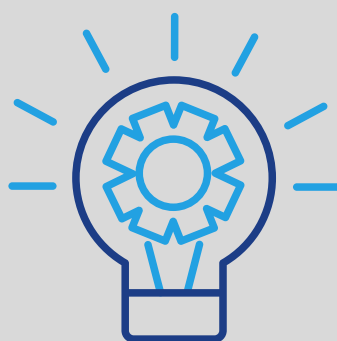


The Swiss Fort Knox data bunker

This data centre is designed for maximum security, housing sensitive information that needs to be protected. The bunker itself is situated inside of a pyramidal peak, meaning unauthorised access would be very difficult due to the steep nature of the terrain.

However perhaps the most crucial factor is the connectivity of the area. Continents are connected to each other through submarine cables stretching huge distances under oceans. If the area where the data centre is on doesn't have such a connection it can gain access to, the centre will not be able to function.

Data centres are a crucial part of infrastructure that will only become more important in the future. Although putting a collection of data closer to where it needs to be accessed will improve performance, as included in detail: there are very important geographic factors that must also be considered to decide where best to locate such a centre.





THE GREAT PACIFIC GARBAGE PATCH

Boris Balzini AAH

The Great Pacific Garbage Patch is a concentration of marine debris, located in the North Pacific Gyre in between Hawaii and California. It covers around 1.6 million square kilometres. It is composed of around 1.8 trillion pieces of plastic, adding up to around 200 pieces for every person on the planet and weighs around 80,000 tonnes. Marine debris is waste that ends up in oceans or seas through littering or

pollution, which can then come together through strong currents to form so-called "garbage patches" such as this. The bigger the garbage patches become, the larger the force of the pull of their vortex is and the easier it is for new waste to join them.

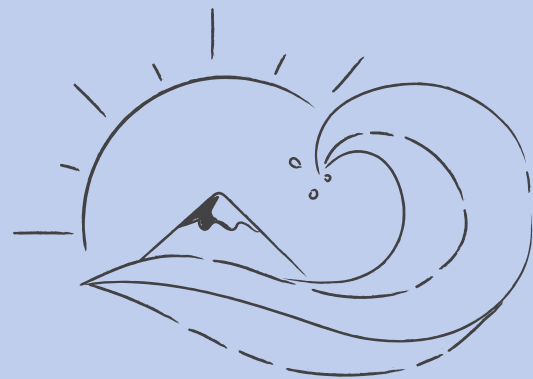
The reason why the Great Pacific Garbage Patch is constantly growing is that most of the plastics are not biodegradable; they are simply broken down into smaller and smaller pieces. Plastic objects have been found floating in it that had been manufactured decades ago, and they are unlikely to ever escape. The phrase itself - "The Great Pacific Garbage Patch" - invokes a vision of a mound of garbage floating on the surface of the ocean. In reality, these patches are largely made up of microplastics - tiny, microscopic pieces degraded from larger plastics, or tiny beads of plastic, named microbeads, that are used in self-care products such as toothpastes and shampoos. They are invisible to the naked eye, and even a satellite cannot detect or see the Great Pacific Garbage Patch - the microbeads



can, at most, make the sea look cloudy and frothy. It has also been recently discovered that these plastics are not only polluting the surface of the ocean, but also the sea floor. The study showed that about 70% of the plastic actually sinks to the bottom of the ocean. Another study conducted by Japanese scientists found that for all the turtles that enter the area, roughly three quarters of their diet will become plastic debris and microbeads. The plastics pose a threat for turtles, seagulls and sea lions. Turtles mistake plastic bags for jellyfish, which is their favourite meal, seagulls think that microbeads are fish eggs and bring them to their nests for their offspring to eat, and their offspring then usually die from poisoning or ruptured organs, and sea lions become caught in the fishing nets and therefore die from starvation.



A project started in late October 2018 to try and clean up 50% of the entire Great Pacific Garbage Patch. The plan was to use a boom of more than 500 metres in length to sweep up all the waste and collect it before moving on to the other garbage patches in the ocean. The new non-profit organisation that kick-started the campaign is called "The Ocean Cleanup", and it raised more than 30 million dollars from crowdfunding and Silicon Valley entrepreneurs.





TITAN

Sandro Levi MM



Titan is the largest of Saturn's moons and has sparked particular interest due to its similarities to Earth, especially being the only other body in the solar system, to have bodies of liquids on its surface. Titan in fact is believed to have a methane cycle, closely related to the water cycle on Earth. This has resulted in methane lakes, rivers and rain to form on Titan. The Huygens probe which landed on Titan discovered evidence of erosion and potential rivers on the surface, further indicating a cycle of methane occurring on Titan, similar to the water cycle on Earth.

Titan is affected by seasons cause by Saturn's orbit around the Sun. Saturn takes 29.5 Earth years to orbit and so these seasonal changes are very slow and gradual by Earth's standards. However since they are so long the changes that will result will be far more major than on Earth, but we have not properly observed a full cycle of its seasons and so we do not yet understand the full extent of the changes. Due to Saturn's eccentric orbit, the summers on Titan's Southern hemisphere are shorter but warmer than the Northern hemisphere's, resulting in more lakes to form in the Northern hemisphere.

The average surface temperature on Titan is around 90.6K (-179.6.6 °C) which allows the methane and ethane in the atmosphere to condense and form these lakes, rainfall and clouds. In 2006 the Cassini probe observed cloud cover, over 2400km in diameter, on top of Titan's North pole mainly composed of methane and ethane. This is the strongest piece of evidence for Titan's methane cycle and several theories have arisen from these findings such as one which states that it could possibly be raining, or even snowing, on top of Titan's North pole. Clouds have also been found around the Southern pole and some events have been observed which caused the cloud cover to increase very rapidly from 1% of Titan's disk to 8%. One hypothesis states that the clouds were caused by increased levels of sunlight from the summer which led to convection. When the seasons switch again it is expected that it will the ethane in the clouds will condense and begin to 'rain' on the South Pole. Another theory states that if there is liquid rain on Titan, it will be the only other body in the solar system to have rainbows, though due to Titan's atmosphere, they will only be visible in infrared.



