

A vintage globe with a brass stand is positioned on a stack of several old, thick books. The globe's map is aged and features various geographical labels in Latin, including 'AFRICA', 'EUROPA', 'ASIA', 'AMERICA', and 'OCEANUS'. A decorative compass rose is visible on the map. The entire scene is set against a warm, golden-yellow background, with light reflecting off the brass stand and the edges of the books.

Milieu 2023

45th Edition

MU Geography Society

A Note from Head of Department

Dr. Stephen McCarron

It is my great pleasure and honour to welcome you to Milieu, 2023. If it is your first time encountering this august publication of Maynooth Geography then you are no doubt in for a very entertaining and illuminating treat. We are immensely proud of the long tradition of scholarship, positive experience and learning in Maynooth that this publication represents. We are thus greatly indebted to the many contributors and the Editorial team, thank you for all your efforts in stepping forward to write such interesting and well produced articles and especially (yet again) to Dr Will Durkan for his efforts beyond the call of duty to bring this year's publication to the light of day.

So, please enjoy this wide ranging and diverse collection of writing. From a front cover depicting a world balanced on our scholarship, covered in societies' labels and dominated by our oceans, to every word within Milieu as the name denotes as always captures a point in time. The University is our student body, and this publication allows a sense of how the world is being perceived. It is obvious that we still live in a divided world with multiple contested claims on its ownership, causing conflict and wars. However devastating recent natural hazards and the impact of climate change demonstrates that in fact no one owns anything on this beautiful planet, instead it is more accurate to consider that we share its permission to exist here.

'Mother nature' is stridently telling us though that enough has already been done to wound her severely, and that our multiple conflicts with and within our only home need to stop.

However, hope is what we still have that this can be done in time to avert further harm. The scholarship and education represented by this publication is, alongside our leadership in action and example, what we have to counter these challenges and reduce conflict everywhere and at all levels. I sincerely hope this continuation of a small but much valued learned tradition represented by Milieu gives you some additional hope reminds you of just how much we can progress in only a few short years. The attitude demonstrated here is exactly what is good and right about University life, and I commend the publication to you and wholeheartedly thank the contributors on all our behalf.

Best regards,

Dr Stephen McCarron, Head of the Department of Geography, Maynooth University, May 2023.

Editorials

Welcome to this year's edition of *Milieu*, the annual journal of the Maynooth Student Geography Society. This year's *Milieu* probably is not that dissimilar to past issues – it reflects Geography's diversity, and the articles cover a wide range of topics, as can be seen from the table of contents. As noted on the cover, this is the forty fifth edition of *Milieu*, which has been published by the Society every year, or nearly every year, over the past five decades; the first ever issue having emerged in 1975. It is part of the very fabric of this Geography Department, and many of our former Geography students remember fondly that their first ever opportunity to get their work published came through *Milieu*.

Every year it gets harder and harder to produce *Milieu* and there would have been no journal this year without the willingness of our students (mostly undergraduate students) to submit high quality work. But there definitely would have been no *Milieu 2023* without the generosity of William (Durkan) in taking on the editorial role, yet again. With a lot more articles being submitted each year, it requires a lot more work of the editor, despite this role being taken on in a 100% voluntary capacity, and on top of the many other demands on his time.

This is also a good point in which to acknowledge the work of the Student Geography Society committee, who have had another very active year and whose leading members have now completed two years in a row on the committee, making a notable contribution to the Department and the students, in the process. A new committee will have to be established for next year and please do put yourselves forward if you would be interested in getting involved with Geography Society next year.

Adrian Kavanagh

Each year, *Milieu* provides us with an opportunity to showcase just some of the great work being done in Maynooth Geography. The breadth of the discipline is again reflected in the wide array of topics in *Milieu 2023*.

Geography's far-reaching nature allows students to engage with the many grand challenges facing our society. From the physical study of our earth and climate policies which aim to protect it for future generations, to diving deeper into the cultural fabric that shapes our everyday lives, Geography is central in every step.

The quality of work produced in these areas each successive year is testament to the quality of teaching and learning in our department, and we can rest assured that the next generation of geographers are well equipped to shape future society.

In my fourth-and-final year as part of the editorial team for *Milieu*, it has once again been a pleasure to read such great material from staff and students. Please enjoy.

William Durkan

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The Value of Skills Teaching in Geography

Author: Stas Romanchuk

The subject of geography at degree level provides insight into a wide range of intricate relations between societies and environments and holds a unique place in the world of learning and skills teaching for students. The concepts of scale, place, space and time are what geographers study, as well as being able to identify similarities, differences, dynamics and links in populations and cultures, political ideologies, economies, landscapes and environments around the world (Quality Assurance Agency, 2022: 3). This essay critically analyses the ways in which skills taught in undergraduate geography are useful in a real working environment, linking to my own experience during my work placement. As to be discussed, geography graduates are well equipped to help identify and address economic, environmental, and social challenges at different levels thanks to the skills they acquire studying the subject.

I completed my work placement in the planning department of Fingal County Council (FCC). FCC first emerged in 1994 and has since developed and advanced into a distinct environment with unique towns and villages, parks and offices, residential streets and squares, industrial and creative areas (FCC, 2022). The Planning Department works to ensure positive and sustainable development of resources, infrastructure and buildings by applying the County Development Plan, deciding on planning

permission and record compliance with planning law and planning permissions.

According to QAA (2022: 13-14), during the learning of geography, students also learn ‘through’ it, meaning they gain the means to work on a broad scope of applied research using both quantitative and qualitative techniques. Through this they gain both subject-specific and broader intellectual and transferable skills which together build the foundation for academic success, career hopes, and contributions to the economy and society. They also highlight the importance of the general methods of obtaining skills through a geography programme in order for the two to be carefully ‘considered’. Skills are then taught, practiced, and assessed in a programme that is balanced, clear, inclusive and progressive in order for the standard of challenge and achievement to be increased over time, testing students. It is through studying geography that builds students’ intellectual skills and abilities on a wide scale that are taught through its learning resources, regularly practicing its methods and using appropriate research methods etc. Some of these skills are subject-specific but are all relevant and transferable to other intellectual contexts and in the workplace.

This makes geographers particularly skilled in quantitative and qualitative approaches and how to use them effectively. They understand the complexities of the real world and are learning to incorporate a range of different data sources to identify misinformation in them. Not only this, they are also trained in data ethics, both in generating it,

but also using and reusing it to make reliable conclusions making geography graduates specialised in designing research and collecting data, analysing, presenting, interpreting and communicating qualitative and quantitative data, uncovering and manipulating large geo-spatial data sets, using inferential and relational statistics, modelling and mapping geospatial events, coding, using geospatial technology like digital cartography, GIS and remote sensing and creative and social survey methods (QAA, 2022: 14).

QAA (2022: 15) list the following subject-specific skills that a geography programme can provide that are transferable to areas such as a working environment:

- Spatial awareness and observation
- Identifying moral, ethical and safety concerns associated with geographical enquiry
- Conducting fieldwork and collecting data, examining risks and their prevention
- Using a range of interpretative methods such as participant observations, ethnographic interviews and auto-ethnography etc.
- Using a range of social-survey techniques such as social surveys like questionnaire surveys and semi-structured interviews
- Using a variety of science laboratory skills and approaches such as soil, water and sediment sample collection and analysis
- Creating, collecting and recording primary data and also using both quantitative and qualitative secondary data
- Critically evaluating, interpreting and combining different types of geographical evidence such as texts, visual and material culture, archival data, maps, digital and laboratory data etc.
- Analysing and problem-solving through quantitative and qualitative methods

- Using methods for collecting and analysing spatial and environmental information such as GIS, remote sensing, statistical and mathematical modelling etc.
- Making maps, diagrams and other visual representations effectively

Some of these skills I have either both used or attained during my work placement in my day-to-day activities. For instance, I conducted fieldwork and collected data, displayed spatial awareness and observation and critically evaluated and interpreted maps during my fieldwork in Donabate in which I was assigned to identify any new land use changes and indicate them on maps. I believe these skills were useful in this type of working environment because I had to be spatially aware of my surroundings as it was the first time, I carried out something like this and observe carefully to find my way around the town using Google Maps etc. However, I didn't solely rely on my phone, as I critically evaluated and interpreted different maps of Donabate and followed the directions on them to get where I needed to be to record any changes for most of the time. I found using physical maps more straightforward and useful than Google Maps because it tested my ability to read maps effectively to find my way, but it also made me enjoy the activity more, appreciate the geography of the town and experience how geographers would have done it 20 years ago. It suited my capabilities and was at the appropriate level of my geographical learning journey. Furthermore, I believe my levels of these skills I utilised were enhanced by this activity and I gained a new standard for their implementation and the awareness to use them in relevant situations.

I also believe the following intellectual skills taught at undergraduate level are also useful in the workplace and that I used in FCC as mentioned by QAA (2022: 15):

- Assessing the validities of contrasting theories and explanations
- Awareness of social, cultural and political contexts etc. in which knowledge is produced
- Understanding the correct and ethical use of evidence and data
- Planning, designing and carrying out research or study both independently and in groups for the production of a final report
- Numerical and statistical literacy
- Abstraction and synthesis of information
- Formulating a well-reasoned argument
- Taking responsibility for learning and reflecting on that learning

Some of these skills I have also either both used or attained during my work placement in my day-to-day activities. I was assigned to review an Excel spreadsheet table for interactive house project in partnership with ‘Annertech’ with its main aim being able to provide a simple visual route into planning guidance and advice via a 3D interactive visual guide. The spreadsheet contained descriptions of homes and their exterior and interior for potential buyers to purchase, it was my job to make the descriptions more user friendly by changing them into more plain English. For this, I had to understand the correct use of evidence and data in order to make the statements easy to understand. I also needed to have a good level of abstracting and synthesizing the descriptions to make them more coherent. Linking with the geography module in second year called “methods of geographical analysis” at MU was imperative in helping me complete the task to the

highest standard by using these skills. Having completed and enjoyed doing both of the modules (they are both compulsory modules in each semester), they each equipped me with the knowledge and procedures to complete the task quicker and efficiently, highlighting their usefulness in teaching. I was familiar on how to navigate through Excel as I did extensively in GY201/2 which in turn helped me to complete the task quicker and with little or no difficulty.

Reverting back to my fieldwork in Donabate as part of my work placement, it was the definite highlight of my time at Fingal. The task was engaging and interesting, tested my orientation and spatial awareness skills and deepened my understanding of reading maps. In fact, fieldwork is thoroughly regarded as being crucial in developing technical skills in geography and other subjects (Wheeler et al., 2015: 14 cited in Fuller et al., 2006; Hope, 2009). It is known that students engage better with active learning approaches of field-based teaching after learning how to translate theoretical ideas into real-world problems. Fieldwork also helps to develop an individual’s social and intellectual skills which are more than the ones needed for the subject itself, meaning students can transfer skills to use in other fields such as a working environment (cited in Herrick, 2010). For example, I once or twice had to use my social skills to ask for directions in the town.

In essence, Wheeler et al. (2015: 14) state that it remains to be argued that fieldwork should be the core of gaining both knowledge and achieving geography goals. They also state that fieldwork is

central in module outlines for planning any activity as they link to other preferable components in students' development, especially transferable skills. To support this claim, they refer to a quote by The Higher Education Funding Council of England (1995) "there is no doubt that fieldwork adds an important dimension to the geography curriculum and aids in the development of subject-specific and transferable skills". In addition, these skills link to field-based study and have been generally well received, (cited in Higgitt & Bullard, 1999; Fuller et al., 2000; Hope, 2009) making students and staff appreciate the importance of fieldwork more than the teaching of subject-specific knowledge and the assumption that an array of different skills are also taught by fieldwork (cited in McEwen & Harris, 1996; Fuller et al., 2003; Scott et al., 2006). Furthermore, fieldwork may branch-out into four sub-groups of skills some of which have already been discussed as highlighted by Higgitt (1996):

Intellectual: develop students' understanding of geography.

Personal: emphasise the importance of vocational and transferable skills etc.

Technical: ability at research methods, using equipment etc.

Inter alia: skills gained by desire of being in the field

However, it has also been argued that the awareness of ethical dimensions and implications of fieldwork should be included in student skills development (Wheeler et al., 2015: 14 cited in Haigh, 1996).

Fuller et al. (2006) suggest the need for more thorough research on the value of fieldwork. According to them, one role of fieldwork is assisting students to develop study skills that they might take to further studies and perhaps into the world of work.

Through my journey in Maynooth, and the knowledge and skills taught in the geography programme in relation to the international standard, I can confidently say that I have acquired a multitude of interdisciplinary and transferable skills that will be of great use to me when I go out into the world of work. Maynooth, in my eyes, did not fall short in providing both the necessary and sought after standards and expectations by employers through the learning of a diverse range of geography modules aimed towards different interests and abilities equipping students with valuable and interesting topics, but in fact, the opposite. I have always been a strong believer in the fact that Maynooth prides itself in providing the best geography programme in Ireland.

Being deemed the 'best of the best', the teaching however could be enhanced even more by changing some of the teaching and learning methods, in my view. First, the focus could be shifted towards giving real-world and current examples of topics to deepen and be relevant to students' thinking and perceptions of how they understand an issue and be challenged by applying their own set of principles and morals to change or enhance their way of thinking and problem solving abilities which could benefit them in the workplace when there won't be as much transparency as in education per se. Another way

could be to taking into account what students take on board and how they process material and be told from their standpoint and address what they find to be the most pressing topics. I believe this can improve students' information retention and listening skills so that they can be able to do the same but on a higher level and under more pressure.

I believe my work placement was very important for enhancing my geography skills. It allowed and tested me to manage my own time and work independently with minimal supervision in which Maynooth managed to teach me so far in my academic journey in the geography programme. Not only did I utilize the skills gained through the placement, but I also encountered and got to see other ones being performed by my colleagues and I had the opportunity to learn from them and be able to apply them myself to my work such as being prepared to having an informed meeting at early or busy hours of the day and doing mutual collaboration through effective communication etc. Having studied geography themselves, I also got to witness my colleagues display professionalism and composure to the highest standards when they became under pressure or when they were trying to carry out multiple tasks at once which gave me a more in-depth look into the ins-and-outs, complexities and reality of a working environment. This motivated me to work and improve on my current and future geography skills in order to make my working life less stressful.

To conclude, this essay critically reflected on ways in which the skills taught in undergraduate

geography are useful in a real working environment linking to my work placement which I completed working in the Planning Department of Fingal County Council. It was a good opportunity for me to experience a real working environment, see parts of Dublin I haven't before and meet some of my peers and staff in the whole establishment. I mentioned that my favourite part about being there was the fieldwork that I carried out in Donabate, and I discussed how the teaching of fieldwork methods unlocks a wide range of other transferable skills and a key aspect of the geography programme. This is because I believe fieldwork is arguably one of the most enjoyable and educational experiences that can enhance students' knowledge and appreciation for the world around them. It is also known that today's generation has a very 'hands-on' approach to learning and the inclusion of it as much as possible may heighten students' learning experience and maybe even find potential career paths through it.

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The Contributions of Shelagh Waddington

Author: Michelle Nolan

Shelagh Waddington is a human geographer who lectured in Maynooth from 1986 until her retirement in 2016. This essay will focus on the dominant geographic trends during her career, some of her main achievements throughout, discuss her impact on Irish geography as a subject, and discuss the work that Shelagh completed with the Geographical Society of Ireland (GSI). The assignment will be an evaluation of the trials and tribulations faced by Shelagh as she navigated her way through a male-dominated patriarchal field. Geography was exclusively a male field of study and women were given little to no recognition for their work, so this essay will critically celebrate her career's achievements and downfalls.

During Shelagh's career, there were many dominant strands of. She briefly encountered spatial science in the late 60s but more predominately behavioral geography in the 70s and radical feminist geography in the late 70s. It is quite possible that the radical feminist strand of geography was emerging while Shelagh was studying geography at third level. Shelagh is a diverse geographer who was not chained to one approach to geography. In her article titled 'changing life in the towns of North Kildare' written in 2000, she is concerned with place, population change, and why people lived in certain places. This article can be interpreted as written in a behavioral geographic approach as Waddington's research

shows that different groups of people lived in Maynooth and the neighbouring towns for different reasons and each person interpreted their surroundings differently. Each participant has a unique understanding of their surroundings and thus each interpreted them differently. The methodology used by Waddington in this article is also characteristic of Behavioural geography, as the methods used in this approach include collecting research through closed question questionnaires. Questions included asking if a participant were employed locally or in Dublin, and also sought to identify the length of residency in the towns (Waddington, 258). To all of these questions, Waddington provided options for the participants to choose from. Both the themes and the methodologies in this paper point to Waddington taking a behavioral approach to geography during the early 2000s.

There were low levels of female geographers in the 1900s due to women not being allowed to study geography at a university level until 1906. When women did start studying geography, many men wrote them out of history, even if they produced valuable work. It was overlooked simply because they were female. These discrepancies still occurred even when female geographers obtained degrees and jobs. Before the early 1900s females were unable to go to universities and they were refused admission by these universities. One of these universities was Trinity College and their reasons were blatantly sexist. George Salmon of Trinity College felt a strong disapproval of women entering the college to the point of declaring that 'over my dead body will

women enter this college'. If women got into college, he argues he would not be able to control them and watch where they went and what they did. It is clear women were excluded based on gender men feared they would be no longer able to control women if they were educated. Against the words of Salmon, women began to enter Trinity College just one year later in 1906. Women being allowed into third level education was a major milestone and highlights the ability of these women to navigate their way through a very patriarchal academic field. Very few women held positions of power such as being employed as a lecturer or a professor, but they played a major role in the GSI. This is true in relation to Shelagh as she was an instrumental member of the GSI in her academic field. The very first female lecturers in the Geography Department in the late 80s and early 90s were part-time or demonstrators. When Shelagh first started working at Maynooth University in 1986 she was employed on a part-time basis, and she was a demonstrator for the Methods of Geographical Analysis module which is compulsory to all second-year Geography students. To highlight the contribution made by Shelagh to the geography department, they opened the Sheelagh Waddington tutorial room to honour the hard work of Sheila over the years as she honed the skills of future Geographers.



Plate 1: Shelagh Waddington cutting the ribbon to The Waddington Tutorial Room.

Many women tried to make a change by working with the GSI, but this work was voluntary work, and they received no salaries and little recognition for the work they did. Shelagh was an influential and active member of the GSI and the voice of women at this time in geography was critical as they introduced new perspectives and offered a new way of seeing the world. One of the main concerns of the radical feminist Geographers was to improve the position of women in the workforce. The women highlighted issues faced by the subordinate place of women in the workplace and hoped to challenge these issues by producing research to promote change. The published work of Waddington was of great importance, as during the early radical feminist movement in Geography there were no articles or work by women being published, as it was considered not scientific enough. Shelagh's articles were scientific, and she included scientific

measurements. When Shelagh's work began to gain academic credit, it was undoubtedly inspiring to other women. Shelagh's published work would have encouraged other female geographers and offered them hope that one day their work could also be published. One of her articles was published in the Maynooth Geography Department Journal *Milieu* in 1998. She wrote an informative article on The Yangtze Three Gorges Project and after her research, she concluded that the project would have 'a considerable impact on the area and change fundamentally the existence of the people' (*Milieu*, 1998: 9). Her work highlighted important information in relation to the project and her published articles informed us of where further research into the impact of this project is needed. Shelagh's work was of importance as not only did it contain scientific measurements it also contained primary research undertaken by Shelagh into the historic and archaeological remains in the area, proving that women can carry out impactful research. The publication of Shelagh's work held importance in the broader spectrum as it was inspiring to other female geographers, encouraging and reassuring them that women would receive a chance at getting their work published. Shelagh ensured that her work was scientific and included measurements to reinforce her ideas. Shelagh navigated her way through this male-dominated field by ensuring her work has just what men claimed it was lacking, the measurement and scientific element.

One of the more recent events in Shelagh's career could indicate the lack of respect and creditability

given to female geographers in the discipline in recent years, highlighting that although there has been progress towards equality in the discipline, inequalities still exist. Waddington wrote in a GSI blog post about a recent conference she had attended. She describes how disappointed she felt as every session she went to had a large number of attendees, except the session she was presenting at. (Waddington, 2018). Her session was one of great importance as she investigated the fragile future of geography and the implications this had for Geographers and their future. This article was useful in highlighting how action needs to be taken in order to preserve the future of Geography. Waddington describes that Geography has become an option at the Junior cycle level in some schools which would mean children only study Geography up to the age of 12. This can limit a child's career as no 12-year-old knows what they want to do after school, and it may be a career that they need geographical knowledge for. Waddington's article highlights the very possible event that geography could become obsolete in schools and the loss of jobs this would incur but also the lack of geographical education and problems associated with this. Waddington's work on this topic highlights that a change should be made in second-level education to protect geography before it is too late. Where Shelagh's career may have been limited could be due to the lack of published work in the 80s and 90s, although Shelagh had some of her work published in *Milieu* this is a smaller journal that publishes the work of solely lecturers and students in Maynooth university. The lack of published work

during this time was due to Shelagh being employed as a demonstrator rather than a lecturer, as in the 80's, there were little-to-no female lecturers. This part-time role of Shelagh's and the lack of published work was not exclusive to Ireland but women all around the world were struggling to contribute to the field of Geography. One of the key ideas in the radical feminist movement was the end of the exclusion of women's contribution to geography.

'One of the strongest objections of rational feminism was to women's exclusion from the public arena of life, justified by women's 'natural' association with the home, childbirth and all the unpaid labor of reproduction that goes along with it' (McDowell 1993:165).

By associating women with nature men could argue that women were not rational, they were too emotional to be geographers, solely based on their gender. The lack of attendees at Waddington's session could highlight the constant struggle women face to be included and respected in the field of geography. The constant fight for respect and inclusion in the public sphere of geography has limited the contribution that women have been able to make to academic geography. The patriarchal society of Ireland has restricted the contribution of women to society as a whole, but this highlights that our societal structures have also limited the contribution of women in the academic sphere.

This essay has provided a critical account of Shelagh Waddington and her contribution to academic geography in Ireland. The essay has provided a

biographical and academic account of Shelagh. The essay has examined some of the main geographical approaches during Shelagh's academic career and examines the ways in which she has applied these different approaches to her work. The essay has also examined the overall role of women in Geography from the 1900s through to the present day and the different challenges women face while trying to gain equal opportunities for male and female geographers. The essay had described the way in which Shelagh dealt with these inequalities and how she managed to navigate her way through a male-dominated patriarchal field. The essay also highlighted some of Shelagh's greatest achievements such as the Waddington tutorial room. The essay finished by considering the struggles and inequalities that are still faced by female geographers today, as seen by the constant push for equality, while simultaneously examining the fragile future of geography.

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Sustainability Proofing ‘Our Rural Future’

Author: Tarina Mallon

Considering 37.3% of the total population of Ireland live in rural areas, it is an area worthy of consideration when developing plans for the future of Ireland (CSO 2019). ‘Our Rural Future’ is a government developed policy for rural Ireland but when compared and contrasted against the Global Sustainable Development Goals (SDG’s) created by the United Nations we must ask ‘is Irish document providing sustainable plans for the future of Rural Ireland?’. Looking extensively at Sustainable Development Goal 5: Gender Equality, Goal 8: Decent Work and Economic Growth and finally Goal 3: Good Health and Wellbeing and assessing whether the Our Rural Future policy is sustainability proofing rural Ireland.

The Sustainable Development Goals seek to reduce gender inequality in areas such as the workforce, politics, gender-based violence and bodily autonomy. Our rural future fails to meet the SDG as it does not adequately address the inequalities faced by women in rural Ireland. The word ‘women’ is mentioned only 9 times throughout the 128-page document and the majority of those are in relation to the role of women in agriculture. It is not recognised in the policy that not all of the people who reside in rural Ireland are farmers and that women in rural Ireland are particularly vulnerable. It particularly difficult to gain employment in rural area, coupled with difficulties accessing appropriate childcare result in women often taking on unpaid roles leaving

them depending financially on men. This can result in women trapped in a cycle that they cannot get out off. Gender based violence is a significant issue in rural Ireland where lack of policing makes it easier for offenders to commit violence against the women in their lives. Austerity measures in 2013 saw 100 rural garda stations closing in one year (Oireachtas, Leaders Questions). The Our Rural Future policy document does not mention domestic or gender based violence at all, women in rural Ireland are at greater risk than those in urban areas due to isolation and a lack of services. The chart below depicts the lack of emergency accommodation for victims of domestic violence. It shows the majority of the west of Ireland has limited access to such accommodation, Cavan, Monaghan, Leitrim and Sligo have no services at all. This is an area that cannot be ignored in future policies for rural Ireland, the important roles women play are not recognised and the protection of vulnerable people in rural society is lacking in the Our Rural Policy whereas they are at the forefront of the UN’s SDGs.

The ‘Our Rural Future’ policy addresses gender inequality in rural Ireland through provisions such as taxation benefits and grants to encourage women into agriculture while this is an extremely limited goal it does allow women to use the land to generate income. The ‘Our Rural Future’ document states the need for ‘women and girls’ to be involved in ‘participatory decision making’ in their communities, however it does not make any plans or suggestion as to how this will be achieved. In a similar vein, the policy states the need to ‘undertake

research to inform the particular needs of women and girls'. This shows that the policy makers comprehend that the current policy is not addressing the needs of women and are willing to undertake research to gain greater understanding.

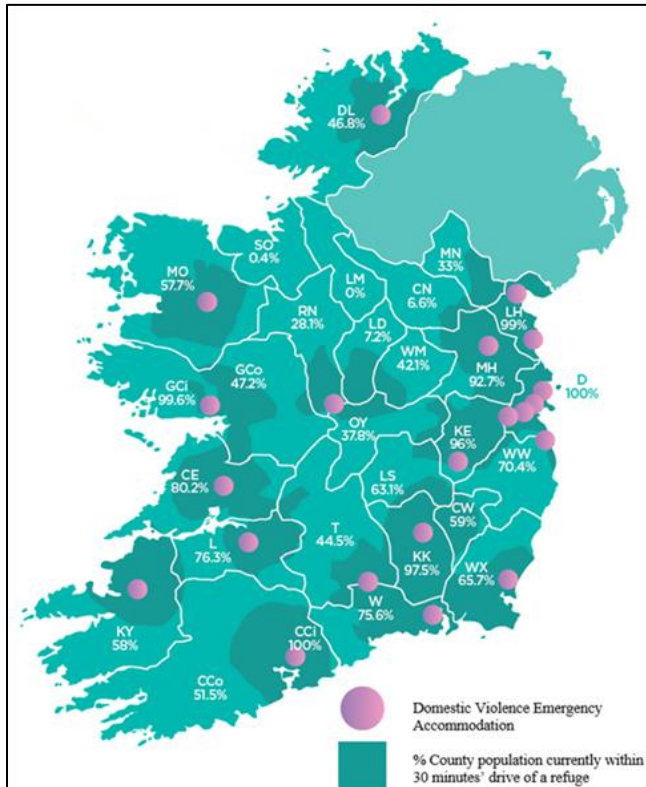


Figure One: Percentage of population within 30 minutes' drive of a Tusla Domestic Violence Emergency Accommodation in each Local Authority area in 2021. Source: Tusla, 2022, p. 21.

Goal 8: Decent Work and Economic growth is an area extensively discussed in the Our Rural Future policy document. The SDG to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all is possibly unachievable in rural Ireland due to the lack of infrastructure such as public transport and

childcare facilities. The Our Rural Future policy document looks at providing employment opportunities through the development and growth of small to medium size enterprise, encouraging home-based enterprise, increasing digital connectivity, increasing tourism and green economies and building upon the important role of the farming and fishing industries to rural life. The policies to achieve this include the development of 9 new Regional Enterprise Plans to aid economic growth and the creation of jobs. To assist rural economies to diversify and increase green and tourism streams of income, increasing visitor number and bringing additional income to rural areas. Frank Ellus describes how rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living in relation to countries in the Global South, Our Rural Future attempts to do the same. (Ellis, 2000). However, the policy lacks a concrete plan on how to achieve these goals.

The policy was compiled in the aftermath of the Covid 19 pandemic, and it is heavily influenced by the changes that occurred in the way people were working. It became clear that digital connectivity is paramount to developing the economy of rural areas. SME's will not establish themselves in area which do not have reliable connectivity. The policy include achievable ways to meet the goal of optimising digital connectivity in rural areas such as investing '€2.7 billion in the rollout of the National Broadband Plan' and the Implementation of the 'National Remote Work Strategy to facilitate employees

working from home or co-working locations. Both these policy measures will bring people back to live and work in safer rural areas, increasing the economic potential and growth of rural areas. They are further encouraging employment in rural area through legislative changes allowing working the right to request to work from home, the establishment of 400 remote working hubs in small towns which would allow individuals to share a working space, local authorities would be provided with funding to renovate vacant buildings for this purpose.

In order to mitigate the negative effectives of Covid 19 on rural business the 'Our Rural Future' document provides grants to retail business in rural towns to allow them to develop an online presence instead of relying on footfall as they traditionally have. It could be argued the when considering of SDG's goal of Decent work and economic growth the 'Our Rural Future' policy document is a product of its mid-Covid 19 time that has in part become quickly obsolete. People have returned to their pre-pandemic lives. The document excels in its policies around educating people how to use the technology that is now at their disposal, the policy states 'develop and implement a new 10-year Adult Literacy, Numeracy and Digital Literacy strategy so that everybody ...can capitalise on the connectivity and opportunities presented by the rollout of high-speed broadband'. This is one of the great successes of this document, the swift rollout of digital connectivity will have long last positive effects on rural Ireland, allowing people to access education, work, shop and

interact with other people without the expense of daily travel or moving to urban areas. The policy fails at the SDG's Decent Work and Economic growth by not looking at rural life beyond the temporary effect of the pandemic.

Maintain the SDG 3: Health and wellbeing is an area in need of significant improvement in rural Ireland. The goal seek to 'ensure healthy lives and promote wellbeing at all ages ' is not well reflected in the Irish document. There is no part of the Our Rural Ireland policy document dedicated to issues of health and well-being in rural areas, but it is added as a sidenote to the section on 'supporting the sustainability of agriculture, the marine and forestry and enhancing public services' in rural areas. Issue surrounds the provision of health service in rural Ireland has been a issues extensively covered in Irish media. The closing down of GP offices, health centres and long waits for ambulance services have brought these issues to light. The Irish document ignores the fact that 37% of Irish citizen do not have access to adequate health care. Public transport systems to take rural citizen to cities for hospital appointments does not exist and taxis are an expense most cannot afford, the result is medical issues are not diagnosed or treated until serious health problems occur. A 2019 article by Smith and Carragher conclude that if older people become ill outside GP hours, they are unlikely to seek help at all and when they do the inaccessibility of emergency services is leading to unnecessary deaths. The Our Rural Future document completely fails to address this in any meaningful way.

A small passage titled 'Health and Wellbeing of Farmers', discusses the heightened rate of cardiovascular disease, cancers, mental health and suicide of farmers but make no mention of the rest of the rural population. The only policy in relation to health and wellbeing only discusses the education of farmers and the document completely lacks any plan to provide better health care to the general rural communities. If I was tasked with developing a solution to the health and well-being problems in rural Ireland, I would make better use of the upgraded digital connectivity to allow rural dwellers to access a consultation service via video. I believe this would help identify more serious conditions and allow healthcare providers to express upon the patient the importance of accessing healthcare. Mental health service while lacking throughout the country are particularly important in rural Ireland, where isolation, lack of employment and entertainment are hard on one's mental health, the chart below show bank, garda station and pub closure numbers by county during the period 2008-2013. Recent years along with the Covid 19 pandemic have seen more closures. Allied Irish Bank this year attempted to make 70 of branches mostly in rural locations cashless, reduced the need for face-to-face transactions. The people of Ireland strongly opposed the plan and AIB swiftly reverse the decision. It was however a sign of the further gap that is developing between rural and urban Ireland, in services across all areas leading to increased risk of poor mental health. Online mental health services such as 'Mental

Health Ireland' need to be advertised so more people in rural Ireland know that they exist.

While the Our Rural Future effectively address the Sustainable Development Goals in relation to increasing employment and enterprise in rural areas with achievable plans describing how they will go about it. When we consider gender equality, health and well-being the Irish document is grossly lacking. Both the role of women in rural society and the health of all its people are largely ignored unless in an agricultural context. Much more needs to be done to ensure those in rural Ireland have access essential services such as health care and emergency accommodation following domestic violence within a reasonable distance.

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Health Geographies: The Swiss Healthcare System

Author: Caoimhe Quinlan

Switzerland is known as having an effective healthcare system. According to the Organization for Economic Co-Operation and Development (OECD) and World Health Organization (WHO), Switzerland accomplishes the crucial objectives of universal health coverage and good health outcomes, but these achievements come at a significant cost (Health Management, 2009). Further, the OECD scores Switzerland as a system that is widely available, of excellent quality, and performs well (Reich et al, 2012). Additionally, the Swiss healthcare system can be seen as effective due to the long-life expectancy within the country. Life expectancy is 82.8 years of age, which is the second highest in Europe and is subsequently above the EU average. In addition, it has a low fertility rate of 1.5 which is also lower than the EU28 average (WHO, 2015). To elaborate, in 2012 there was 3.6 deaths per 1000 live births recorded, this with the low birth rate is adding to the issue of an aging population (Ibid, 2015). This is causing Switzerland to have an apocalypse demographic. Statistics such as life expectancy are indicators of a performing healthcare system.

Text BoxHealth Care Switzerland : Switzerland
The Swiss system is being categorised as similar to the US Model of healthcare due to its being highly privatised and costly. Health expenditure in

Switzerland is the second highest in the world according to the data collected by the OECD in 2019 and spending approximately 7138 USD PPP in comparison to the OECD 38 average of 4087 USD PPP (OCED, 2021). Figure 1 shows the level of expenditure in comparison to other OECD countries. The 1994 Revised Health Insurance Law, commonly called ‘LAMal’ was established and became effective in 1996 to reform the system (Kreier and Zweifel, 2010). This law implemented a mandated health insurance which will be discussed below. Additionally, this law being integrated meant that governments had more of an integral role to play within the Swiss Healthcare System.

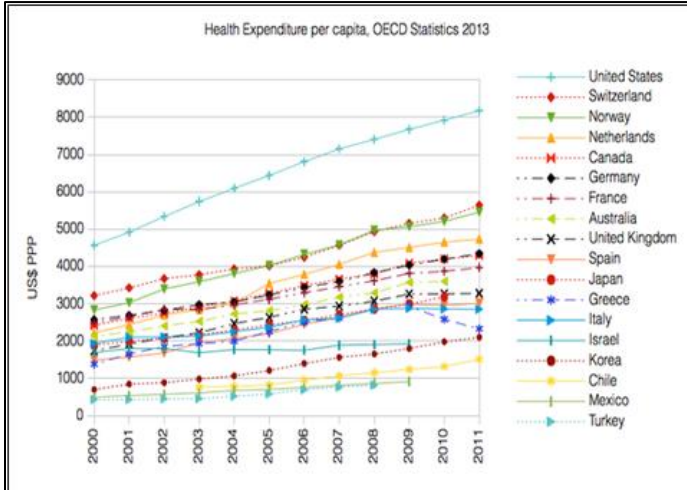


Figure One: Health Expenditure Per Capita

The Swiss healthcare system works off the basis of a mandate that is compulsory for citizens. It explicitly states that everyone must have their own individual, legally required health insurance. The law places restrictions on insurers to guarantee that those with health issues can receive coverage on the same terms

as those without such issues. Lastly, governments subsidies are provided to help those with lesser incomes to afford insurance and rely on competing health insurers (Kreier and Zweifel, 2010). Although, the government implemented these laws, the individual Cantons are responsible and control their respective area.



Figure Two: Canton Functional Area

Switzerland is divided into 26 cantons and 2650 municipalities (Reich et al, 2012) which can be seen in figure 2. As mentioned above, the government implemented the specific LaMal law, but it is up to each Canton to control their specific area in terms of healthcare care for the population of that district making the system very decentralised (Daley and Gubb, 2013). There are discrepancies between the Cantons and their specific health expenditure. Due to the Swiss healthcare system being made up of 26 cantons, it can be difficult to integrate consistent and equal national policies (Health Management, 2009). There have been continuous improvements made within the system such as a gradual process of

centralizing national health policymaking (WHO, 2015).