CRYPTOCURRENCIES

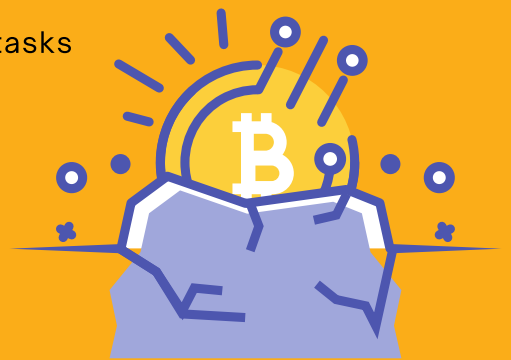
Thomas Finch LL

By the end of 2017, only eight years since its founding, Bitcoin miners reached \$53 million of generated revenue and bitcoins were priced at nearly \$20 000 per coin. Cryptocurrency such as Bitcoin can be “mined” by the use of a computer to solve puzzles and complicated tasks, the results of which are stored in a vast public database known as a blockchain. The more tasks you complete and the faster you complete them, the more you earn. The idea of making thousands from simply letting your computer run in the background seemed too good to be true for many people and cryptocurrency mining soon took off to lead to the incredible revenue generated by miners across the world. As more miners were trying to get their hands on Bitcoin, the puzzles that needed to be solved grew harder, creating competition which led to the need for more powerful computers and so more energy expenditure.

Cryptocurrency mining soon required specialist hardware, extremely fast internet, and a good location where many tasks were available. The cost of these soon outweighed the meagre earnings of an everyday machine, with cryptocurrency mining being profitable to very few.

The hardware required for mining was such that it could cost the miner up to \$9000 in energy to mine one bitcoin. This expenditure of electricity and energy, which reached 2.55 gigawatts used through Bitcoin mining in 2018, creates environmental effects. Many cryptocurrency

mines are fuelled by non-renewable energy resources such as in Mongolia where nearly all cryptocurrency mines are fuelled by coal. This has led to enormous amounts of CO2 emissions from mining. Over 30 months between 2016 and 2018, between three to thirteen million tonnes of CO2 was produced as a result of Bitcoin mining alone. To put this into perspective, the amount of CO2 produced is approximately the same as the amount one million cars would produce over the same time period.



Cryptocurrency has the ability to make a real impact on the global economy because of its unique qualities which traditional currencies don't have. Cryptocurrency is extremely secure, since it is only stored digitally and is also secure against fraud as the currency is decentralized and transactions are held in real-time. Cryptocurrency has a higher level of anonymity than other standard currencies and there is no need for one to connect any personal information to a digital wallet, whereas normal banks often take information such as personal details and financial histories. As popularity for cryptocurrency increases, it is being accepted more and more as a legitimate method of payment and, as more miners are turning towards renewable energy sources, such as wind and solar, in the future, cryptocurrencies will only grow further.

ZOO GEOGRAPHY

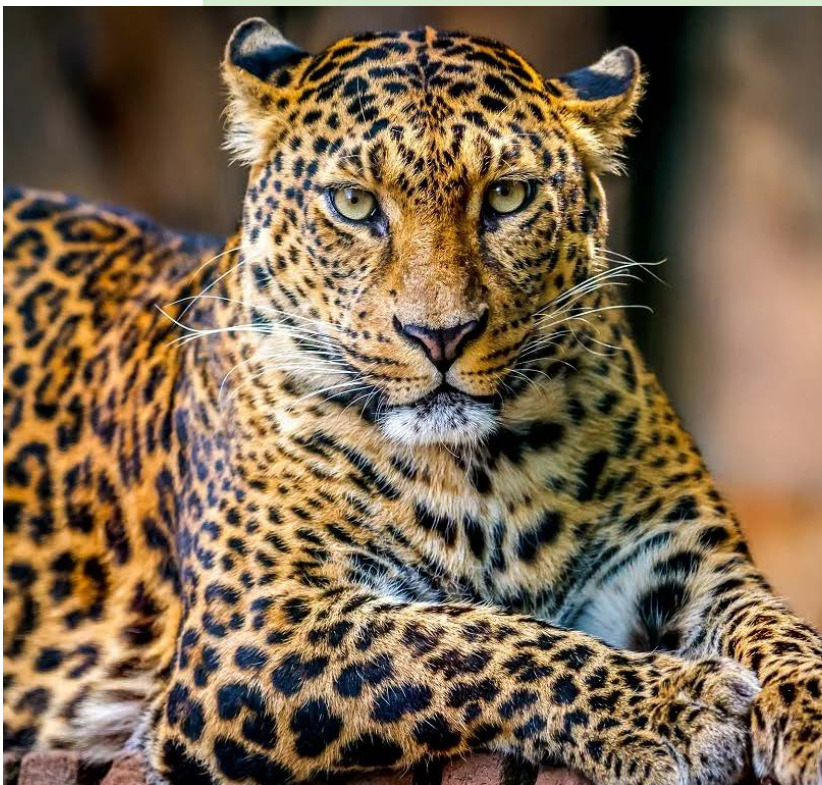
LOUIS SUMMERS CC

Zoogeography is the study of the movements of animal species around the globe. Generally, species will stay in the same place over long periods of time, their ranges not deviating as a result of changes in climate, tectonic activity or other causes. However, occasionally, a species expands its range by migrating into a different area, often with a similar climate.