Health Insurance

As discussed above, the Swiss system is one which is highly dependent on private health insurance plans. Although, there is a clause as the LAMal law prevents health insurances gaining large profits from their clients plans. The government is further able to control and negotiate costs for certain medical supplies such as medication, medical devices, and services of health care professionals (Kreier and Zweifel, 2010). Cantonal governments are accountable for paying for hospital care. Kreier and Zweifel (2010) states that employers are specifically prohibited by the LAMal from offering basic social health insurance as a bonus of employment.

Swiss Compulsory Basic Social Insurance ‘CBSI’, had to follow certain guidelines provided by the government such as the ‘Community Rating’. This means that each insurer is required to charge the same premium to every member of a certain plan in a particular geographic area, regardless of their health status or health risk, except for those who are under the age of 25. (Kreier and Zweifel, 2010). Insurers are only allowed to attain profits off ‘supplemental coverage’ plans. Therefore, insurers try to get clients to take a CBSI and Supplemental Coverage out. In the Swiss healthcare system, patients are responsible for paying a 10% co-insurance fee up to a maximum of \$700 for expenses that exceed the deductible (Kreier and Zweifel, 2010). The WHO (2015) reported that the mandate

health insurance was increasing quicker than people’s incomes which questions its sustainability. Lastly, out-of-pocket payments equated to a high of 26% for the total health expenditure in comparison of the EU average of 16% (WHO, 2015). Looking at figure 3, we can see that in 2018, Switzerland had the largest voluntary/out-of-pocket in comparison to other OECD countries. It is a fault of this effective and efficient system.

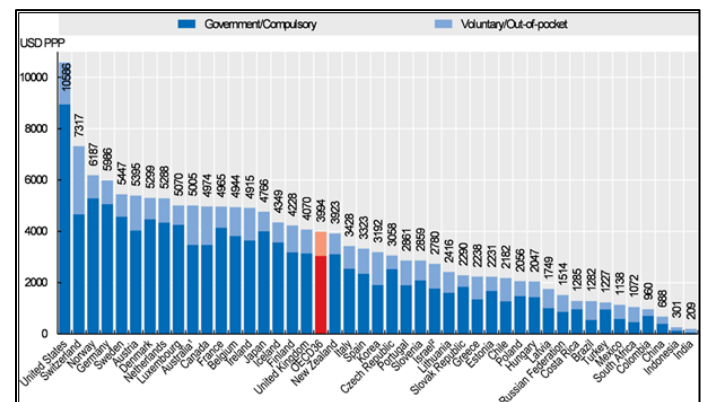


Figure Three: Health Expenditure per Capita which explores out-of-pocket expenditure (OECD, 2019)

Funding

WHO (2015) stated that the total health expenditure in 2011 Switzerland accounted for 11.5% of the GDP which has increased from the 2007 figure of 10.8% of the GDP (Reich et al ,2012). Funding was predominately from taxes and the mandated health insurance. The Federal Government in Switzerland funds approximately two thirds of the subsidies and the remaining is supplied by the respective Canton. The cantons have a primary responsibility to provide the people with healthcare (Ibid, 2012). Santesuisse, the leading organisation of Swiss health insurance

companies in social health insurance, lobbying efforts to have all hospital funding go through its members, hospitals are mostly supported by the cantons with contributions from insurers providing a small portion of the funding (Kreier and Zweifel, 2010).

TARMED is a federal scheme that was integrated in 2004 (Kreier and Zweifel, 2010). The scheme includes numerous members for example, the Swiss Hospital Organisation, Santesuisse, and Federation of Swiss Doctors. TARMED has approximately 4600 ambulatory services which has a schedule of "tariff points" that was created by TARMED Suisse and approved by the Federal Council, which acts as Switzerland's administrative authority. 73 The schedule sets the comparative worth of each service on a national level, however the dollar amounts associated with each point vary from canton to canton (Kreier and Zweifel, 2010).

Negatives

Switzerland has a high-skilled and efficient healthcare system, however, it has a very low percentage of expenditure on preventive measures. According to the OECD, Switzerland only provides 2.2% of overall expenditure to disease prevention and health promotion. In comparison, the OECD average is 2.7% (Health Management, 2009). Dr. Danzon from the WHO discusses acknowledging important health issues such as tobacco and alcohol consumption and issues such as mental health (Ibid, 2009). Non communicable disease (NCDs) is the

common reason for mortality, accounting for approximately 85% of mortality. Cardiovascular diseases (CVD) and cancers are the most prevalent NCD in Switzerland (WHO, 2015). Therefore, improving their prevention measures such as early screening might decrease these numbers considerably and prevent mortality.

Another negative aspect of the Swiss healthcare system is the cost. The survey carried out by OECD and WHO recommend that Switzerland make their healthcare system more cost-effective (Health Management, 2009). John Martin from the OECD discusses how the aging population of Switzerland and innovative healthcare technologies predicts a rise in healthcare expenditure and questions the sustainability of the system (Ibid, 2009). Additionally, another negative of the system is that premiums are set to raise, and so are the out-of-pocket payments which relay financial stress on certain classes such as lower and middle incomes (WHO, 2015). Adding to this, people of lower incomes and migrants are heavily burdened by this system as they pay a larger percentage of their income for health care to fund the system. Moreover, depending on where they live, each contributor contributes a significantly varied percentage of their income. The premium subsidy schemes used by the cantons do not do enough to ease the financial burden on lower-income households, and they also contribute to the variance in financial burden by location (Ibid, 2015).

Lastly, another negative that be highlighted from the Swiss healthcare system is the lack of 'risk

equalisation'. In Switzerland's case, the risk equalisation is based on sex and gender. Whereas, a more suitable risk equalisation which might be more suitable is using health status in risk equalization (Daley and Gubb, 2013). This helps to subsidise the cost of older people which is an increasing demographic in Switzerland.

Positives

The Swiss healthcare system is one which is costly, there are benefits. The managed care insurance plans with gatekeeping restrictions are increasingly significant, the system offers a lot of choice and direct access to all levels of care with almost no waiting times. Public approval of the system is strong, and most people think the quality is good or very good. In comparison to different countries this can be seen as highly efficient and effective system. Additionally, the Swiss system is known to have ever-growing innovative treatments which means the patients are able to avail of life changing procedures.

There are 293 hospitals within Switzerland and in comparison, to the population makes the number of hospitals high. This improves patient satisfactory levels. There are a variety of hospitals; public hospitals, non-profit organization hospital and privately owned (approximately more than 50 percent) (WHO, 2015). This provides patients with a large variety of choice. Furthermore, patients have a great deal of freedom in terms of choosing a doctor and a facility. The Swiss healthcare system has long provided easy access to all levels of treatment,

including inpatient care, without the requirement for a reference (Ibid, 2015). The above reasons are why patients are satisfied with the system as well as the quality of the services provided (Ibid, 2015). Lastly, the quality of healthcare is excellent, albeit not extraordinary, according to OECD quality metrics (Ibid, 2015).

Switzerland and COVID-19

During the Covid-19 pandemic, the Swiss healthcare system rolled out vaccines to help protect people from the disease. From the 8.7 million people who live in Switzerland, approximately 13,900 people died (Swiss Info, 2023). There was a high percentage, 97 percent, of Swiss which had antibodies due to vaccinations or infection (Ibid, 2023). The responsibility of containing the virus has now been passed down to the Canton level. Further, the spread of COVID-19 was different between the different language-based areas. Cantons had the ability to pressure private hospitals to enhance their bed capacity for COVID-19 patients (Giezendanner et al, 2012). This led to non-urgent care being stopped to provide more medical professionals to work within the pandemic. The primary care level has an important role in managing infectious diseases in Switzerland. This level adapted to COVID 19 by providing patients with virtual calls to help with diagnosis. It can be noted that, general practitioners (GPs) in the Swiss system had an integral role of minimising the utilisation of emergency rooms and reduce hospitalisation rates (Ibid, 2012). Lastly,

during the pandemic, the populations primary source of medical guidance was through their GPs (Ibid, 2012).

Conclusion

As discussed above, Switzerland is perceived as an effective healthcare system according to indicators from the OECD. However, there are issues in relation to its affordability and whether they're sustainable, it is still a system which is efficient and caters the needs of its patients. Remund et al (2019) states that the system questions whether a healthcare system focused on the needs of the customer can maintain fast increases in lifespan without leaving behind the less advantaged segment of the population which is an issue that is prevalent within the system. As highlighted in the above paragraphs, the Swiss healthcare is working. Although there are issues with its longevity, it has valid positives which aren't prevalent within various other countries healthcare system such as no wait times. Integrating further policies and implement caps on health insurance will assure its longevity.

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Combating Climate Change: The Role of China and the USA

Author: Daniel Donovan

The US and China are the world's largest economies accounting for almost 50% (China on 28%; US on 18%) of global greenhouse gas (GHG) emissions (Greenly, 2022). China's rapid economic development has coincided with a sizeable increase in GHG emissions, a fact which manifested in 2019 when China's emissions surpassed those of all developed (OECD) countries combined (Larsen et al., 2019). Whilst some assumed continued economic development and incorporation into global markets would lead to an inevitable convergence of Chinese and US economies, what Francis Fukuyama (1992) famously called "the end of history", this is not likely to occur anytime soon (Zhao et al., 2020:59). Contemporary Sino-American relations are characterized by mutual distrust and universal competition (Schindler & Di Carlo, 2022:1) between fundamentally distinct structures of political governance, geopolitical interests, and experiences of industrialization and economic development.

However, both States converge, maybe reluctantly, at one issue of mutual interest: climate change, finding themselves at a situation whereby their respective actions are hugely consequential when it comes to environmental damage and exacerbating the greenhouse effect. In this context, I will conduct a critical commentary of the approaches taken by China and the US towards tackling climate change in

recent years. I will achieve this by comparing their approaches to engagement with recent UN “conferences of the parties” (commonly known as COP summits) and their commitments to the measures outlined in the Paris Agreement of 2015.

The US and Chinese Approaches to tackling Climate Change at “Conferences of the Parties”

From Conflicted Fragmentation at Copenhagen to Bilateral and Multilateral Engagement

The COP 15 summit in Copenhagen in 2009 coincided with great tumult in global politics. The priority of governments seemed fixed on dealing with the implications of the global financial crisis, with climate change taking a backseat in the political consciousness. The summit was largely seen as a failure, eschewing tough, legally binding commitments on mitigation (Falkner et al., 2010:252-3). Corn (2009) writes how China’s refusal to place its emissions limits within an international framework for verification was a “deal breaker” for the US. The resulting failure to deliver a legal treaty agreement meant COP merely “took note” of the accord (Winkler & Beaumont, 2010:639), rendering it suspended in “legal limbo” (Egenhofer & Georgiev, 2009:3). An example of what Biermann et al (2009:23-4) call the “conflicted fragmentation” of global governance.

Both the US and China soon seemed to realize the error of their stubbornness at Copenhagen. President Obama’s reelection campaign reinvigorated his

commitment to tackling climate change. On the campaign trail he committed to “continue to reduce carbon pollution” (Goldenberg, 2012). Upon reelection, both states jointly agreed to five new bilateral initiatives in 2013 with the overall objective of reducing GHG emissions (US State Department, 2013), establishing the US-China Working Group on Climate Change. Moreover, an unprecedented visit by President Obama to China in late 2014, building on the previous year’s developments, produced a landmark agreement with China’s new premier Xi-Jinping. This climate deal included new targets for GHG emission reductions by both parties, with China committing to stop GHG emission growth by 2030 (Landler, 2014). For Cole (2015:116-17) this agreement represented an endorsement of a polycentric approach to combating climate change via commitment to continuous interaction in bilateral and multinational fora.

The COP 21 summit in Paris in 2015 seemed to offer a broader antidote to the multilateral paralysis observed in the years proceeding Copenhagen, and a follow-up to Sino-American bilateral progress in the intervening period. Beforehand, President Obama and Xi-Jinping made a joint announcement highlighting their hopes for a legal treaty, enhanced transparency, and increased focus on climate mitigation and adaption (White House, 2015). The announcement also outlined both states’ first nationally determined contributions (NDCs) to tackling climate change. This offered new hope and confidence that, unlike Copenhagen, crucial differences had been overcome and an agreement

could be reached. Indeed, extensive talks culminated in the much-acclaimed Paris Agreement.

The headline target of the Paris Agreement was to limit global average temperature increases to 1.5°C above pre-industrial levels (UNFCCC, 2015:3). This is to be achieved by encouraging each party to continuously update their NDCs, reflecting each party's "different national circumstances" (UNFCCC, 2015:4). These flexible, non-binding elements of the overall legal commitment fostered universal approval but are heavily reliant upon enhanced transparency frameworks (ETFs) to promote accountability. Nonetheless, Paris is seen by many to demonstrate a successful model of multilateral diplomacy due to unprecedented Sino-American joint participation (Chan, 2022:7) in commencing, creating, and adopting, a progressive approach to combating this existential crisis.

From Polycentric Progress under Obama and Xi to Tension under Trump

In President Obama's second term he managed to build and maintain an effective working relationship with Xi-Jinping, allowing for consensus building between the rivals on the climate issue. This political consensus represented a recalibration of multilateral efforts led by the two superpowers' newly invigorated commitment to bilateral cooperation and "burying the hatchet" of previous summits. However, the election of President Trump in 2016 soon hampered this bilateral progress, and the analogous multilateral progress this fostered at COP 21. His "America first" doctrine made him openly

hostile to China, as was immediately observed in his presidential announcement speech in 2015. "When was the last time anybody saw us beating...China in a trade deal? They kill us. I beat China all the time" (Time, 2015).

This rhetoric would be a sign of what was to come for Sino-American relations. To secure his campaign objective of "fair trade" with China the Trump administration immediately began re-negotiations with Beijing to cut huge US deficits (Arezina, 2019:297), which later incited a trade war in 2018. In conformity to this new geopolitical direction, Trump announced the US would leave the Paris Agreement in 2017, citing China as an example of the agreement's "lack of meaningful obligations on the world's leading polluters" (Trump, 2017).

This undermined the progress made in Paris in areas such as multilateral compliance and universality, joint climate leadership, increasing mitigation and adaption costs for developing countries, cuts to research funding, and damaging Sino-American climate cooperation (Hai-Bin et al., 2017:222-23), which had greatly improved in the preceding years. Despite being cautious to explicitly criticize the US, Swaine (2017:13) writes how sources indicate the Chinese remain committed to multilateralism and meeting its obligations, despite obvious disappointment in these developments.

“The United States is back at the table”: Fresh Hope at Glasgow to Diplomatic Breakdown ahead of Egypt

The words of President Biden’s top climate advisor ahead of COP26 in Glasgow in 2021 (Dennis, 2021). The election of President Biden in 2020 meant the US reentered the Paris Climate Agreement via executive decree, a promise reiterated throughout Biden’s campaign. He spoke at the summit, attempting to retrieve the progress made at COP 21 and distance itself from the previous administration’s rollback of NDC commitments. However, Biden would instead use this opportunity to excoriate Xi Jinping for not attending (Harvey, 2021). Despite early tension, a surprise joint announcement followed bilateral discussions between US and Chinese representatives in which both reaffirmed their “commitment to work together and with other parties to strengthen implementation of the Paris Agreement” (US State Department, 2021). The announcement included reference to specific environmental policies and areas of cooperation which paved the foundation for the Glasgow Climate Pact days later (Tu, 2022:15).

Whist this represented a reassuring throwback to the joint announcement in 2014 and pointed towards a rediscovery of the unified approach by the US and China in the first half of the decade, relations would again sour in 2022 when Speaker Nancy Pelosi visited Taiwan in a display of solidarity against Chinese military exercises and posturing. Beijing condemned Pelosi’s actions as “vicious and provocative” and announced an end to bilateral talks

and collaborations on issues, including climate change (Ni, 2022). This has threatened to damage the often “fragile cooperation between the world’s two largest carbon emitters” (Milman, 2021) ahead of COP 27 in Egypt. Summit president Abdel Fattah El-Sisi has christened the summit “an opportunity to showcase unity against an existential threat that we can only overcome through concerted action and effective implementation” (COP27, 2022). However, Gavin (2022) notes how geopolitical tensions between the US and China suggest that a repeat COP 26’s positive outcome is indeed highly unlikely.

US and Chinese Approaches to Implementing NDCs

Indicators	Targets for 2030		Progress in 2020
	First NDC (2016)	Revised NDC (2021)	
Peaking CO2 emissions	"Around 2030" (and "making best efforts to peak early")	"Before 2030" (and "achieve carbon neutrality before 2060")	Around 80% of China's emissions "having peaked" or "expected to peak before 2025"
CO2 intensity reduction (compared to 2005)	60-65%	>65%	48.4%
Non-fossil share in primary energy mix	Around 20%	Around 25%	15.9%
Forest stock volume increase (compared to 2005)	Around 4.5bn cubic metres	6bn cubic metres	5.1bn cubic metres
Installed capacity of wind and solar power	-	> 1,200GW	534GW

Table 1. This visual displays China’s first NDC (2016), and updated NDC (2021), as well as projected progress

Source: Liu, H. and You, X. (2021)

A recent IPCC report stated that even with the full implementation of the NDCs agreed to in the Paris Climate Agreement, it is “likely that warming would exceed 1.5°C this century” (IPCC, 2022:15). The Climate Action Tracker has rated both Chinese and US approaches to the global headline target as “insufficient”, bestowing a global climate action

rating of “highly insufficient” and “insufficient” respectively (Climate Action Tracker, 2022). This is particularly worrying given the responsibility resting upon both states to implement their climate targets as the world’s largest GHG emitting countries.

This is not to say that the Sino-American joint approach to Paris has been unfruitful in yielding domestic progress. China’s vigorous domestic approach means they are likely to significantly overachieve its registered domestic NDC targets (see Table 1) under the Paris Agreement (Liu, 2022). President Biden recently signed the Inflation Reduction Act (IRA) into law. This legislation has been described as the most ambitious climate policy in US history (Climate Action Tracker, 2022). A move away from Trumpian reproachment on climate change. Furthermore, a recent study by Meinhausen et al. (2022:308) showed global warming could still be limited to 2 °C pursuant to fulfilling domestic NDC policies agreed to since COP 21.