For a sexually reproducing species to colonise a new area, at least two individuals of that species need to move into the new region. This allows reproduction in the area if

possible and means that the population can expand and the genetic diversity of that species in the area can expand more effectively. A good example of Zoogeography is the Leopard. Previously present in Europe and Japan, the leopard, despite going extinct in those areas, established itself in others. For example, when Sri Lanka and India were still connected, leopards walked over into the island country, but as they separated, the leopards on the island became more and more distinct from the Indian leopard and became their own subspecies, displaying distinct characteristics, having adapted to the subtly different climate and environment of Sri Lanka. The same happened in Java.

An example of a species that has colonised new areas with astonishing speed is the Cattle egret. In 1933, a small group of Cattle egrets flew over the Atlantic Ocean from Africa to South America. They settled in South America, a first for their species, which had never before been spotted in the Americas, and began to breed, since the climate was quite similar to in Western Africa. Soon, more egrets flew over, bolstering the gene pool



until they began to move through the continent, out of the corner of North-Eastern Brazil they were, for the moment, confined to. By 1943, they had exited Brazil and colonised Guyana and Suriname. 8 years later, they were flying over the Panama Canal into North America, while another group turned South through Colombia and over the Andes. By 1970, they had reached Canada and the southernmost point of South America. This immensely sped up colonisation was unheard of before then, but now is becoming more common as humankind shapes the world more and more.



Previously, it ranged over almost all of Ecuador, but due to the deadly Chytridiomycosis fungus, their numbers reduced until they were declared extinct in 1995. Recently, they were rediscovered and bred intensively.

In conclusion, Zoogeography is an intriguing science in the sense that it can be beneficial or horrific to a species' chances of survival. It is constantly fluctuating in all sorts of manners and a lot of data is required to accurately assess its impact.



Other species do the opposite; their range shrinks. Most of the time this is due to human activity but occasionally, species become gravely endangered for a reason other than our interferences. For example, the Rio Pescado stubfoot toad is critically endangered, and its range has been reduced to an area the size of Suffolk.



THE GEOGRAPHY AND POLITICS BEHIND CHINA'S MOST SUCCESSFUL CITY



Yixuan Gao LL

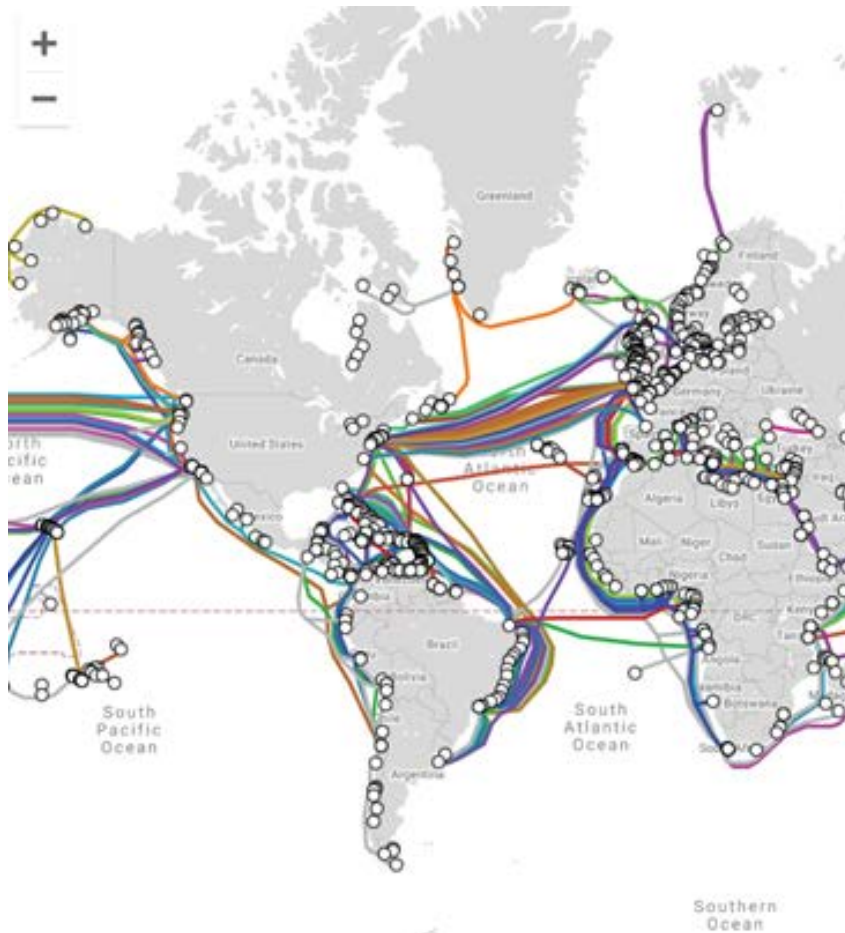
The place is quite a sight to behold. With its skyscrapers and waterfront occupying Huangpu, a tributary of the Yangtze river, it has become China's financial and entertainment hub, having grown and developed to greater heights in comparison to that of Beijing, its once most significant city. Shanghai's population has grown at a rate of about 10 percent per annum for the last twenty years, mainly through immigration from smaller, less opportunistic cities – now forming the megacity that is home to roughly 23.5 million people.

Originally, in the era of the Silk Road and trade between the early Oriental people living in Asia, Shanghai was not considered to be very important (if it even existed), while cities such as Beijing and Nanjing were monuments to the Empire itself. After centuries, even millennia later, in the 19th century, it was at most considered a fishing village and market town situated on the coast, far away from what was widely considered the focal point of Imperial China. However, after the first Opium War in 1840, the Western powers forced China to open access to five of its coastal cities, Shanghai included. As a result, due to Shanghai now being open to international trade and the establishment of foreign concessions, the city started to grow at a rapid pace. Shanghai's complete access to mainland China due to its position on the global stage has also had significant impact upon its growth, as since the 1960s, it was transformed into an industrial centre of China, as due to the massive manpower in the manufacturing industry in some less developed cities, these newly manufactured products could be exported en masse via Shanghai to other global ports in the West.