Conclusion

My discussion highlighted the tumult of the climate governance landscape. We saw how COP 15 was underpinned by a conflicted approach by the two superpowers, distrustful of each other. The intervening period between COP 15 and COP 21 birthed years of bilateral progress, trust, and transparency between the US and China whereby productive diplomatic dialogue encouraged the universal ratification of the Paris Agreement. A move from fragmentation to a mutual polycentric

approach, maximizing the UN’s multilateral capacity.

The Trump years saw the US move from bilateralism and multilateralism to a unilateral “America First” doctrine, damaging previous climate progress with China and the UN. Current Sino-American tensions demonstrate that bilateral progress is fragile, and contingent upon a diplomatic reconciliation of interests. Congruently, multilateral progress at “conferences of the parties” is contingent upon bilateralism between the superpowers and is thus also fragile. However, the Paris Agreement has cemented a multilateral framework from which both can rediscover the constructive bilateral approach vital to combating climate change. As António Guterres remarked recently at COP 27, “a window of opportunity remains open, but only a narrow shaft of light remains”.

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The Invention of Modern Disposability

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Modern disposability was invented. The truism that humans are inherently wasteful came into being at a particular time and place, by design (Liboiron, 2013).

The truism that humans are inherently wasteful came into being at a particular time and place, by design' with a focus on plastic beverage bottles as an everyday commodity which is designed for a predetermined time of use and subsequent disposal (Liboiron, 2013). This essay will argue in favour of the statement and show how the plastics industry invented disposability as a strategy for business growth. This essay will also discuss how the plastics industry have used mechanisms such as recycling to divert attention away from its operations and place responsibility upon individual consumers using the truism of humanity's inherent wastefulness as a causal excuse. It will be argued that historical forms of reuse and issues such as wishcycling display humanity's inherent wish to avoid wastefulness, thus exposing the truism as a wasteful industry's creation.

Meera Subramanian (2021) discusses the investigations of sargassum on the surface of the Sargasso Sea by biologist Ed Carpenter in 1971. In his attempts to collect the surface floating organism, he encountered plastic in every sample collected, harvested from an area 1,300 kilometres in size, and

published his results the following year. Carpenter and Smith (1972), who were the first to document the issue of ocean plastic, aptly noted that 'the increasing production of plastics, combined with present waste disposal practices, will probably lead to greater concentrations on the surface'. We now are aware of the insidious nature of ocean plastics, their presence having even been detected in the sediments of the ocean floor, and within the bodies of marine organisms. However, Carpenter and Smith's (1972) report also includes mention of the increasing production of plastics in the early 1970s, having been only introduced at significant scale since the Second World War. In 1963, eight years prior to the discovery of the presence of ocean plastic pollution in the Sargasso Sea, Lloyd Stoffer addressed *The Society of the Plastics Industry, Incorporated* at the National Plastics Conference in Chicago,

'It is a measure of your progress in packaging in the last seven years that [my 1956] remark will no longer raise any eyebrows. You are filling the trash cans, the rubbish dumps and the incinerators with literally billions of plastics bottles, plastics jugs, plastics tubes, blisters and skin packs, plastics bags and films and sheet packages--and now, even plastics cans. The happy day has arrived when nobody any longer considers the plastics package too good to throw away'.

The plastics which Carpenter (1972) had first discovered in the ocean were not there by accident, but by design. As Liboiron (2013) has argued, Stoffer's (1963) address illustrates the manner in which waste production through the invention of

disposability became of strategy for business growth. Simply, the more products produced and dumped, the greater the demand for new products, and thus the greater the profits for those involved in the linear economy of plastics, the manufacturers, extractors of raw materials, transporters, retailers, the waste collectors and processing facilities should they be held privately and not in common or state ownership. Plastic products were designed to be consumed and discarded as quickly as possible, but the expansion of the range of plastic products was also an important element of expanding the invention of disposability into new spaces. In the same 1963 speech quoted above, Stoffer refers to this expansion of products which aimed to directly replace reusable products with single-use disposables, ‘note what is happening in France, where with no previous throwaway milk package - nothing but returnable bottles - they are turning to a very thin-walled, almost flexible, blown polyethylene throwaway container’ (Stoffer, 1963). Stoffer (1963) continues with the ominous line ‘the European countries are moving in one step from a tradition of returnable containers to throwaways’ referring to the speed at which the change from reusable to disposable was taken place. This is a simple formula for GDP based growth. Not alone does this process have to continually operate it also must expand year on year if it is to be deemed a success, and Stoffer’s (1963) address directly highlights this when he lists the multitude of newly introduced disposable products and acclaims in success, how the dumps and incinerators are being filled with billions of these products.

Two years after the discovery of ocean plastic by Carpenter in 1971 and ten years after Stoffer’s (1963) address, arguably one of the most publicly identifiable items of contemporary plastic waste, the plastic beverage bottle, as shown below at *plate 1*, was created. This bottle was produced from a plastic called *polyethylene terephthalate*, abbreviated to PET. As with most plastics, PET is a product of the oil industry, and for which there are many uses including variable types of packaging such as rigid crates and films, but also as a textile fibre commonly known as polyester. Nathaniel Wyeth, in 1973, invented the PET plastic bottle as a sturdier, lighter alternative to the traditional returnable and reusable glass bottles in widespread common use at the time (Lemelson-Massachusetts Institute of Technology, 2022). Though the material PET has been in existence since 1941, Wyeth, an engineer with DuPont, proved its robustness as a packaging for pressurized carbonated beverages and thus the modern plastic bottle was born. PET is now the most commonly used material to manufacture beverage and water bottles, as is stated by Petcore-Europe (2022), the PET industrial association, ‘bottles now represent the most significant use of PET moulding resins’.



Plate 1: A discarded water bottle which is constructed from PET.

Source: Disposable America (2014)

Though wastefulness is purposefully designed into many modern products in the form of disposability and designed obsolescence, the blame for waste is often erroneously conferred on the individual consumer rather than the industry producing the waste. This is most obvious in the case of recycling. The truism that humans are inherently wasteful is proffered as the cause for the high amount of wastefulness in modern capitalist societies, and so the solution to the issue is to change individual human behaviour through instilling more responsible discarding practices (Liboiron, 2014). Recycling does serve a purpose in reducing waste and the requirement for virgin raw materials but, as Liboiron (2016) argues, it ‘is not environmentally benign’,

still needing the input of other additional materials to produce new products, and still outputting harmful emissions and pollution in the industrial recycling process. As the schematic at *fig. 1.* illustrates, the environmental issues surrounding recycling are often excluded from the discussion by organisations which promote or are involved in the recycling industry. The promotion of individual behavioural changes and responsibility for the creation of and discarding of waste has facilitated what Liboiron (2016) states is the institutionalisation of disposability. Both infrastructures and mainstream public discussions have now been constructed around the primacy of recycling, thus allowing the production of disposable products continue, largely unchallenged.



Figure 1: A schematic showing a sanitised recycling process produced by a PET industry association which promotes the use of PET plastic as a viably sustainable, recyclable product.

Source: Petcore-Europe (2021b)

Ownership relations regarding discards have also altered in the process of institutionalising disposability. Again, referring to the use of bottles as an example, when the use of glass bottles was commonplace, ownership of the packaging remained with the producer of the commodity being stored. Bottles were returned, reused, and redistributed (Liboiron, 2016). These practices originated in the packaging being of value to the producers, and also of value to the consumer, either through a paid fee being attached to the return of the glass bottle or through a shared social obligation to return the property of the manufacturer as an element of the relations of trade. With the invention of disposability, these historical social obligations have been purposefully deconstructed, and the ownership of plastic discards has been transferred from the producers to the individual consumer. The consumer now bears the responsibility for the existence and discarding of plastic waste, despite the lack of the previously existing returns or reuse mechanisms. Such mechanisms would likely have a negative impact upon the profits of producers had they to invest in them, and so the costs of the production of disposables are externalised, with consumers paying for recycling or waste collection services, or paying through taxation for unauthorised dumping, littering, and pollution clean ups. In an attempt to address these issues at the individual scale, consumers turn toward recycling as the only option available, encouraged by plastic producers and their related industrial societies and associations. Petcore Europe, one such association which lobbies on behalf of the

plastics industry, are also heavily invested in the promotion of recycling and individual responsibility as solutions to plastic's disposability and wastefulness. The primacy of recycling aids in diverting attention away from the producers of waste, while simultaneously placing responsibility onto individuals who have little or no control or choice regarding its production or discarding. And so, the process of disposability becomes institutionalised through ingraining these relations in both the social attitudes and in the constructed infrastructures which prioritise recycling as the solution (Liboiron, 2016).

The promotion of recyclability belies the additional fact that not all plastics are recyclable. Modern awareness of the environmental damage caused by leakage of plastic discards from waste systems, especially concerning marine plastics, prevents overt statements like Stoffer's 1963 address, yet the plastic and petrochemical industries are still resistant to the idea that there is any issue with their products. In 2019 an analyst at the World Petrochemical Conference in Texas stated 'there is no plastic crisis' (Mah, 2021). Instead, plastic companies have refocused on efforts to promote recycling, and 'have scrambled to pledge money for ocean cleanups, develop new recycling technologies' in an attempt to greenwash their operations, misplace responsibility, and further institutionalise disposability. Yet, 'of all plastic packaging waste generated worldwide, 14% is recycled, 14% incinerated, 40% is landfilled, and 32% escapes collection' according to Becerril-Arreola and Bucklin (2021). Evidence of the deliberate greenwashing of the plastics industry can

be seen in the ‘recycle the one’ website operated by the previously mentioned association which lobbies within the European Union on behalf of PET producers, Petcore-Europe. Their stated purpose is ‘to ensure that PET is positioned as an outstanding packaging material and recognised as environmentally sound’ (Petcore-Europe, 2022a). Petcore-Europe's focus on ensuring ‘a continuous increase of PET post-consumer collection and recycling’ hides beneath a veil of environmental responsibility, while externalising the costs and responsibilities for managing the material post use. The image at *fig. 2.* provides evidence of this tactic, displaying part of a poster promoting their plastic product as environmentally friendly and sustainable.



Figure 2: Part of a poster produced by a European plastics lobby group falsely promoting their product as environmentally friendly.

Source: Petcore-Europe (2021a)

‘Wishcycling’ a term originally coined by the recycling industry to describe what it saw as the irresponsible disposal of non-recyclable materials in recycling receptacles, has been re-termed to show the desire of individual consumers to avoid waste, nullifying the truism that humans are inherently wasteful (Altman, 2021). In the aspiration that a product may be recycled and reborn into a new commodity, all manner of material is disposed of in

recycling bins. This has resulted from industrial and governmental promotion of recycling as the solution to waste, without discussion or acknowledgement of the numerous limitations of the recycling system. The SPI codes on plastic products show the opaque nature of the promotion of recycling by plastics corporations. As illustrated in *fig 3.*, the SPI code which designates the type of plastic an item is constructed of is shown as a number inside three linked arrows. The symbol, though not connected to recycling is highly confusable with the common mobius recycling symbol, shown at *fig 4.* for comparison. Of the seven types of plastics codes displayed in *fig. 3.*, only two are widely recycled, PET being one. Therefore, wishcycling has come to illustrate that despite the willingness of consumers to avoid wastefulness, the system of production and consumption, including the design of the products, and the limitations of recycling, prevents this.

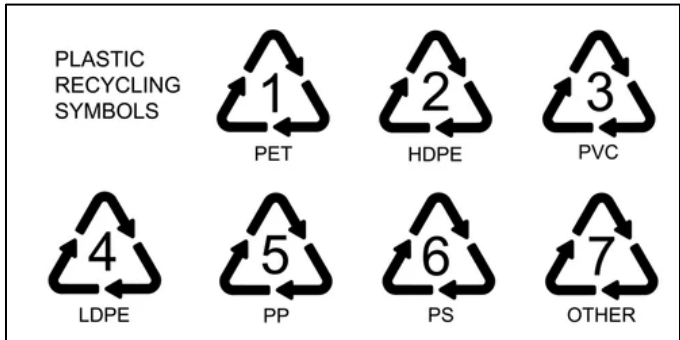


Figure 3: This image shows the SPI codes identifying the different types of plastics. Contrary to both public and occasionally, official belief, these symbols do not indicate recyclability.

Source: Government of Ireland (2022)

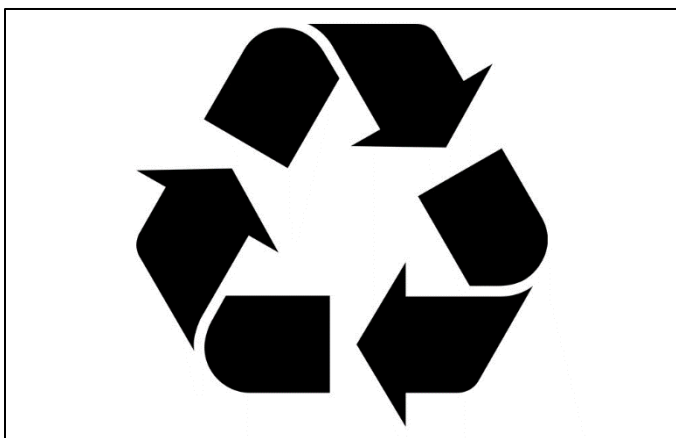


Figure 4: The mobius loop symbol indicates that an item is capable of being recycled.

Source: Global Action Plan (2022)

Key to achieving the acceptance of disposability, and thus the invented concept of the inherent wastefulness of humanity as a natural feature of modern society, has been the purposeful devaluation of plastic packaging among consumers, as stated by Stoffer (1963). As discussed above, previous forms of reusable packaging such as glass bottles retained their value, social and monetary, both for the producers and consumers, and so were returned, especially as the infrastructure for reuse was in existence. Plastic is purposefully devalued, despite its finite nature, and so only certain valuable forms are destined to enter the recycling process, such as PET beverage bottles. However, recycling relies of numerous externalities including infrastructure and economics. For an individual to place a PET bottle into a recycling bin there first must be one readily available. And there also must follow an infrastructural chain of collection services, sorting facilities, recycling plants, buyers for the recycled material, and plants to re-entre the material into the

production chain. Should that not be the case then the plastic discards are destined to be exported to countries which may or may not have suitable processing facilities, or the discards may re-entre the general waste stream into landfill or incinerators, or simply leak into the environment. Recycled plastic is also highly reliant on economics and the fluctuating value of the material. When the value of the recycled plastic is non-competitive against virgin raw materials, it may simply be unused or discarded.

MacBride (2019) states that when examining the impact of recycled metals on virgin resource extraction, recycling had no significant impact. The circular economy has been adopted as an official aim in the reduction of waste. The development of wider better managed networks of recycling and reuse infrastructures is hoped to reduce discarding, however if MacBride (2019) is correct, then this will have little effect on the highly damaging and often ignored issues surrounding the extraction of raw materials which produces waste far in excess of the 3% of total waste originating from municipal sources (Liboiron, 2010). Yet, it is municipal waste which remains the focus of reduction efforts. This is because disposability was invented, along with its excuses, as a strategy for economic growth (Liboiron, 2013). Now faced with the increasing consequences of this invention, governmental and corporate entities have had to offer responses to public awareness and agitation for corporations to play their part in a solution, as stated by Petcore-Europe ‘this is the same for industries as it is for everyday people’, resulting in the concept of the

circular economy (Petcore-Europe, 2021b). Mah (2021) notes that the European Commission's 'Strategy for Plastics in a Circular Economy' notably excludes reduction with regards to the initial production of plastic products, merely focusing on reducing other forms of waste.

In conclusion, the contemporary plastics industry has shown through their practices that the continuation of disposability is central to the profitability of their business. The first part of Liboiron's statement, 'modern disposability was invented' is proved correct by the statements of the plastic industry such as Stoffer's 1963 address. It is also proven in the analysis of the replacement of reusable products with those that are disposable post the Second World War, through the deliberate actions of plastics manufacturers who used this tactic to avoid market saturation and simultaneously expand the market for plastics through the development of new products, such as the plastic beverage bottle. The second part of Liboiron's statement 'the truism that humans are inherently wasteful came into being at a particular time and place, by design' has been shown to be an essential element in the promulgation and institutionalisation of disposability through the promotion of recycling as a solution to waste. Plastic manufacturers place the blame for waste upon individual consumers, who have little choice or control over product materials or packaging, diverting the attention and efforts away from the actual cause, the initial production of plastics.

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Save The Boyne: A battle against Dawn Meats

Author: Ariann Fox



Image 1: Walk the Boyne Ramparts - an 8km trail back in time in Co Meath

Source: (Ó Conghaile, 2021)

Introduction

Protesting, something that shows the ultimate dedication of a group to the cause they are fighting for. When this happens, it is normally on the news and it is for big causes, for example the climate protests in 2018 after Greta Thunberg challenged her government. We revolt against the people who hold the power, we speak out for the more vulnerable groups in our society. This is seen in the last year when a group called ‘Save the Boyne,’ spoke out against a business called Dawn Meats to stop their actions of installing a new pipeline. This blog will have a focus on how powerful business can sometimes get away with doing things that are not right, because of the force they have and how local organisations can get information out to a large amount of people to stop this from happening. I want you to keep a question in your mind while reading

this blog: Why do we allow these companies force their power onto us and destroy our environment in the process?