Another massive development was in the early 1990s, under the rule of the more economically liberal Deng Xiaoping, which allowed Shanghai, 'the head of the dragon', to turn towards a workforce based more primarily in the tertiary and quaternary sectors, with a move into finance becoming central to China's resurgence in trade and investment. The city became a lure to the then highly educated fraction of China's large workforce, making Shanghai a major, if not ideal destination for corporate headquarters due to its potential for growth, acceleratingly vast economy, and location as a coastal city open to international trade. Shanghai also became the first 'Free-Trade Zone' in mainland China, allowing it to exercise trading and financial power that was usually restricted by China's rather opaque government after the era of Deng Xiaoping, who in effect brought economic reform to a China once plagued by a lack of development compared to the increasingly wealthy Western powers.

On top of this, Shanghai has also become a tourist hub due to its plethora of skyscrapers across the riverfront and also partially due to a good dose of hot weather, its overseas tourist count reaching 8.73 million in 2017, not to mention the number of domestic tourists, roughly 35 times the amount of the ones overseas. The city has grown to be perceived as a giant on the global stage due to its advantageous geographical location, resources, and workforce, but maybe a greater transparency in China's political affairs could attract more overseas multinational corporations – which might help in increasing demand and gracing international standing.





UNDERSEA INTERNET CABLES

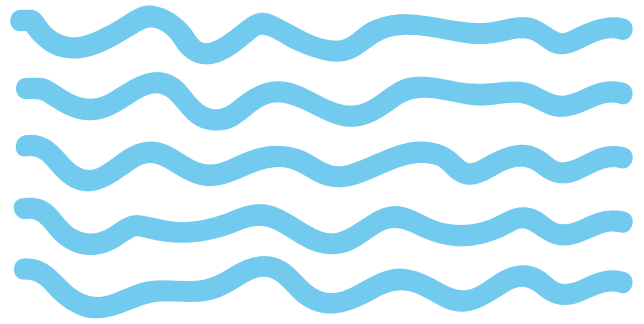
Henry Williamson AAH

Despite many people thinking about internet as being in 'The Cloud', 99% of all international internet traffic goes through 420 under sea internet cables which stretch a total of 1,270,000 kilometres, rather than being sent by satellite communication which is very slow, its reliability being subject to atmospheric conditions. They form the backbone of the internet and connect countries across oceans and seas and it is very likely when streaming videos that information will have travelled through one of these cables. Their importance was highlighted on 30 March 2016 when 10 African countries were left offline for two whole days due to an internet cable being cut by a lone fishing trawler,

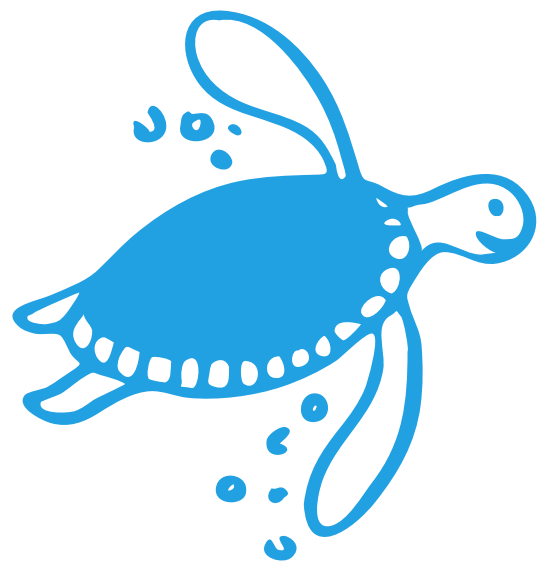
showing the dependence of the world's internet infrastructure on the undersea cables. The method of data transmission is using Fibre optic which uses specialised glass with an increased refractive index. The fibres are coated in petroleum jelly in order to lubricate the fibre optic cables so water cannot affect it. Then there is copper tubing, used to supply electricity to the amplifiers which are placed at every 50 miles of cabling and to boost the light signal so that data does not get lost. Then there are many layers for protection which may include a polycarbonate layer, an aluminium water barrier, thick stranded steel wires, mylar tape and a tar coating. The first cable was built in 1858 from Ireland to Newfou-

ndland. This was built so that the UK could send orders to the Canadian commanders in a matter of minutes rather than days, saving £50,000. The cable was built after US navy officer Lt. Matthew Maury had finished some depth soundings in the Atlantic which was carried out by dragging a weight across the ocean floor. His findings revealed a 2000 mile sedimented plateau which avoided the extreme depths that made cable laying impossible.

These cables are usually owned by private companies, usually consortiums and telecom companies who provide funding. However it is now increasingly large corporations that provide internet services. Companies like Google, Facebook, Microsoft and Amazon have started laying down their own cutting edge cables. For example, the Merea cable, which is owned and funded by Microsoft, connects Virginia beach in the US to Bilbao Spain and is capable of sending 160 terabits per second, the equivalent to streaming 71,000,000 HD videos at the same time. Cables can extend out to many different countries which is how that one cable in Africa lead to so many being without internet. However, especially between more developed countries, there are many different cables which data can go through so it is nearly impossible for a country like England to go offline.



Shorter routes reduce latency, so many cables go through shortcuts, such as the Bab-El-Manded strait between Djibouti and Yemen and through Egypt so that traffic from Asia can go to the Mediterranean sea and to European countries. There are also many cables in regions with many islands, for example near Puerto Rico or islands around Papua New Guinea; this is because each different island needs a connection, although the speeds they can support are small compared to those between the US and Europe.



How the Earth Forges Nations

Rafael
Leon-Villapalos
GG



From the first cities of Mesopotamia to the interconnected world of today, human civilisations and nations have always relied on the Earth to determine the shape of countries, in the forms of climate, boundaries, and resources.