Dawn Meats application for a new pipeline

On 5th of March 2021, a company called Dawn Meats applied for planning permission to the Meath County Council by the registration number 21424, they wanted to build a pipeline for their treated waste to be released into the river Boyne. (Save The Boyne, 2021) On the 27th of April 2022, the Meath County Council approved the planning permission, as this was the case groups associated with the Boyne applied to An Bord Pleanala to have the decision appealed. An Bord Pleanala will be the final decision, although their decision date has been moved multiple times. Dawn Meats hold an Industrial Emissions Licence and a Natura Impact Statement with this application have submitted an Environmental Impact Assessment that was approved by the council. (Save The Boyne, 2021) Although in their environmental Impact Assessment there was “potential sources of air pollutants from the proposed development would be emissions of carbon dioxide and nitrous oxide emissions arising from wastewater treatment”, this would arise from the live cattle that they produce sides and quarters from. (O’Looney, 2021) Dawn meats have been accused of not being truthful when applying to the Meath County Council for planning permission, they claimed to be tankering their waste to Ringsend Dublin and or Navan, which is untrue as they have

been tankering it in Drogheda Marsh Road, “this would be inconsistent with previous information submitted to Meath County Council by Dawn Meats”. (Save The Boyne, 2021) Although An Bord Pleanala refused to take this evidence on board which would make a significant difference regarding their decision, “evidence of misinformation on the company’s Environmental Impact Assessment Report in which they claimed best practice and a greater ‘sustainability’ for this proposal by elimination of the risk during tankering to Dublin.” (Save The Boyne, 2021) This would be considered greenwashing, “misleading consumers about their environmental performance or the environmental benefits of a product or service”, Dawn Meats has claimed that their way of production is a benefit to the environment, but this is deceptive information. (Delmas and Burbano, 2011) This shows the power Dawn Meats have and although they have submitted something incorrect and An Bord Pleanala disregards this shows the environmental injustice occurring regarding this decision.



Image 2: Dawn Meats Logo

Source: Foodnavigator.com, 2015

Save the Boyne

A community group was set up called ‘[Save the Boyne](#)’ to stop Dawn Meat’s application for this pipeline, the Facebook page has information for people to comment on the situation, it now holds 9.4 thousand members. (Facebook, 2021) The local people are against this idea as the river Boyne is home to a wide variety of biodiversity, and the standard of Ireland’s rivers have been decreasing in the last few years, “no rivers in County Meath classes as pristine or high standard”, if this planning permission is granted this will not only affect the biodiversity but decrease the quality of the water. (Spearman, 2022) There was huge opposition to this pipeline and many groups that use the river want to stop this from going ahead, “A number of third-party appeals have now been lodged on the plans including appeals from the Save the Boyne Group, Slane Bridge Anglers, Silver Bridge Kayak Club”. (Meath Chronicle, 2022) Save the Boyne group is trying to get the Meath County Council and the EPA to use the legislation they have to their disposal to try combat Dawn Meats proposal, “from data recently provided by the EPA that water levels in The River Boyne dropped by c. 20% in July and August this year alone.”, if Dawn Meats is allowed to go ahead with this plan, the river will be exposed to more waste, people and species will be effected. (Meath Chronicle, 2022) These people grouping together to advocate for their local area, the biodiversity and rivers condition are enabling environmental justice to occur, “Environmental justice also expands the concept of environment to include public and human

health concerns, in addition to natural resources such as air, land and water”. (Sze, 2020)



Image 3: Going with the flow to Save the Boyne on river protest.

Source: McGovern, 2022

Power & Injustice

In a world where authority is key, Dawn Meats play an unequal part in this struggle, Dawn Meats are a powerful business with a workforce of 1,800 people in Ireland alone, perhaps the reason the County Council did not deny their request was because they employ people in Ireland and create big revenue. (Dawn Meats, n.d.) Knowing that even if people contested their new pipeline, which four hundred people put objections in against, they would be too powerful to stop, “science, policy, and democracy are dominant models of ordering the world.” (Liboiron, Tironi and Calvillo, 2018) One way to counteract this power injustice is representation, as seen in the picture above, a peaceful protest to show their beliefs that the pipeline should not go ahead. (McGovern, 2022) Sometimes “justice appears as a problem concerning the ways in which broad social struggles are rewritten, often by state and legal

institutions, as ‘things’ with protocols and procedures designed to respond to” which sometimes can leave activists feeling powerless and that a big business has all the influence. (Liboiron, Tironi and Calvillo, 2018) The people living along the Boyne or using the Boyne for any activities will be affected the most, these people have no choice, if this pipeline is installed, but to deal with it, “Environmental health scientists are beginning to document the health effects of disproportionate urban pollution exposures and their impacts on the education and life chances of disempowered populations”. (Sze, 2020)



Image 4: Gill Higgins, group sustainability director at Dawn Meats and its UK subsidiary, Dunbia, with group chief executive Niall Browne

Source: O’Brien, 2022

100 million: Enough to sway the decision?

Dawn Meats released on the 6th of December 2022, that they are going to give a 100 million investment to help reach a target of net zero operational emissions by 2040, it is convenient that this article was released now because An Bord Pleanála was due to make a final decision on the 9th of December,

“Dawn Meat said it plans to invest in new infrastructure at its plants, including thermal energy generation and more efficient refrigeration systems”. (RTE News, 2022) This comes as quite the surprise as they have no moral conscience for building a new pipeline for wastewater into a River that will change the balance of an ecosystem, in this article Niall Browne CEO of Dawn Meats articulates that, “Dawn Meats has an opportunity to continue to positively impact the supply chain as well as our communities and environment”, but he fails to mention the ongoing battle he has for a new pipeline for wastewater and how there is discrepancies in his Environmental Impact Assessment, that his team put forward. (RTE News, 2022) The power that Dawn Meats have will come out on top, there has not yet been a final decision, will justice prevail or will locals loose to a big company once again? When will we stop immense companies do what they want? Will we have to sacrifice our environment because of the personal agendas these profit hungry corporate business have? Will local activism be enough or will something else have to change?

Conclusion

In conclusion, one can see from protesting can give a voice and power to a group of people, who feel that a decision is out of their control. Dawn Meats are a big company, and one could feel powerless against them, especially with the investments they make to help the environment, and when organisations may not be fully unbiased. Activism is one thing to raise awareness about a cause that a group is enthusiastic about, thus ‘Save the Boyne’ was made, 9.4 thousand

people agree with the movement against Dawn Meats no matter how successful and powerful they are. Environmental Injustice is seen so clearly here, a big company against people of poor, uneducated socio-economic backgrounds. Organisations like Meath County Council and An Bord Pleanala which not always see the two sides of the argument and ignore new evidence on the case against Dawn Meats. There is still yet to be a decision ruling on this matter was due to made on the 9th of December but has been pushed out again till after Christmas.

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Environmental Justice in the Northwest

Author: Ciara NicCatháin

“Fracking pollution knows no border”

(Friends of the Earth, 2022)

Northwest Ireland: Known for its charming beaches, tranquil landscapes, rich heritage, and sheer beauty. Perhaps less well known for its struggle to overcome hydraulic fracturing attempts in recent years. Yet, this has been a major issue in this part of the country, such as county Leitrim, that would have not only disrupted the tourism aspect of the area but would have also generated environmental complications disturbing the local communities. County Fermanagh, which could be considered part of the ‘Northwest’, has also faced these struggles, and continues to face them. However, it is the only county listed as ‘shale rich’ in the Northwest carboniferous basin (GSI, 2022) that is not in the Republic, and hence faces additional struggles. As the title suggests, this blog will be dealing with the issues Fermanagh and surrounding counties face when it comes to fighting for environmental justice in a border area.

Hydraulic fracturing, or fracking, is defined by the Environmental Protection Agency as the process by drilling engineers to stimulate or improve fluid flow from rocks in the subsurface, such as in shale gas reservoirs, for the extraction of oils and gasses (Healy, 2012). It comes with many potential impacts, as the 2012 Irish Environmental Protection Agency

report has outlined, such as producing seismic activity, contaminating ground water from gas and chemicals, releasing harmful gases into the atmosphere, and the leakage of contaminated drilling waste fluid from storage ponds (Healy, 2012).

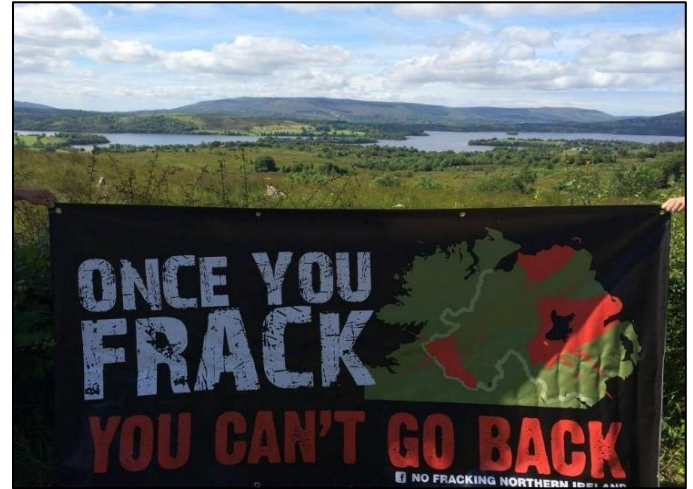


Figure One: Anti-Fracking Sign in Fermanagh

Source: Ban Fracking Fermanagh, 2022

The Environmental Protection Agency have acknowledged these impacts by looking at real life examples, such as earthquakes from fracking in Blackpool and explosive eruptions of drilling fluids in the United States, as proof that fracking is in fact very damaging to the environment (Healy, 2012). In light of this evidence, anti-fracking activists and groups in the Republic of Ireland, particularly in the potentially affected areas, came together to successfully ban fracking. The ‘Petroleum and Other Minerals Development/Prohibition of Onshore Hydraulic Fracturing Act’ 2017 (<https://data.oireachtas.ie/ie/oireachtas/act/2017/15/eng/enacted/a1517.pdf>) came to pass in the Republic after years of activists successfully fighting for

environmental justice in their area. One group of activists that were prominent in this fight against fracking included 'Love Leitrim', which was considered to be the most active anti-fracking group in Ireland (Steger and Dreihobl, 2017). This group fit the narrative of typical opposition movements to hazardous industry, as suggested by Allen (2004), being 'spontaneous local and rural fishermen, farmers or urban poor', and they did a lot in order to 'get undone science done' (Hess, 2009) regarding environmental and human health research. This civil society organization "challenged elites" in order to make social and environmental changes in an area of research that was ignored by scientists (Hess, 2009), which was the human health impacts of fracking in this case. As Averette (2020) has suggested, researchers and scientists can learn a lot about undone science concerning environmental research from the people living in close quarters to the polluted domain, such as the efforts of the 'Love Leitrim' campaign to investigate fracking in their area. They questioned the science by asking questions such as "who does the science and for what purpose?" (Steger and Dreihobl, 2017). The deficit model can often be seen as a "frame war" where protesters struggle to be taken seriously, are said to have insufficient knowledge and are given titles such as 'hippies' that delegitimize them (Steger and Dreihobl, 2017), yet saying that, 'Love Leitrim' managed to be seen as 'credible' and 'very reasonable' (Steger and Dreihobl, 2017) due to their innovative community engagement with politicians

(Gorman, 2021) This undeniably helped them in their victory.

As we have seen, the Republic of Ireland's efforts to combat recognition injustice in terms of government decision making around fracking was successful as of 2017, however, it is important to take a step back and consider the type of communities that were faced with these challenges. As Leitrim has been the focus so far, we can use this as an example of a county that could be considered marginalized and therefore an easy target for industry. It is the lowest populated county in Ireland, has very limited infrastructure and relies heavily on agriculture and tourism as economic activities (Gorman, 2021). It is quite literally marginalized as it is geographically located on the border between the North and the Republic of Ireland. County Fermanagh is also marginalized in this way being located on the opposite side of the border to Leitrim, relying on farming and tourism, and having the lowest population in Northern Ireland (Office for National Statistics, 2021) This marginalization gives the people of the county a disadvantage in their struggle to overcome environmental injustice, and it is worth noting that these people could be considered vulnerable as they have already endured many struggles such as their post conflict past in 'The Troubles' (LAMP Fermanagh, 2022). The underdeveloped and somewhat ignored region of the Northwest was an ideal place for fracking companies to set up projects as it was assumed that the local communities and landscapes of the area were not worthy of protection against the damage fracking can do, and more value

was given to the economic advantages that would come with oil and gas extraction than the people themselves (Gorman, 2021). The fracking company Tamboran Resources Ltd was granted with a license to explore petroleum extraction in an area covering around 750km² of county Fermanagh by the UK Department for Enterprise, Trade and Investment (Craig et al., 2019), and although the extension of this license was refused by the government of Northern Ireland, the company managed to reapply due to the lack of constraint on fracking. This shows that despite community opposition to fracking in Fermanagh and a clear desire for a ban on fracking, their concerns were merely being “managed, not addressed” as suggested by Eddie Mitchell (2021) of ‘Love Leitrim’.

The frustration endured by the potentially affected Fermanagh communities at Northern Ireland being the only part of the UK and Ireland without a sufficient fracking prohibition (LAMP Fermanagh, 2022) is not exclusive to this area. Surrounding counties in the Republic, such as Leitrim and Cavan, experience the same frustration as their work towards the ban on fracking in 2017 is almost meaningless if onshore fracking can still occur minutes down the road. For this reason, the ‘fight against fracking’ on the island of Ireland continues (Friends of the Earth, 2022), with campaigning groups such as ‘LAMP Fermanagh’ taking inspiration from the Republic of Ireland’s success.

These campaigners have recognized research on human rights impacts of fracking, have acknowledged that human rights would be violated

by fracking (Hickie and Geoghegan, 2021) and have used this knowledge to their advantage in an appeal to the government for adequate fracking regulations. Not only would human rights be violated in terms of the ‘Right to Life’ or ‘Right to Health’ where fracking pollution could be detrimental to the health of communities, but basic rights have already been violated where the lack of public inclusion in decision making processes contradicts the ‘Right to Public Participation’ (Hickie and Geoghegan, 2021).



Figure Two: Fermanagh’s Fight Against Fracking

Source: Ejatlas, 2014

However, the violation of the ‘Right to Access Information’ was an important factor in these activist groups doing their own research into ‘undone science’ as it came out that the research conducted by Hatch Regeneris for the Northern Ireland Assembly on the impacts of fracking did not look at

the health impacts on locals (Fermanagh and Omagh District Council, 2021), which spurred great controversy amongst local communities. You might have noticed that even the impacts outlined by the Environmental Protection Agency, as mentioned earlier, did not refer to any kind of human health or well-being effects of fracking. To top it off, evidence of heavy industry influence in the Department of the Economy in Northern Ireland, such as former GSNI members that were involved in compiling research into the risks of fracking and that ended up working for the fracking company Tamboran Resources Ltd. (LAMP Fermanagh, 2022), undoubtedly raised public concerns in the bias of scientific research.

All this combined, activists in the North have been working tremendously to be heard and to demand research that would aid policy in the public's interest such as human health science rather than just environmental science (Oreskes, 2004). Friends of the Earth used a compelling and effective tactic of celebrity endorsement with the well-known American actor Mark Ruffalo reaching out to Sinn Féin and pleading with them not to “sell out Northern Ireland to the fracking industry” (FOE, 2022).

Meanwhile, public awareness of the issue is being maintained with article after article suggesting the implications of fracking in the North, and what must be done about it. A film project produced by Fermanagh and Leitrim locals in response to the Northern Ireland political allowance of exploring hydraulic fracturing has been played in community theatres and in the Stormont parliament buildings to

spread the word of activist groups (Development Media Works, 2013).



Figure Three: Mark Ruffalo Protests Fracking in the UK

Source: Friends of the Earth, 2022; Mark Ruffalo Twitter, 2022.

It must be said that these efforts have been somewhat successful, with the announcement from Minister Lyons of the Department of the Economy in February of this year that he strongly supports a complete ban on fracking in Northern Ireland (which can be seen here: [Minister Lyons announces a Ban on Fracking in Northern Ireland February 8th 2022](#))

(Hargan, 2022). However, as this statement was made only weeks before the Assembly was due to be dissolved, the planned ban cannot be brought forward without an executive in place (Hargan, 2022). Only time will tell whether anti-fracking activist groups and communities in the marginalized regions of Northern Ireland will be as successful as their neighbours in the Republic have been.

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Recycling: Conservation, Preservation and the Things that Matter

Author: Roisin Martin

This essay aims to explore if recycling actually conserves and preserves things that matter, focusing specifically on plastic. While conservation and preservation are intrinsically linked terms, conservation relates to cutting down on the need to extract resources, while preservation relates to preventing some environmental damage from occurring (Mac Bride, 2019). While many argue that recycling is an essential way to sustain the environment and reduce pollution, there are many obstacles which make recycling of plastic a lot more complex. One simply cannot suggest that by recycling alone, conservation and preservation will occur and positively impact the environment. One must also consider the type of plastic product, scale of production, way in which it is recycled and desired outcome of preservation. In addition to this, by stating that the way in which plastic is recycled conserves resources and preserves ecosystems, one is making assumptions that it is done successfully in ideal circumstances, which is not always possible (Mac Bride, 2019). In order to gain a greater understanding of the complexity of recycling plastic, the history of single use products will be explored to examine how this became a global issue. In addition to this, the limitations of recycling and how individual's opinion are impacted by large plastic producing companies will be discussed. The

responsibility of recycling, misconceptions and incentives to encourage recycling will also be highlighted to gain a deeper knowledge of such a pivotal environmental concern.

During the early 1900s plastic was only produced on a smaller scale which meant it was a manageable material and did not have grave consequences on the environment, in comparison to the scale of plastic production in the 21st century. It was not until 1970-1990 that plastic waste generation tripled, which highlighted a similar rise in plastic production. According to UN records, by the 2000s the amount of waste generated by plastic rose more in a single decade than it had in the previous 40 years (UN,2022). Today there is approximately 400 million tonnes of plastic waste produced every year, with Ireland generating 1.12 million tonnes of packaging waste in 2020 alone (27.4% of this waste is plastic). Despite this, Ireland met EU recycling and recovery targets for 2020, even though there only was a 1% decrease of packaging waste since 2019 (EPA, 2022). This highlights that although recycling is occurring, the scale of plastic waste being produced is having a harmful impact on the environment. If these historic trends continue to occur, global production of plastic may reach 1,100 million tonnes by 2050 which reveals why recycling, preservation and conservation of natural resources is a fundamental global issue that needs to drastically improved (UN,2022).