The climate of a region has and will always determine how a nation's culture and people develop. The Gulf Stream brings warm, tropical water currents to Western but not Eastern Europe, meaning Russia has very few ice-free ports and driving its expansion in the Ukraine and the Caucasus, with many believing the Indian Ocean was the long-term goal when Afghanistan was invaded. The Near East was the area where civilisation first began because of the water and mineral deposits brought by rivers such as the

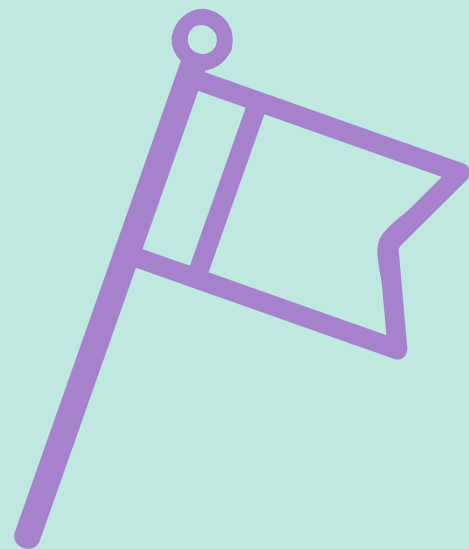
Tigris and Nile, meaning the ground was fertile for wheat, barley and lentils, enabling cities such as Babylon (which at its height was home to 100,000) to be fed and thus focus on the development of technology and expansion. The Late Antique Little Ice Age, caused by volcanic eruptions, meant crop failures occurred in the Byzantine Empire, the Slavs were forced to migrate from the inhospitable steppes and rain increased in Arabia, meaning the Arab armies could be supplied with crops adequately and the conquests of Islam could take place.

Boundaries such as rivers and mountains, or lack thereof, can also shape nations. In more modern times, Russia's expansionist tendencies in Eastern Europe can be explained by the Northern

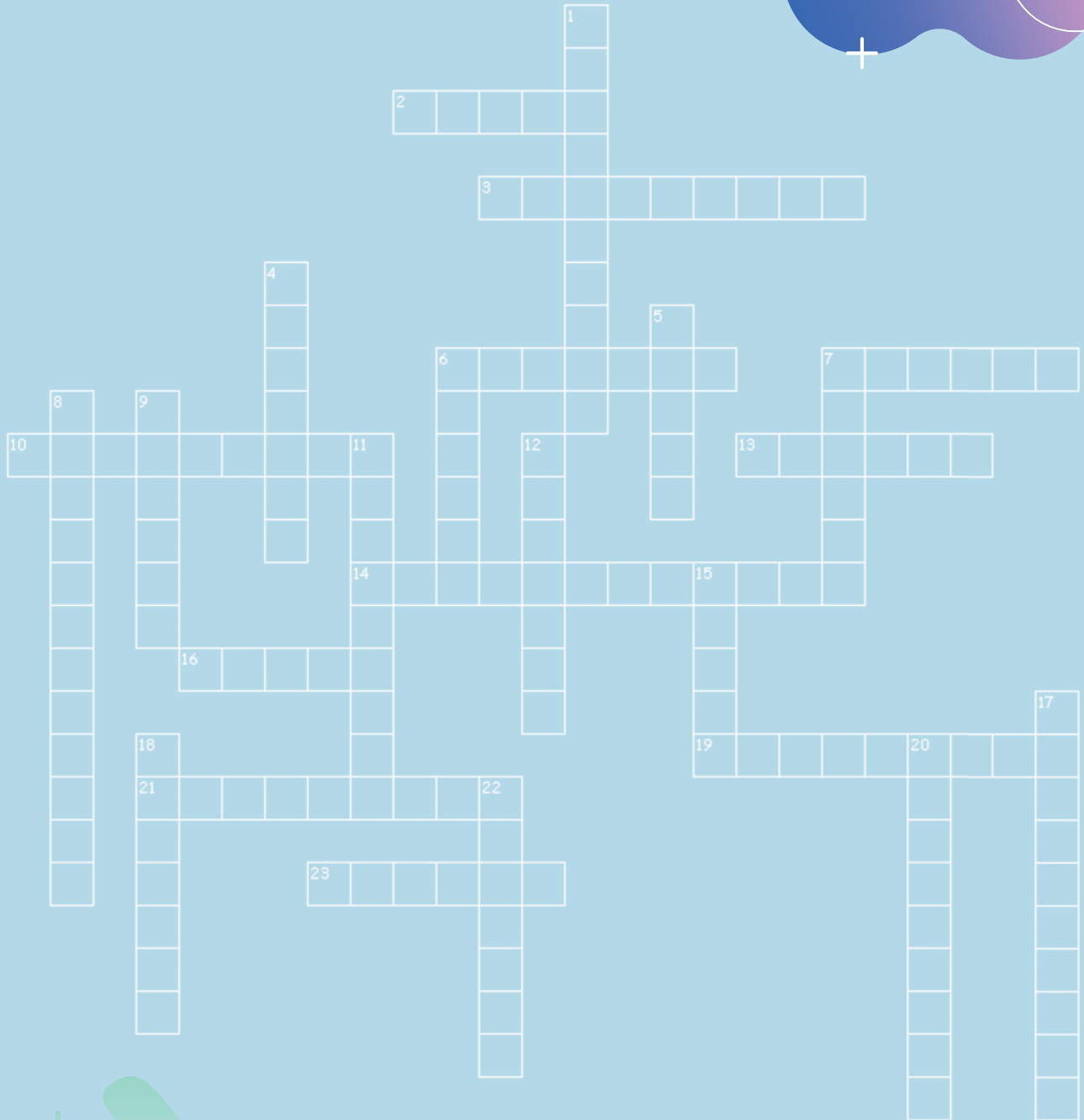
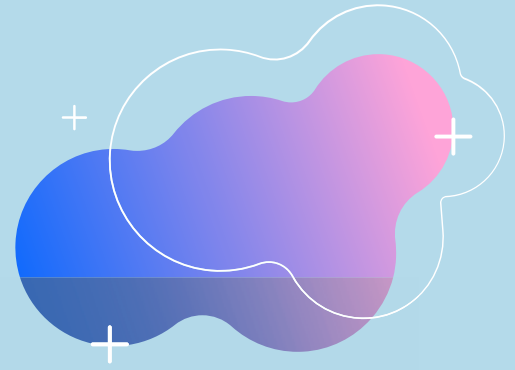