A misconception, that is often accepted as fact is that by recycling plastic, oil and gas resources are conserved. Mac Bride states that many believe

through recycling, used materials stand in for raw materials. This recycled content then reduces the need to extract resources (conservation) and thus reduces environmental damage that would have occurred without recycling (preservation) (Mac Bride, 2019). It is further suggested that without evidence of the ‘actual amounts and origin of materials used as inputs, it is not possible to evaluate the actual effect of plastics recycling’ has on protecting the environment (Mac Bride, 2019). Some experts further believe that recycling plastic is not financially or environmentally sustainable due to the scale of plastic being produced. Research indicates that many large plastic and fossil fuel producing companies promote recycling as the primary solution to preserving the environment in an attempted to distract from their overproduction of plastic (Altman, 2021). It could be argued that in an ideal setting, the main way of conserving materials and thus preserving the landscape is by preventing the amount of plastic produced. Due to the recent growth of plastic production, especially within the last fifty years, some argue that society is past using recycling as the sole protection from pollution. Instead, within future years strict government bans on plastic production should be implemented to prevent more damage to the environment.

It also needs to be addressed if the responsibility to recycle plastic is on the consumer or the manufacturer. While the scale of household consumption is generally lower than the manufacturer, in order to tackle such a large issue all parties should be educated and involved. According

to the EU Waste Frame Directive, prevention of waste is the most preferred option and sending waste to a landfill should be a last resort (European Commission, 2019). In order to abide by this Directive, the prevention of plastic in manufacturing should play a fundamental role in conserving resources and preserving the environment. However, Mac Bride argues that plastic recycling is one of the most misused claims and that there is a misconception on the impact recycling would have in tackling large issues like pollution and climate change. She also states that there is a lack of evidence of what more plastic recycling would do to ‘diminish overall ecosystems withdrawals of fossil fuels.’ (Mac Bride, 2019). This suggests that if manufacturers prevent large scale production of plastic by using alternative materials, it will conserve natural resources and create more of a significant impact than recycling plastic once it has already been created.

In recent years, some large scale manufacturers have commented on the necessity for plastic recycling. Although, some question whether their intentions behind promoting recycling are genuine or to promote and ‘green wash’ their business. For example, Coca Cola has been named the biggest plastic polluter for the previous four years, yet are the sponsors for the COP27 climate conference. Many argue that this undermines the objective of the event by allowing Coca Cola to sponsor. Hocevar argues that Coca Cola, ‘produces 120 billion throwaway plastic bottles a year – and 99 per cent of plastics are made from fossil fuels, worsening both the plastic

and climate crisis' (Frost, 2022). In addition to this, reports show the extent of Coca Cola's pollution with 58% of 330,493 pieces of plastic waste collected from sites clearly marked with the consumer brand (Frost, 2022). Experts believe that recycling alone will not solve the plastic crisis and that large companies will not reduce their plastic production, as their main concern is profit over people and the environment (Break Free from Plastic, 2022). This suggests that recycling alone will not actually conserve or preserve important resources because the scale of plastic being produced is too large.

According to studies, it is thought that only 9% of all plastic ever produced is recycled with the best global estimates suggesting the current recycling of plastic rate is about 20% (Break Free from Plastic, 2022). These studies highlight that the scale of plastic being recycled is not enough to make a significant impact of conserving natural resources and preserving the state of the environment. While the importance of the prevention of waste by manufacturers has been explored, the responsibility of consumers should also be examined. Studies shows that in Ireland, about 200 million disposable coffee cups are thrown out each year, which is 22,000 cups being dumped per hour. While many believe coffee cups are made of paper and easy to recycle, most cups contain a thin plastic coating of polyethylene. This plastic lining acts as a barrier and enables the paper cup to keep its shape when in contact with a hot liquid. However, this coating also makes the cups extremely difficult to recycle which negatively impacts trying to preserve the landscape.

Hawkins argues that the very idea of calling things 'disposable' shows that 'they were made to be wasted and not reused...[and] that their imminent future as rubbish is palpable before we even pick them up' (Hawkins, 2019). This highlights that disposability is a fundamental part of the modern capitalist economy and consumer society, with impacts on the environment being a secondary concern for many. The acceptance and demand for single use products undoubtedly does not aid trying to preserve the environment.

Some consumers try to recycle disposable coffee cups as they do not have the knowledge about the plastic coating of polyethylene. An EPA survey shows that only 29% of the Irish population know to put disposable cups in the residual bin, with 52% putting them into the recycle bin (EPA, 2019). Some consumers may also adopt the wishcycling approach when trying to recycle plastic goods that they are unfamiliar with. As stated by Altman, 'wishcycling is the process of placing discards into the recycling bin even when there is little to no chance for their recovery.' (Altman, 2021). Perhaps, by engaging in wishcycling individuals are putting non recyclables in the bin because it feels necessary as a result to the mounting pressure to recycle. Many consumers are also encouraged to recycle by plastic producing brands that often promote recycling as the primary solution to plastic waste. It could be suggested that the key to conserving natural resources and preserving the atmosphere, is by preventing the large scale production of plastic rather than recycling it once it has been used.

There have been a number of tactics developed to try discouraging consumers from purchasing disposable products which would have a positive impact on preserving the environment. However, many of these suggestions do not relate to the recycling of plastic but rather from discouraging consumption. For example, a 2018 EPA Irish survey indicates that 64% of population agree that there should be a levy put on single use plastic cups (EPA, 2019). This shows that the majority of the public have an interest in conserving natural resources but may not have the knowledge of how to do so within their household. However as of November 2022, the proposed coffee levy has not been fully introduced into the Irish society. The draft of the levy has been discussed to allow the Irish society to accept or oppose the twenty-cent levy on single use cups and the ban on disposable coffee cups for sit in customers. This highlights that recycling may not be the most significant way to conserve resources but rather government incentives to prevent the mass scale production plastic items.

Considering the best global estimates indicate the current recycling of plastic rate is about 20%, one can see that recycling does not make as significant of impact as desired (Break Free from Plastic, 2022). One may suggest that recycling does not play a vital role in conserving fossil fuels and preserving the landscape in comparison to the effect of prevention. By preventing and reducing the production of plastic, natural resources are conserved and the landscape is preserved. In addition to this, prevention is mostly directed at large scale

companies that pollute the most, rather than shifting the blame towards smaller households. Government incentives, for example the proposed coffee levy could have a successful influence on plastic waste, similarly to the 2002 plastic bag levy. The 2002 plastic bag levy resulted in a 90% drop in plastic bags with one billion fewer bags used (Irish Environment, 2015). This suggests that the way in which plastic is recycled today is not as effective due to the scale of plastic produced and that preventative measures are key in protecting the environment.

To conclude, it could be suggested that plastic was created to be and still is considered a profit driven material. There are a number of misconceptions relating to recycling which include consumer education and how companies promote recycling to be the most important way to protect the environment, rather than focusing of the large plastic production. There is also a common misunderstanding regarding the benefits of recycling to conserve natural resources and prevent damage that would have occurred without recycling. Many experts argue that there is a lack of evidence which indicate that recycling plastic should be the main focus in trying to prevent environmental damage. Instead, according to EU Waste Frame Directive, prevention of the mass scale production of plastic is the most preferred option which will have the most significant impact conserving resources and preserving the environment.

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Disposability: A Woman's Problem

By Laura Cullinane

For many the conversation on female hygiene and menstruation is often not talked about, but when it is, there is little mentioned about the effects of menstruation and the consequences that follow. In most cases a woman will on average menstruate for forty years of her life (Borowski, 2011), over that period a significant amount of feminine hygiene products will be used, usually consisting of single use products like tampons, pads and pantie liners. A singular woman will use around 10,000 menstrual pads in her lifetime alone (Tu, et al., 2021), with a study carried out in the US it has been discovered that 12 billion pads and tampons are used once and disposed of after use (Borowski, 2011). This accumulates to a significant amount of waste over an annual rate; apply this then to the 3 billion women in the total population and the total volume of menstrual product waste will increase dramatically.

Originally there were no such things as pads or tampons, ladies used to design their own form of menstrual products suited to them and the time period. Past centuries saw women using natural items such as leaves, hay and bark that easily absorbed the menstrual blood in ancient times. Yet across the world women used multiple different items for the same purpose; China saw the use of materials such as grass, ash or hemp put in small cloth bags, used to absorb the fluids in an easier fashion. Once used, the material inside was discarded

and the cloth washed and reused without any environmental consequences (Tu, et al., 2021).

Progression through the centuries has seen the development of new products to keep up with the busy lifestyle of modern society (Tu, et al., 2021). 1888 was the year that the first disposable pad was developed by the brand Johnson&Johnson (Hait & Powers, 2019). From here on the industry for feminine hygiene products became more popular with rapid production. This then led to the development of tampons which soon came to follow. Increased production was seen after World War II (Hait & Powers, 2019) to keep up with the demand for the 'new' products because of the rapidly growing commercial industry in the 1960s and the 1970s (Hait & Powers, 2019). The years following the war saw the usage of tampons and pads start to increase expeditiously, more than ever before as they were more commonly advertised and the judgement towards any form of female sanitary and self-touching was brushed over (Fourcassier, et al., 2022). With the newfound comfort in tampons and pads the production of a new form of waste resulted due to their convenience and heightened popularity; and again the human race became inheritably wasteful without any knowledge of how globally impactful these new convenient products actually are.

With such popularity the industry was booming, and the menstrual products were doing well, but with that there was a limitation. Pads and tampons were really the only accepted type of product, even though the menstrual cup was on the market, there was not much interest in this particular product as it was seen less

convenient and unfavourable. The product of most popularity, past and present, is the pad. This product is unsurprisingly designed with plastic as its main component, composed of 90% pure plastic in one pad including plastic structure and plastic packaging (Fourcassier, et al., 2022) thus meaning that the production of the pad is made from non-renewables (Hait & Powers, 2019). One pad alone is equivalent to four plastic bags, this alone adds approximately 2 grams of non-renewable and non-biodegradable plastics in the waste system (Fourcassier, et al., 2022). Tampon production also contains large amounts of plastic usage, with the majority of tampons containing a plastic applicator for comfortable usage (Borowski, 2011), but tampons contain significantly less plastic packaging than that of menstrual pads.

Comparing the past and present use of menstrual products, it is evident to see that design of these 'new' products has resulted in a significant amount of excess plastic waste being discarded into the environment for the benefit of modern life, increasing the acceptance of easily disposable products. At this popular stage of feminine hygiene product production little was asked about the composure of the products being manufactured and little did the female population care about the impacts these products were having on their health and the health of the environment.

The disposability of feminine hygiene products is one of the reasons as to why the products gained such popularity, all one must do is purchase the product, use it and discard it, which is total user cycle of the

product. Unfortunately, the cycle is not that simple, instead it follows the linear economy model that is subject to major obstacles along the line. Most products are discarded in few ways, some are put into landfill, flushed down the toilet or incinerated but a large number of products are improperly disposed of, this as a result causes multiple problems (Leites, et al., 2021). A study was carried out to assess how menstrual products were discarded, the EU and US showed results that 80% of tampons and 20% of pads were flushed down the toilet and around 3% of products were incinerated. 20% of pads were also said to be sent to landfill (Fourcassier, et al., 2022). With the majority of products being flushed down the toilet complications in relation to sewage systems occurred in a number of different areas, causing a board plumbing issues across a number of different countries (Borowski, 2011), showing that human wastefulness contributes to more than one problem than just landfills.

Both pads and tampons are major contributors to solid waste in the environment, due to their large composure of plastic they stay in the environment for long periods of time. Pads are said to take up to 50 years to decompose in the environment (Tu, et al., 2021), but this is an old unreliable estimate, as it is now said it can take plastics up to 500 to 800 years to decompose (Fourcassier, et al., 2022) and considering pads are composed of mostly plastic their decomposition is much longer than previously researched. Removing the plastics from tampons and pads would seriously reduce their decomposition time, reducing the environmental impact (Borowski,

2011). With some discarded products, through incineration, there is little benefit as there is some serious negative impacts on the environment even though we think we are doing good, but we are in fact not helping at all.

Disposal of sanitary products is a complex process that links straight back to their production. The life cycle assessment (LCA) of pads and tampons showed shocking information on how products are made and how their disposal is heavily chemicalized. This type of production is extremely dangerous to both the individual using the product and emissions during the process of creation and disposal causing ample issues for the global environment.

During the production of sanitary products, most sanitary products are bleached to be more appealing to the user, but this type of chemical addition could possibly generate dioxins (Borowski, 2011). A dioxin is a type of chemical that is carcinogenic; this type of chemical is also closely related to other types of diseases such as Type II diabetes, skin disease and heart disease on a normal basis (Hait & Powers, 2019). Adding to the danger is the fact that these products are used in a very sensitive area of the female body, where the blood barrier is highly sensitive and absorbent, meaning that the diffusion of these types of chemicals is much easier than other places in the body; in turn increasing the females body exposure to the chemical.

Originally there was no doubt in the products just positivity towards them because of their handiness, but soon women discovered a darker side to the

products due to the amount of discomfort and infections seen (Borowski, 2011). In the late 1970s the safety of women was questioned due to an increased number of cases of Toxic Shock Syndrome (TSS) noticed with the usage of highly absorbent products (Hait & Powers, 2019), that was soon to be correlated to the usage of tampons. Not long after this in the 1990s women became increasingly worried about dioxins in the products during usage and manufacturing stage (Hait & Powers, 2019). This increased knowledge saw the rise of female activism with groups like “Women’s Voices for the Earth” protesting for detailed documents of product composition (Hait & Powers, 2019) to inform women of what they are putting in their bodies and what they are discarding into the environment, hence leading to increased interest in LCA. The demand for research and investments in old and new technologies (Leites, et al., 2021) saw the formation of the Robin Danielson Feminine Hygiene Product Safety Act of 2015. This act was passed to obtain funding for research to investigate the risks that are correlated to feminine hygiene products and their usage (Hait & Powers, 2019).

The disposal of these sanitary products has shocking consequences on the environment. Due to sanitary products coming into fashion so rapidly, humans put little past on how they had just created a new form of waste that would cause issues for hundreds of years after they were manufactured (Fourcassier, et al., 2022). Their disposal is the product of many other dangerous environmental issues. With incineration thought to be the best option for the products instead

resulted in more environmental issues. The product must first be chlorinated to disinfect the pad. Once this completed the incineration of the product begins releasing the material associated with dioxins. So once the materials are burnt there is ample amounts of chemicals being released into the environment as a result. This then increases the risk of these chemicals and dioxins getting into the air we breathe, the water systems we drink from and foods we grow, entering the food chain which could be dreadful for humanity (Tu, et al., 2021) if the amount of chemicals keeps increasing.

Increased knowledge about the products composition and their environmental impact has seen the rise in reusable feminine hygiene products (Fourcassier, et al., 2022), to reduce how wasteful the original products are. New technologies made use of biomaterials with an eco-design in mind to optimise the engineering of sanitary products (Carlucci, 2012). From here menstrual management (Kjellén, et al., 2012) came about and the switch to reusable feminine hygiene products commenced to try diminish the effects of non-reusable products on the health of the environment and women (Fourcassier, et al., 2022).

The movement towards greener products such as reusable pads, menstrual underwear, menstrual cups and sea sponges may all benefit the impact that menstruation has on the environment and effect on female health (Borowski, 2011). For the disposable products switching to organic material may also be of benefit to the environment, the usage of organic cotton instead of synthetic material will rapidly

reduce the decomposition time in the environment (Borowski, 2011).

The launch of these new reusable and biodegradable menstrual products has been taken up positively by females, they are open to the new types of ideas, as the understanding of the body has increased, usage ability and performance are also more greatly understood (Tu, et al., 2021). Females are more open in accepting sustainability and potentially changing their lifestyle to positively reinforce their daily lives; reducing the ideas of mass production, mass consumption and mass waste (Tu, et al., 2021), and swapping this mind set to reusable products made of sustainable materials that have been sourced efficiently.

A survey was carried out on 160 women to discover whether women knew the impacts of the products they were using, their environmental impacts and what their opinions are on reusable products as alternatives (Borowski, 2011). Many of the women were open to switching to the reusable products but a major factor that appeared to deter the female population is that the products must be manually cleaned, which was less appealing to them as their convenience was unmatched to that of disposable products (Borowski, 2011). A large amount of the women were concerned about the cost of the products also, because the cost of biodegradable products are much more expensive than synthetic products (Leites, et al., 2021), even though the availability of the materials are more readily accessible (Hait & Powers, 2019).

When examining the reusable and non-reusable products there is significance in the amount of waste produced as a result. The menstrual cup was seen to have the least amount of solid waste associated with it and has less than 1.5% effect on the environment making it the most suitable type of product to move to (Hait & Powers, 2019). The other products showed lesser waste but were not comparable to menstrual cup. The lifecycle of the products are much longer than that of the original products first produced. Period underwear and reusable pads are said to have a lifespan of 5 years, not only does this decrease the cost of purchasing products over then 5 years but also reduces the amount of solid waste as a result over the years (Fourcassier, et al., 2022).

Moving away from non-renewables is effectively the most popular way of reducing waste, but these products still must get to the customers. The production and distribution of the products still follow the linear economy model just with the solid waste at the end of the system being lesser in volume. The number of emissions created as a result of reusable products is near enough to the same amount as the production of non-renewables. These products often have to travel thousands of miles to reach their final destination, meaning that the usages of oils and gases are still heavily involved in their makeup. These products also take up a lot of energy to clean, using non-renewable energy which is not greener towards the environment (Fourcassier, et al., 2022).

Overall the move to more sustainable menstrual products will in fact reduce the amount of solid waste and chemicals getting put into the environment but

the amount of emissions is only slightly reduced. Although there is much interest in the movement to reusable, some women are not as keen on making the final switch, but overtime hopefully their minds will change. Even though the development of these types of products will decrease the amount of waste overall it does not affect the fact that humans are still highly wasteful, and that past action are result of many problems that is faced by the environment today. These types of new technologies and sustainable developments will allow for some change but there is much yet still to be done across this sector and many other sectors that surround it.

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Northern Ireland as a Space of Exception

By Beyer Torben & Dan Bauchinger

In this Essay I will try to discuss if Northern Ireland is a state of exception. For that, I will first of all trace the theoretical concept state of exception from Giorgio Agamben and focus specifically on the spatial aspects described by Claudio Minca. Afterwards I will give a short historical context to the causes of the partition of the island Ireland and combined with the consequences, in forms of how Northern Ireland is governed, it will give me the foundational arguments for my discussion of the main thesis that Northern Ireland is a state of exception.

In this paragraph I will take up Agamben's theoretical framework and especially try to describe the concept state of exception. Agamben suggest to that when we look into modernity we have to do it with a biopolitical perspective (Minca, 2007: 81). He talks about 'the politicization of bare life' (Minca, 2007: 81) as a foundation of modern state and also criticise the failure to dividing the individual human life from the political sphere (Minca, 2007: 81). Agamben specially looks at the intersecting sphere of political techniques and technologies of the self (Minca, 2007: 81). Political techniques as the state making the care for natural life to its foundation and technologies of self as limiting individuals to their own perceived identities but also external powers (Minca, 2007: 81). This, as he describes, inclusive exclusion of bare life and the political sphere

constitutes the notion of sovereign power (Minca, 2007: 82). These sovereign spaces are constituted within a double exception, the indistinction between sacrifice and homicide (Minca, 2007: 82). These indistinctions expressing through spaces in which the sovereign sphere is a sphere where killing is no homicide, but also where sacred life is existing which means individuals can be killed, but not sacrificed (Minca, 2007: 82). Agamben defines the outside as a passage or exteriority which grants access and the image of a space of 'norm' (Minca, 2007: 90). Through this passage and relation between those spaces, power expresses itself and produces spaces of exception (Minca, 2007: 90). Spaces of exception evolving in a world with unclearness and uncertainty in which they constantly moving and multiplying (Minca, 2007: 90). The decision to constitute a permanent state of exception leads to the indeterminate of all legal concepts and laws (Minca, 2007: 90). So, the creating of states of exceptions divides the norm from the social production within the society, in order to force norms onto individuals. Therefore it creates a sphere of anomie within the legal order to implement the norm and normalize individuals (Minca, 2007: 90). The contradictory about it, is that in the name of law, it tries to reinforce a norm by creating a sphere of anomie in which the law and norms doesn't apply. That leads to a violent struggle over states of exceptions, because the creation of anomies of the law (Minca, 2007: 91). A state of exception has to hold the juridico-political machine together by producing separately concepts like anomie and norms, life and law (Minca, 2007:

91). But when these distinct produced concepts come together and get blurred in the state of exception, the system evolves into a 'killing machine' (Minca, 2007: 91).

First of all the state of Northern Ireland was defined in the Government of Ireland Act 1920 as temporary and emergency state (McVeigh & Rolston, 2021: 205). As we can see the foundation of the definitional characteristics of Northern Ireland determine a state of exception. The sectarian legacies of colonialism of native catholic and protestant settlers were further reinforced by the creation of the state Northern Ireland (McVeigh & Rolston, 2021: 208). It drew boundaries that a part of the island Ireland could remain under the control of the United Kingdom and under protestant control (McVeigh & Rolston, 2021: 208). The continuing colonial control and protestant political control led to a minoritisation of catholic population enforced through the defined state of emergency (McVeigh & Rolston, 2021: 207; 208). Governmental tactics were taken over by the Northern Irish state from the martial law of the imperial parliament, which abandoned in the name of normalization, civilizing the Irish population, the ruling law in the UK and created new laws (McVeigh & Rolston, 2021: 212). As examples of abandoning the law, officers could search and arrest people without a warrant and a total suspension of civil liberties if decided (McVeigh & Rolston, 2021: 214). It is reinforced by the heavily armed state forces legitimized by the notion of emergency (McVeigh & Rolston, 2021: 212). This shows clearly the contradictory characteristics of the state of exception

described by Agamben. The state also created as a demarcation to the catholic Irish state and a member of the United Kingdom and the identities as a demarcation to the defined oppositional 'irish' identities (McVeigh & Rolston, 2021: 209; 210). That refers to the theoretical framework which describes a space of exception not beyond and separated to other spaces, but in relation. In that way again the state Northern Ireland and Northern Irish identities is founded and produced as a state of exception. The unionist community hold all of the political power and could decide about the distribution of resources and treatment of all people in Northern Ireland (McVeigh & Rolston, 2021: 222). This led to a completely one-sided distribution and oppression of the catholic community which is also expressed in the many civilian death by state violence (McVeigh & Rolston, 2021: 221). But as in earlier described they are produced not as acceptable in the hegemonic discourse at the time because they happened in a space of exception (McVeigh & Rolston, 2021: 222). As we can see the intentions causes and immediate consequences of the partition of Ireland and the creation of Northern Ireland can be seen as characteristics of spaces of exception. In that way Northern Ireland is founded as a space of exception.

Now I want enter a little bit more on the way how Northern Ireland was governed more recently and if it is still a state of exception. Through direct rule implemented in 1972 the protestant majority lost the sole control over the state and political power (McVeigh & Rolston, 2021: 237). The direct rule

lasted in most periods before the Good Friday Agreement and still lasts in periods after it (McVeigh & Rolston, 2021: 238). So even in more current periods the parliament of the state Northern Ireland is not working and the population is ruled by Westminster (McVeigh & Rolston, 2021: 238). That means citizens of Northern Ireland have most of the time no own political representation because their government don't work. That refers clearly to the thesis that northern Ireland is still a state of exception because the constitution in forms of governmental representation is for some periods suspended even if the intentions of Westminster shifted more to ensure the same treatment for both heavily sectarianized communities. And I would argue that Northern Ireland is still a state of emergency because of example like the Bloody Sunday in 1972. Even if it happened in not a completely contemporary period, the only reason it could happen was that Ireland is founded as a state of exception. Bloody Sunday were British army soldier killed unarmed civilians during a civil rights protest shows the amount of legitimized violence which could be used in Northern Ireland. It shows definitely the possibility of a state of exception to turn into a 'killing machine'. Only recently the British government apologized for the killings, but over a long period they were not considered as murders but as security measures, which could also only happen in the framework of a state of exception.

As my findings show, I would definitely say that Northern Ireland is founded as a state of exception and grounded on characteristics of one. It legitimized

the abandonment of the law to enforce the norm and carry on the aspects of colonialism to civilise the catholic 'native' population. Also the amount of legitimized violence used by the state to oppress the catholic population refers clearly to a state of exception. And even if the laws are made equal for the 'two communities' and the aspect of a not working parliament is still a hint for an state of exception because of it's rule by Westminster. That's why I would say that Northern Ireland is still a state of exception but of course not in the same extend like it was when it was founded.

Beyer Torben

The history of Northern Ireland is filled with political and religious unrest. Heavy sectarianism between Catholic Nationalists and Protestant Unionists not only brought back the extensive discrimination of Catholic Irish individuals from colonial Ireland, but it also was the cause for various conflicts between these two groups. After partition in 1921, Northern Ireland got its own government to rule. It was mainly made up of Unionists, since a close majority in the nation was Protestant. However, by 1972, Westminster had to switch to ruling Northern Ireland directly. This has led to a state of exception being applied in Northern Ireland once again. And that time should not stay the last. This also brings up the question whether the country can in general be called a post-colonial space of exception? To answer this, we must first look to define "exception", take a brief look at the history of the island as a whole and finally

examine how Northern Ireland proceeded to be ruled. (McVeigh and Rolston, 2021, Chapter 7 and 8)

Met with special circumstances or emergencies, governing bodies of states can issue a state of exception. This creates a space of exception, which separates the norm in a nation from its application and therefore makes the application of exceptional rules possible. In other words, it is a state in which the normal legislation is suspended in order for the government to be able to go beyond the usual jurisdiction. This usually occurs when there is a special emergency to be dealt with. (Minca, 2007, p. 90). With the word "exception" defined and explained we can move on to another important background to the posed question: the colonial history of Ireland and the partition. The English have colonised Ireland in the past and established a number of discriminatory rules, most commonly known as the Penal Laws. These were meant to keep the Catholic Irish from becoming too wealthy or comfortable. The English also controlled the Irish population by simply letting the Catholics starve during the Famine from 1845 - 1852, which drastically reduced the island's population. (Kearns, 2013, p. 22; MacKenzie, 2022, p. 4).

With this kind of discrimination continuing on for many years, Irish nationalists wanted to restore autonomy for their country. Unionists were aiming to keep the island within the United Kingdom, fearing complete separation. (Rankin, K. J., 2007, p. 910) When the partition was enacted the Unionists drew the border not around the whole province of Ulster, but only around six counties. This promised

them that the newly constructed state would be 66 percent Protestant. This also trapped Irish Catholics and Nationalists within a Protestant state. In 1920 the newly constructed nation was put into a state of emergency and in 1921 the Parliament of Northern Ireland came into existence. With Unionists in power there came hyper-sectarianism. Being Protestant became an ethical boundary rather than just a religious affiliation and being Catholic would place one at the bottom of society. (McVeigh and Rolston, 2021, p. 206). As McVeigh and Rolston put it in Chapter 7 of their book: "... the new "Northern Ireland" took its *modus operandi* from the martial law of the imperial parliament through which it emerged." (McVeigh and Rolston, 2021, p. 212).

The Unionist government was obsessed with the loyalty of their people, therefore supporting the Protestant working class in finding jobs and providing state housing. Generally, Catholics would be treated badly in Northern Ireland as the Unionists reverted back to the default colonial position in controlling them. This discrimination led to unrest in Republican and Nationalist communities and violence erupted frequently. (McVeigh and Rolston, 2021, p. 212). However, in the 1960s a number of groups emerged protesting against anti-Catholic discrimination. Triggered by the unfair treatment, the Unionists now had to face a movement which was different from the previous threats. The protestors had no demands regarding the constitutional position of Northern Ireland. They simply demanded equal rights for all. Their intention was not to overthrow the state, but rather to unify the working classes.

Eventually, the marching people were met with state forces, and loyalists attacking them. The British army was deployed to support civil authorities, but they ended up acting more as an instrument of repression for the Unionists. The peak of all this was reached on "Bloody Sunday" (30 January 1972). Fourteen peaceful marchers were gunned down in Derry by British paratroopers. After this Westminster returned to direct rule in Northern Ireland. (McVeigh and Rolston, 2021, p. 229).

The Anglo-Irish Agreement of 1974 attempted to end the Troubles that started in the 1960s. It established the Anglo-Irish Intergovernmental Conference. This institution held regular meetings between ministers of Ireland and the UK regarding Northern Ireland. This arrangement, however, received severe backlash from Republicans and Unionists. Met with a lot of resistance, the Anglo-Irish Agreement failed to bring an end to the Troubles. (Tithe an Oireachtais, 2017). An actual end to the unrest was found with the Good Friday Agreement in 1998. It made Northern Ireland a lot more stable and peaceful and also implemented the power sharing dynamic between Unionists and Nationalists. While it stabilised the country, neither side of the agreement was particularly sold on it. While Unionists felt like they gave up too much, Nationalists felt they got too little out of it. (McVeigh and Rolston, 2021, p. 237).

From the general way the United Kingdom functions, and has made use of their power in the past, it can be argued that while Northern Ireland is not in a constant space of exception, it is proven that turning the nation into one seems to be an easy task

for the British government. Seeing as Northern Ireland is part of the United Kingdom, this means that Westminster has major influence and control over the government. This has been displayed well, when Westminster imposed direct rule over Northern Ireland during the Troubles in 1972. After urging the previous Unionist government to establish reforms without success, Westminster simply took back control and even partnered up with the South to keep an eye on the North and manage it. (McVeigh and Rolston, 2021, p. 229ff; Tithe an Oireachtas, 2017).

Slightly more recent evidence for Northern Ireland being a space of exception comes from Hegarty (1997). She writes about “marching season” in the North and how these Protestant marches are policed. In this context it is mentioned how the United Kingdom usually has an unarmed police force. Everywhere except in Northern Ireland. Here they are routinely armed. There have also been reports on plastic bullets or rubber bullets being misused and having hurt and killed people. Exactly for this threat, this munition is not used anywhere else within the UK. Now one could argue that due to Northern Ireland’s violent history, it would be dangerous not to arm police or use plastic rounds. But on the other hand, seeing as the North being part of the UK, it should fall under their legislation, which theoretically should be the same as in other parts of the nation. But still Northern Ireland seems to be an exception. Additionally, seeing as today police are still armed, this argument for calling Northern Ireland a space of exception, is also reinforced by a second factor: The GFA, which officially brought

peace to the North in 1998, which could have been a great opportunity to disarm police and establish the same standard in Northern Ireland as in the rest of the UK, when it comes to the police force. (Hegarty, 1997, p. 652).

There have also been several rulings against the UK in the European Commission and the Court of Human Rights in the past, due to a specialised legislative regime in place in the North. This consists of statutory provisions which form an emergency law. This includes things like routine stop and searches without warrants, seven-day detentions and the right to deny individuals the access to a lawyer. This gives the government extensive powers and with inadequate accountability mechanisms, it has spurred on allegations of ill-treatment and use of excessive force by the police and the British army in Northern Ireland. (Hegarty, 1997, p. 653).

Very recently the United Kingdom and Northern Ireland are now facing a new issue. Brexit. With the UK withdrawing from the European Union, but the Republic of Ireland remaining, this creates a EU border. This border could either be established on land or at sea to Great Britain. Either decision would leave either Nationalists or Unionists dissatisfied. Additionally, Brexit also changes the constitutional status of Northern Ireland even though there was an agreement stating that the status of the North could only be changed with the people’s consent. This means that the UK actively went against an agreement, with Northern Ireland, to get to their goal of leaving the EU. Here it should also be mentioned

that in 2016 Northern Ireland voted to remain within the Union. (BBC, 2016; Kearns, 2018, p. 280).

Having defined ‘exception’ and taken a quick look at the history of Northern Ireland and how it was governed after partition has led to the discussion of whether Northern Ireland is a post-colonial space of exception. Looking at the evidence provided by literature it can be said that the North is definitely still fighting its colonial past. Still being a part of the United Kingdom has also brought them certain parts of legislation that greatly differ from the laws in Great Britain. From special statutory provisions and armed police to the very recent overruling of their majority vote and changing of the nation’s constitutional status in regard to Brexit. With these examples Northern Ireland can be called a post-colonial space of exception, due to the fact that their legislation can be easily overruled by Westminster.

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Moro loves Suz: Commuting as Relational Trace

Author: Ronan Foley

Navigating Space

Across many branches of human geography, mobility and movement are central themes. In particular, relational geographies, with their emphasis on topological lines of connection, along which people move and interact in complex ways, reiterate the value of the spatial trace. The daily commute, specifically a commute by train, provides one example of such a relational trace; one that can be everyday and repeated, but that has specific imaginative, embodied and experiential dimensions. With due acknowledgement of cultural appropriation, it is also interesting to think of a daily commute as a form of songline, also known as dreaming paths or *churinga* tracks (Chatwin, 1987), sensory trails that navigate identity and practice, combining cultural meaning, shared place knowledge and carto-landscape in the form of a holistic sonic map. How might commuting generate a sense of a songline, transplanted to urban settings and consider as a relational trace with significant sensory underpinnings?

'Moro loves Suz'.

When I moved back to Ireland in 2003, one of the first things I noticed was a piece of graffiti painted on to a large metal container, near the railway stop at Broombridge station, as such texts often do, that *'Moro loves Suz'*. It is still there, if a little more

overgrown, 20 years later, with Suz's name almost obscured behind a bush (Figure 1).



Figure 1: 'Moro loves Suz', March 2023

I tried to see if it was accessible via Google Streetview only to quickly recognise, somewhat gratefully, that these are places Streetview does not reach. Materially, you see it in passing from the train as a portrait object, visible from a landscape viewpoint; wondering from this very public place-mark, who Moro and Suz are and where are they now, 20 years later? The personal – and technically illegal – act of leaving a mark on the city, is due to its linear visibility, passed on in turn to the viewer as the city leaving its mark on you. It's also a declaration of love, that like love maybe gradually fades over the years, but is remembered in the emotion of the time of marking in a semi-abandoned place. There is plenty of geographical writing around graffiti in urban spaces, focused on meaning, discourse, contested spaces and transgressive social orderings

(Cresswell, 1992; Kindyis, 2018). Other writing on graffiti, suggests that if a city is wounded, graffiti shows where it hurts (Moreau and Alderman, 2011), but '*Moro Loves Suz*' remains a lingering trace that demonstrates more affective and affecting markers on the train journey. Despite its location within the neo-industrial heartland of service industries, their declaration is, in songline terms, a sonic affective note on a spatial score.

Accretive places and traces

In tracing a songline through a regular/intermittent commuting journey across a 20-year period, how might that urban sensory and emotional place trace, fed by repeated viewing from the train, play out. In one strand it is a version of sensing the city (Schwanhäußer, 2016), a methodological approach that taps into the natural music of place, tuning in to what Vesely describes as the latent world, fed in turn by a performance and instrumentation and a linear relational geography. That rhythmic element, links in part to Lefevre's rhythmanalysis (2004) but also to older urban geographies of sensing the city and navigation going back to the 1970's. Yet, that rhythmic exposure involves a daily lived accretive agglomeration of cultures, practices, networks, identity-affiliations, shared mobilities; 'a verse, then a verse and refrain' (Mann, 1993) made concrete on a train. Other commuting trace work from Scotland (Bissell and Overend, 2015) follows a boat commute to Gourock, while work from Hong Kong identifies a health and wellbeing effect, purely through

repeated exposure to the sea on a daily coastal commute (Garrett et al., 2019). The links between train journeys and jazz are also a regular analogy for more imaginative soundscapes; the track representing the rhythm and structure of a piece, the imagination or a visible element such as *Moro loves Suz*, the improvisation within the view of the city acting as a form of spatial sampling in a musical sense, but always held together by the material and metaphorical lines of the track and the staff/stave holding you in place. Commuting is another form of place accretion, an absorption of knowledge and a repetition of older traces and yet also a daily cartographic act of intimate and shared, place sensing. For future students think about how you might record your own daily commute and narrate it via repeated recordings, diary entries, mobile phone records and other new recoding tools available. What might that trace mean to you? How might it shape your own social and cultural geographies? How does it inform your own awareness of the city around you?