European Plain, the depression following the Alps and Carpathians, providing an ideal route for an invading army, meaning early Muscovy expanded westward to control this region to secure its geopolitical security and eastward to have the Ural Mountains (formed by volcanic uprisings) as a buffer to the steppe nomads who harassed it. In Europe, the large numbers of mountain ranges and rivers, such as the Alps and the Danube, meant populations were divided into smaller areas and cultures were confined to these lands, creating the modern multinational patchwork. By contrast, the lack of mountains and desert until Tibet and the Gobi meant the Han people could expand freely from their river valleys and spread their culture and language, leading to the vast Chinese state of today.

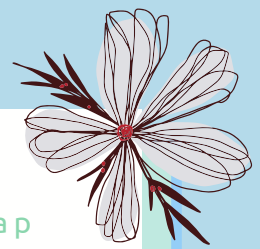
China has also been affected by natural resources; for example, the 1950 invasion of Tibet was driven by the need for control of the water of the Yangtze and other rivers due to its vast population, meaning it wanted to control their sources in the Himalayas. This also caused the recent standoff between India and China due to Indian desire for control of the Ganges and Brahmaputra. The African plate pushing up against the Eurasian Plate also created the protected harbours of the Northern Mediterranean, meaning fleets were developed that could colonise other territories and ushering in colonialism. France and Germany have also gone to war over Alsace-Lorraine because of its deposits of iron and coal, necessary for the industrialised, military nations.



Crossword



Handpicked questions across physical and human geogrpahy topics. Enjoy!!

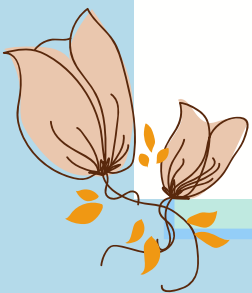


Across:

2. name for mixture of lava and water from melted ice cap on mountains
3. world's largest island
6. US city with highest murder rate
7. country with highest GDP per capita according to the World Bank in 2018
10. another name for a tropical cyclone
13. city with largest foreign-born population
14. a major type of plate margin.
16. country with the highest life expectancy
19. what forms after the neck is broken after a storm and Kit's favourite landform
21. country where the deadliest earthquake of this century took place
23. country with the lowest national GDP

Down:

1. of risk is the awareness of the local population of the hazards relating to a natural event.
2. name for mixture of lava and water from melted ice cap on mountains
4. the state of the tectonic plates before the continents drifted apart.
5. country with lowest HDI in 2018
6. country with the most islands
7. layer stuck between crust and core
8. what 'S' in the SDG stands for
9. country with largest latitude span counting only contiguous landmass
11. is the point on the Earth's surface directly above the point where an earthquake or an originates.
12. rock is one of the three main rock types, the others being sedimentary and metamorphic
15. city with the largest population
17. weathering another name for physical weathering
18. one of the most common scales used for magnitudes of earthquakes
20. country with largest export relative to GDP ratio
22. city with the largest airport by passenger volume



REFLECTIONS

MAX PEEL ON CORONAVIRUS
MANAL PANDEY ON ONLINE SCHOOL
HOW ARTICLES
THE PRESIDENT'S FINAL ADDRESS



COVID-19

Max Peel RR

The Covid-19 pandemic has reshaped the world socially, politically, financially and culturally. What began as a mysterious pneumonia-like illness in the Hubei province of China has spread - two to three people at a time - across 212 countries and territories. As I sit here writing this article at home continuing to live through the experience of lockdown and worldwide pandemic, Covid-19 has now afflicted 10 million people with over 500,000 reported fatalities. Sadly, these figures will continue to worsen and are likely to be far higher upon the publishing of this magazine. The countries worst affected by this pandemic are the United States, Brazil, Russia, India and the United Kingdom, all in different locations of the globe and all with clearly different levels of socioeconomic and political development. No place seems immune, but some cities and locations have appeared more vulnerable to its devastating impacts.



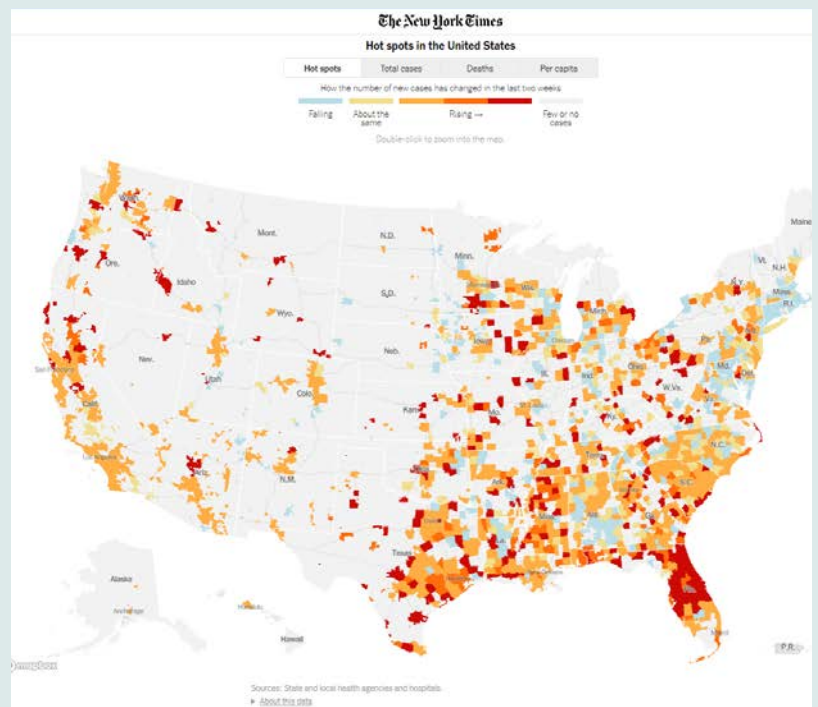
In trying to understand the factors which have contributed to the virus spread, a chorus of commentators examining the trajectory of the virus have quickly jumped on population density as the root cause for the virus spread. As with the September 11 terrorist attacks and the 2008/09

financial crisis, many have seen the virus as a catalyst for a mass migration away from populous urban centres effectively finishing the back-to-the-city movement of the past 25 years. Population density is certainly a factor within this pandemic, as it has been with all pandemics in the past. However, it is important to recognise that density is just one of a number of key factors that determine how vulnerable places are to the virus. Across the world, Covid-19 has continued to spread and hit hard tourist centres such as the Swiss alps, care homes, megacities like London and New York as well as

industrial zones such as Northern Italy and Detroit. All of these zones differ massively along many dimensions including population, size, age, education, affluence, social capital and much more. All of these factors may affect their vulnerability to the novel coronavirus.

Many of these factors are continuing to be analysed and will continue to be analysed over the coming weeks, months and years by epidemiologists aiming to determine the root causes of the spread of Covid-19 and unfortunately at the moment data on the spread of the virus continues to remain patchy due to a limited number of sample cities and variations in testing patterns. With this being said key trends have emerged across the United States that are critical to note.

In regard to the Covid-19 death rate, large urban counties in the United States unsurprisingly top the list, falling off by degree of density from their high-density suburbs down to rural areas. However, it is important to note that while cases and deaths have so far been lower in rural America, the rate of spread is increasing and is roughly the same level as urban areas. The virus has notably hit rural recreation hardest.



These are places have a high degree of natural amenities — lake and waterfronts, beautiful countryside, or ski slopes — that lure lots of wealthy travellers and tourists. Such places include Eagle and Pitkin counties in Colorado; Summit County, Utah; and Blaine County, Idaho. Wood River Valley, a community of just 22,000 people in the heart of Idaho's ski country, had 192 cases and 2 deaths earlier this week, with a greater share of its population testing positive than New York City. These counties suffer from a rate of coronavirus cases roughly 2.5 times greater than other rural counties. This makes sense as these key tourist destinations often have high turnovers of visitors and good transport links. Thus, there is an increased likelihood of the spread of the virus

into and within these counties.

There has also been a large amount of evidence to suggest that Covid-19 spread and deaths across the US are strongly correlated with proportion of elderly residents within a given area, larger shares of minorities as well as colder, wetter climates. Even in regard to density, there is a huge variation between wealthy dense areas, where people can shelter in place and work remotely, and poor dense places, which push people out onto the streets, into stores and onto crowded transit. This is of stark note in New York City. Covid-19 hit hardest not the incredibly population dense Manhattan but the less-dense outer boroughs such as Bronx, Queens and even Staten Island. The density which is most damaging to the spread of such infectious diseases is where residents are crammed together in multifamily, multigenerational households with frontline service workers. This was of particular note during the Spanish Flu Pandemic that ravaged the working-class neighbourhoods of the industrial centres of Pittsburgh and Philadelphia.

It's also been theorised that tighter social bonds and civic capital have made certain cities more vulnerable than others. For example, low levels of childlessness have been proposed as to why San Francisco, the second population-densest place in the US after New York City, has had more success in flattening its curve. With fewer children per capita, a higher rate of remote workers who can shelter in place, and one of the highest rates of educational attainment in the U.S., the city may have a list of factors that made it more resilient than Detroit, New Orleans or even New York, which are far more diverse across class and demographic lines.



The true extent of the nature of the Geography of coronavirus remains to be seen with the clearer picture likely to only emerge months or even years after the end of the pandemic. The nature of this virus is complex and its spread is likely to mirror this with factors varying across the globe.

GEOGRAPHY: OUR ONLINE EXPERIENCE

Manal Pandey PP



Class 6B2/GY - working hard or hardly working?

Being sat in our homes, alone staring at a screen was a dramatic change from the chaotic and energetic class dynamic that we were so used to in rooms 62 and 63. However the geography department did their best to make sure that the experience closely mirrored the one that we received in school. In classic geography style, the teachers got their heads down and we ploughed through work on arid environments and development like it was no man's business.

We always looked forward to every lesson in which we could expect new things such as: Manal attempting to wear a new hat for every lesson of the term, or Mr. Wurr's appropriate backgrounds showing an extraordinary array of different desert features. The online experience also bore a treat in store – the return of Ms. Hughes. Perhaps the biggest surprise was not the new baby in her house, but the fabulous gamer headset that rested on her head. Mr. Stockdale did not let lockdown get in the way of his incredibly interesting tangents and we spent many a lesson discussing certain political issues or just generally catching up (something we will dearly miss as his talent is poached by Abingdon.)

We had some very interesting JSGS talks, such as the 'Cod Wars' starring Oliver Ellis which was very well attended with around 30 participants. We look forward to the day when we can come back together and congregate in Sutcliffe's, but we are incredibly impressed with the way that the geography department has dealt with the situation and are proud to be a part of the best department in school.

THE GEOGRAPHY OF HISTORY

GABRIEL ALLASON (WW 2014-18)

A mistake often made when writing history is to take elements at face value – whether they be actions, spoken words or accounts of the event in question. Whilst most of these shortfalls are avoided in scholarly writing, there is one element that is still neglected even by professional historians: geography.

It is clear that there are complex interactions between the human and physical sides of the modern world, whether that be the control of physical borders which hinders human migration, or the growth of human settlements which damages the local ecosystem and wider environment. It would be a mistake to simplify the past and think such factors were not as prevalent then as they are now. The case to be made is especially clear in historical moments where environment and humankind were in conflict with one another.

Take the colonisation of America, for instance. Focusing on how settlements in North America developed reveals a fascinating interplay between human forces and the world around them. The European colonisers planned large, uniform towns – such as New Haven, Connecticut (see Figure 1) – often constructing a grid structure straight over the land. By contrast, native Algonquian peoples were far more mobile, moving and living within the environment. Whilst Europeans and their descendants traversed the Colonies along main roads, Natives (and increasingly the enslaved population) travelled through the woods and across fields. There were two landscapes here – those who felt they were in control and those who wanted to escape that control.

Such interaction was not confined solely to where these peoples lived but how they lived too. Native religious culture was fed by a close engagement with the natural world – Algonquians understood that they only survived by killing (whether that be animals or harvesting crops) so theirs was a relationship of humility with the environment. By contrast the rationalist Christianity favoured by the English was based squarely on exploitation of the land – God had provided the Earth for human use. In fact, historian James Deetz argues that there was inherent tension between ordered capitalist society and the untamed wilderness of Georgian America – many colonists set out to claim and conform the environment to their liking.

It is evident that at this moment in history there were at least two landscapes for at least two peoples, with a fluidity of influence between them all. Whilst the world around them may not have played the single greatest role in the lives of colonists, it had done so for the native peoples of North America. Indeed, the cultural changes following European settlement – natives were increasingly forced to settle and cultivate the land to hold onto it – is arguably one of the most under-represented impacts of colonisation. In essence, to deny the presence of geography in history is to deny the role the world around us has played in our lives.

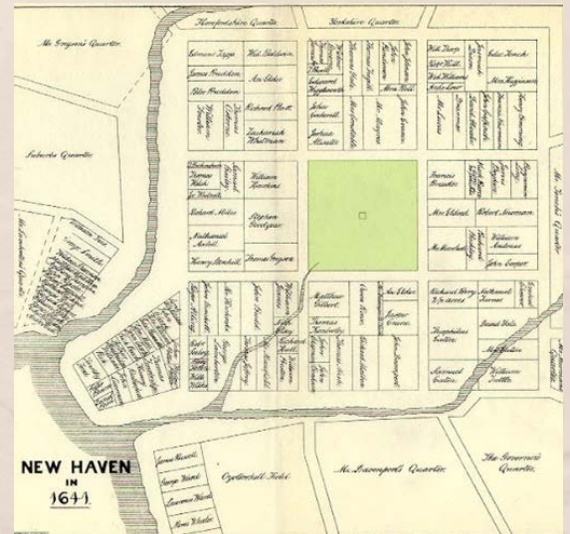


Fig.1 The grid layout of New Haven, Connecticut

FINAL ADDRESS

Skyler Lu RR



Being the President of the JSGS is an interesting job to say the least. As the longest-serving President yet, there is a great sense of accomplishment. Designing aesthetically-pleasing posters, telling friends to come to talks, and rushing out of Grant's Dining Room at 1305 with a rocky road in hand have become essential parts of my daily life. The most rewarding part of the work is to see great interactions between different opinions during talks. I am always appalled at myself for not considering problems carefully enough after hearing fantastic



Skyler (right)

points from others. The most memorable event throughout the whole two years was probably the Mapping Westminster activity we held in yard back in One World Week. I had a really fun time and it was just wonderful to see many people chatting with friends and enjoying themselves there.

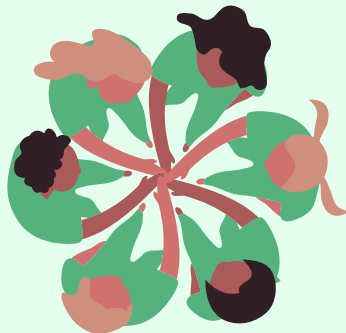
There are also nerve-wrecking bits of being the President. The scariest part of the job for me is by far the introduction of the speaker before a talk. Despite my usual speech rate similar to a sports car, I completely lose my ability of speech just before I go up to introduce the speaker. I have mispronounced a dozen names throughout the two years, but I am conquering my fear slowly. Of course, I did not do all the work by myself. The support of my fellow classmates and the teachers are vital to the running of the society, and I would like to thank them for all their hard work.

Geography is a subject that has always shown great possibilities, even in the current uncertainty. Geographical Information Systems, or GIS, is something that I have been exploring in the past few months. It is a fantastic way to present and handle data. It allows the presenter to explore data in a great variety of ways and to establish the relationship between groups of data.

It is a great way to visualize data such as COVID-19 cases and their geographical distribution, and it can be a huge contributor to the 'Track and Trace' system, used to trace the close contacts of confirmed cases and limit the spread while avoiding mass quarantine. GIS also allows us to explore abstract concepts, such as racial inequality, by plotting maps with the percentage of African-Americans within New Orleans neighbourhoods and their respective level of evacuation during Hurricane Katrina.

In a boarder sense, the current pandemic has also opened up new territories of research for geographers. In a demographic perspective, it would be interesting to follow up on the level of fertility in this strange time when there is huge uncertainty but everybody stays at home. The relationship between the weather and climate and spread of the pandemic can also be further investigated, with data indicating that Latin America has had many more cases since they started experiencing the Southern Hemisphere winter. Its impact on transnational mobility and globalisation would be another area of interest for the coming decades.

Through geography trips to Morocco and the Gower, I have left some of the best memories throughout my whole two years of Westminster. Whether it be treading through the desert in Morocco or the three-course dinners and village surveying at Gower, there were plenty of great moments to reflect upon. Geographers in Westminster are a tight community, and my geography set is my favourite set. Everyone bonded really well together and it has been wonderful to be part of a team. I am proud to be an advocate for a subject that is so generously broad and deals with such a diverse range of issues in the current world.



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