Noticing

Just as when listening to a piece of music, we notice we haven't heard before, so too does the daily train commute lead to sharper ways of noticing. Every journey is subtly different, reflecting the relational nature of that journey framed by different passengers, different weather, and how we look or use other senses of noticing. This could be the way in which other passengers around you respond or let

the outside in; most are in mute worlds and spaces of their own, with their own individualised chosen soundtracks. Sometimes the sonic space is disturbed or shared in unwelcome ways, through an argument, an unexpected announcement that we notice as contrast to the otherwise church-like hush. Points along the line change. The arrival of the Broombridge Luas interchange shifts the micro-geographies of place; burned out seats replaced by graffiti-proof sculptural railings. More recently, the creation of a 'new' place called Pelletstown, a slow but subtle gentrification visible from the train at almost glacial notice. Noticing also has temporal aspects of attention restoration. I notice some bent railings in the early morning light at Blackrock Station and was curious as to how that happened. I could ask the train guards but have also noticed in smaller stations an increasing abandonment of staffing and the removal of human presence as the practice of commuting become automated. From being a train passenger *looking-down* on the world below, I am now part of a new relational geography living alongside a railway line and bridge, hearing the daily song and rhythm of the Dart and Wexford trains moving up and down their lines. I am now part of a *looking-up* world - from home to trainline - and have learned new ways of *not* noticing, such that I am only occasionally conscious of hearing a passing train, as it shifts to the background hum of the latent world. In living a life that is both on and beside the train, those daily exposures of active movement and passive homelife, do represent commuting in a relational form that provides a coherent sense of

place, yet is also accretive and multi-generational in how the track holds a new trace within the old and recognises earlier lines of sensed movements. In suggesting we add trace to place and space in the geographical lexicon, we should also recognise that such traces always act as sensory songlines that run along lines of connection, with points and combinations of points making the notes and the points of noticing along the track where we sing, and where care and love are expressed in unexpected but affective ways.

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‘Postcards from the Edge’: learning Journals for the GY347 Presidential Election assignment

By Siobhán Rowe, Jack O’Reilly, Abby Beale and Alannah Farrelly

Over the past few years, the main assessment work for the GY347 Electoral Geography has focused on getting the class embers to run their own election campaign in a *simulated electoral learning environment* (not at all a makey-up election). Each year’s campaign brings about different stories and different approaches from the students/teams, as politics is personal, and the different campaigns reflect the different personalities of different GY347 class. But elections are also rooted in geography, and this is something the students did learn as they progressed through the Elections Task, as can be seen in the following learning journal entries from some of this year’s class, including Siobhán, Jack and Abby.

Siobhán Rowe (played Laura Cullinane, campaign worker for Sterre Loughnane, Harp Party presidential candidate)

Neema Henry, Sarah Gallagher and I were representing the former Green party candidate, Sterre Loughnane, and her team members. Looking back on it, we probably wouldn’t have picked Sterre again. As a Green Party member, she has a lot going against her and it was hard to talk about and mention policies that the voters would want and listen to; it also meant that would be under scrutiny from the other

candidates. We had to always lean towards green policies, which was sometimes hard to write about. Saying this, it was nice to represent a woman going for the presidency. Despite increasing numbers of women in the Dáil, women still face barriers and are underrepresented in key positions of power, such as cabinet ministers and party leaders. Women often face gendered barriers in accessing political networks and financial resources for campaigning, leaving them at a disadvantage compared to their male counterparts. Keenan and McGing (2022) also highlight that the media’s coverage of women in politics often focuses on their appearance, family life, and personal characteristics, rather than their policies and qualifications.

When we started first with the primaries our first strategy was to demoralise the opposition by constantly posting and by posting in every county, this is something that the three of us did very well together. We used the pre-election events to build up momentum which worked. We got momentum from trying to win in the “early counties”, even though they only had small amounts of delegates. Our strategy worked like Barack Obama’s. In 2008 Obama won Iowa. Although Iowa is a relatively small state, winning there was significant for Obama because it gave his campaign momentum and helped to establish him as a serious contender. We did this for Sterre and it worked very well, as we won all five of the early primaries. The strategy for the Paddy’s Day Palooza, in which contests were being held in thirteen counties on the same day (similar to “Super Tuesday”), was to try to get some votes everywhere.

Our campaign strategy was to leave no stone unturned and to earn votes from every corner, not forgetting the proportional rule, in which Sterre would pick up delegates in every county, so long as she won at least 15% of the vote. Our main rivals, Ethan Novak (Fingal, Dublin City and South Dublin) and Pat Paterson (Cork City, Cork County), were expected to pick up a number of wins, as they had a local vote to fall back on in these areas. At the highly anticipated Paddy's Day Palooza, Sterre won 3 of the 13 primaries, but she managed to maintain a good lead in the delegate count (270 delegates), as she picked up delegates in all PDP counties. Sterre ultimately won the primary election contest, and we then had to think about the selection of a running mate who could help appeal to certain voter groups or add experience and expertise to the team in the contest with the Shamrocks.

We changed strategy from the primary election to the general election. With a total of 538 votes on the line, we need 270 votes to win. We now had to factor in the winner takes all rule, meaning that we needed to focus on vote distribution efficiency and bias in the Electoral College. We had to factor in the number of effective, surplus and waste votes. This meant that we did not want to chase after a large number of surplus votes in our "safe counties" and we had to remember that "winner takes all" so should not have campaigned anywhere in which the margin between the opposing party and ourselves was too large, as this would only bring about a big number of wasted votes. The 2016 US Presidential election saw Donald Trump elected as President, despite losing the

popular vote by almost 3 million votes to Hillary Clinton. The reason for this was due to the Electoral College system, which allocates votes based on the winner-takes-all system in each state, rather than the overall popular vote. Donald Trump won the Electoral College with 306 votes, while Hillary Clinton received only 232 votes. Trump won several key battleground states with narrow margins, while Clinton won many heavily populated states by large margins.

The local candidate effect would come into play at last. I used grassroots organising tactics here too, such as door-to-door canvassing to mobilise support and increase turnout. The study by Parker (1982) examined the impact of the "friends and neighbours" effect in the Galway West constituency during the 1970s. The "friends and neighbours" effect shows the tendency of voters to support candidates from their local area or community, like Clare in Sterre's case, even if they do not share the same political ideology or party affiliation.

Once the polls started coming out, as a group we decided to stop canvassing in counties where the Shamrocks' lead was too big (Donegal, Kerry etc) as we didn't want to waste votes. We then identified 16 counties where we would still canvas and we hit there, trying to spread ourselves out and make sure that an even proportion of us was hitting every county. I decided to target Cavan, Offaly, Limerick, and Cork County. Although some of these counties had only a small number of Electoral College votes, the Shamrocks were only leading us by small margins there, so I thought we could get them. As a

group, we didn't execute a particularly good strategy. For example, some Harp members campaigned in counties that we had a commanding lead in, e.g Dún Laoghaire-Rathdown, or in counties we were too far behind, e.g Sligo. From the third poll, we were behind by an estimated 223 Electoral College votes to 304 and this sparked us into making sure to focus our efforts on winnable counties where the difference between the Shamrocks and us was small.

Next was the Debate. I thought we were very impressive and thought we were the deserved winners on the day. Following the Debate, the highly anticipated final poll came out and showed that we were winning by a 270-253 Electoral College vote margin. Cork County was very much up for grabs with a big number of Electoral College votes (33) assigned to this county, and we were only behind there by a narrow 0.8% margin. We also were only a small bit behind in Laois, Longford, Offaly and Westmeath so I thought we could try to win these, while also protecting our own narrow leads in Limerick, Meath, Kildare and Galway. My strategy for the start of the week was to keep an eye on where the Shamrocks were doing all their posting.

This part of the campaign resembled the 2016 American election. There were several key swing states in the US presidential election such as Pennsylvania, Wisconsin, Michigan, Florida, Arizona, and North Carolina. These states were considered crucial for both the Democratic and Republican candidates to win to secure a path to victory in the electoral college. Similarly, we had the swing counties that both Harps and Shamrocks could

win, so we had to be tactical. A meeting was then held after the debate as a group and people were assigned certain places to campaign. I was given Limerick, Clare, and Galway County. I thought the allocation of counties and the people allocated to these, was not completely effective and I thought our strategy could have been vastly improved, but I found it very hard to voice my opinion about where I thought we should target. We should have put Sterre somewhere where we could utilise her given that there were bonus points in counties that the candidate was posting in - for example, we could have put her in Cork County if we were going to go after that county. Instead, we had her in Clare where she was in the lead, her home county, where she had already canvassed heavily and where she was there with me, one of the most consistent posters. We could have utilised her somewhere else. Only four people were allocated Cork County which I did not think was an efficient approach if we were going try to win that county, especially considering how many Electoral College votes (33) were on the line. At the same time, nine party members had been asked to post in Galway County, a county with a smaller number of Electoral College votes (20) and where we already had a not-insignificant 4.3% lead. In Kildare, a county with more Electoral College (24 votes), by contrast, we were leading by a similar margin (4.4%), but only had three people canvassing there. I did not believe this was very effective and I should have voiced my opinion better. We could have left some counties altogether where we already had a significant lead.

Mike Ryan hit Limerick three times after the debate, so I posted three long posts in Limerick shortly after him to keep our lead there. Mike was also all about the farmers and CAP in Limerick and Tipperary, so I also tried to engage with farmers in my posts. On the final day. I had two posts in the bank. After careful analysis, I decided that, while I thought my team members were trying to hold our leads in other counties but not going hard enough for Cork County, I wasn't going to attempt to go to Cork with my two posts. In Offaly (11) we were behind by 3.6% but Alannah Farrelly was holding that for the shamrocks with 2 posts in the last few days. I then looked at Westmeath, where no one had posted in the final days of the campaign. So, I said with my last 2 posts I would go after Westmeath as we were only behind by 2.5% and there were 11 Electoral College votes on the line. If we lost out on Cork County and Lucan, then my of winning Westmeath would make a big impact on the outcome of the election.

I enjoyed this Continuous Assessment. It was very interactive and as the election went on it focused more and more on critical thinking! It brought about aspects from both the U.S. system and the Irish system, and it gave me a real insight into what the elections are like. I gained knowledge about the Irish political system and the election process and how the geographies of Ireland played a huge part and especially how they have changed over time. A bonus was learning more about all the places of Ireland and different things/ topics/ sectors/ industries/ groups that relate to all the different counties and regions.

Jack O'Reilly (played Pat Paterson, Harp Party vice-presidential candidate)

I chose Pat Paterson as my persona because of the similarities with the politician Micheál Martin. Micheál Martin has been a politician for decades and has a good reputation. The opinion of the real-life politician was a factor in my decision making. The history of Fianna Fáil as a catch all party in the past is something I factored in when choosing my candidate. The past few general elections of 2011, 2016 and 2020 showed that the working class no longer supported Fianna Fáil but as a centrist politician they were not my target demographic (Kavanagh,2015). During a presidential election it is important to be viable for a large part of the electorate. I saw Pat as the best fit in this aspect. His character breakdown gave the remark that he was a man of compromise, a character trait that is quite useful to have and can be brought up in campaigning. His position on economic policy and Irish reunification were not radical, allowing for us to have some freedom and to appeal to voters. His gender and age would be useful in attracting the older populations. I felt that his team-member, Ndidi Bala, as a campaigner added diversity to the campaign. This diversity would be useful in urban areas where a minority woman would attract more votes. Pat came from Cork, an area I lived in and know well. This would be useful because of the size and influence of the county in the election. Being from outside Dublin was also another reason for picking Pat Paterson, as it allowed us to position ourselves as Ireland focused and not Dublin centric.

The primaries were divided into 3 stages. Leitrim and Louth first, Laois, Longford, and Limerick second and finally Paddy's Day Palooza. In Leitrim, and Louth we believed that spreading our forces and touching all areas was a viable tactic. I believed as president that targeting the country music fair was best and that Jim and Ndidi visit Louth. Luke as Jim Johnson gave us an advantage as he is from the county and has extensive knowledge. On reflection, the decision to split up limited our campaign. I believe focusing on the country music fair in Leitrim together would have boosted our profile and gain momentum. We also noticed at the beginning of the campaign that one of us was not posting as regularly as the other team members. I focused a lot of attention on Limerick due to the friends and neighbours effect, given its proximity to Cork, giving us a boost (Górecki and Marsh, 2014). We chose Laois as another area to focus on to try and gain delegates, but I believe we should have better targeted Longford as we could have used a win in a county to increase momentum. During the Paddy's Day Palooza we began our campaign with posting in Dublin to try and gain big numbers of delegates. Following the release of opinion polls that showed our core areas of Munster were under threat, the group changed tactics and focused on Cork County, Kerry, and Tipperary. Luke and Phil also targeted counties like Wicklow, Donegal, and Cavan to try and garner votes from across the country. This worked well for us as we came second overall. Reflecting on our tactics we should have begun with our core areas to bolster our vote and then move to

areas, where we were perceived to be weak based on polling figures. While we did come second in the primaries, we were against tough competition from the Sterre Loughnane team, which was filled with three effective and committed posters. During the campaign the perception of Pat Paterson was incredibly important. During the Leitrim primary Pat was criticised by the Ní Chaoimh campaign and we formed a strategic response. We decided to create a post by Pat that would refute all the claims by the Ní Chaoimh camp without impacting upon Pat's perception as a man of compromise. A more aggressive response was given by a supporter, Jim Johnson, effectively filling the "attack dog" role that can often be taken up by vice-presidential candidates in order to allow the presidential election candidate appear more "presidential" in staying "above the fray".

Uniting the party behind Sterre Loughnane following the primaries was seamless as the campaign was cordial for the most part. It also gave us an advantage for the Debate, as the Shamrocks had been quite aggressive in their own primary elections. Beginning the campaigning for the general election was difficult. Many Harp team members in the primaries had posted a lot and were burnt out from the attrition like design of the primaries. Following a bit of a break (in which the Shamrocks took an early lead), I and others began posting more to win the election. We believe that we made effective use of vote distribution efficiency. However, over-campaigning can clearly be seen in the results of Dun Laoghaire-Rathdown and areas of South Dublin, where Harp

team members were still campaigning long after it was obvious that we were sure to win these areas. Our tactic throughout the election involved dividing up counties among the group based on their strengths as a person and their character. In my case I was given Meath, as it is my current home, Cork County, and other counties in Munster due to my past and my election character hailing from Cork. As time went on our tactics changed to focus on areas, where the Shamrocks were slightly ahead, that could be won and other areas, where we held a slight lead, and which needed protection.

My posting for the general election highlighted the changes made to secure victory. I began with areas around Munster like Kerry and Limerick. The Shamrocks had a huge lead in Kerry and this marked it as a safe county for the Shamrocks, so we decided to campaign there less. Most of my posting focused on Cork County because it was a swing county. I targeted fishing communities, and rural towns to appeal to groups in Cork County. I also spent time in areas that were our but could be bolstered with more campaigning. Cork City became a safe area for the Harps and did not require more campaigning. The tactic of allowing a maximum of ten posts per student each week meant that we needed to be tactical and effective with the areas we needed to target. A tactic of ours was to continue posting in Dublin City, even though we were well behind there, to force the Shamrocks to keep focusing their efforts on the area, as it was a must-win area for them. This forced them to work to maintain their vote while we had the freedom to target core areas.

My duty in the Debate was to speak on economic issues and go on the attack, in which I focused on the Shamrocks' divided party, their divisive nature and their dark secret, which contributed to our party winning the debate among the electorate. Another aspect to mention was the fact that I manage to get an endorsement from a real politician, who would in real life have been from the Shamrock side of the political spectrum. This gave me extra credit and was useful during the debate. I believe that momentum was central to the general election. The debate shifted the momentum. Our performance, with the increased posting and better targeting of key areas in the wake of this, shifted the election. During the debate the attendance of nearly all the member of our team and the energy they offered was a form of demotivation for the Shamrocks, impacting the momentum. In the opening polls the Shamrocks were gaining counties, but poll by poll we regained areas such as Galway County, and Cork County and won Shamrock areas such as Meath and Limerick.

Mistakes were made in the campaign. In South Dublin I made the mistake of talking about housing in an area where house prices are huge, and people are wealthier. I campaigned about the wrong subject in the wrong area. I learned from this by reflecting more on the key aspects of an area before posting. In Kilkenny, I called Kilkenny City, Kilkenny town which is a grammar mistake one could pick up on. In some counties I announced my departure for other areas, which was a mistake to make in campaigning as it might suggest that these other areas are viewed as being more important.

The nature of Irish politics is very localised and so my posting focused on local issues facing towns and villages across the country (Kavanagh, Durkan and D'Arcy, 2021). I believe this task has taught me more about the geography of Ireland. I was required to look up local areas across counties and learn about their traditions, history, and culture. In relation to elections, I learned of the need to create momentum. I felt that in the primaries we did not create enough momentum to change the course of events. The general election gave us the momentum required to win. In relation to becoming Pat, I made it a priority to be a man of compromise during the campaign. I did not insult or attack. I felt this worked in our advantage by avoiding confrontation. I believe there were moments in the primaries and following the debates I could have been more aggressive against the opposition. We learned after the results that Laois was a swing county and could have been integral in winning the election, leaving votes behind. Our campaign had been hesitant to target the area as it had a large Shillelagh campaign there, along with potential opposition from the Shamrocks, but in the end there was only one small post in Laois from either of the main parties and this effectively handed the county (and its 11 Electoral College vote) on a plate to the Shillelaghs and could have stopped us from winning the election had the Shamrocks posted one or two times more in Cork County, Westmeath and Lucan.

I understand the growing left-right divide that is emerging in Irish politics more in recent years. The ideologies of parties were not a core focus from the

Harp campaign. I do believe the Shamrocks did this better than us. The Harps party were made up of the traditional centrist parties of Ireland with a voter base that is middle class, urban focused, farming communities and landowners (Kavanagh, 2015). I believe that the ideological divide was not clearly defined by the parties in relation to policies. My own political beliefs would be more aligned with the Shamrock Party, and I found it quite enjoyable to campaign against my own political instincts. The experience did not change my beliefs but gives me a different perspective of politics in Ireland. I think that the American aspect of campaigning came out through my posts highlighting the huge crowds and grand speeches to thousands of supporters. This is an uncommon sight in Irish campaigning, as a lot of it focused on visiting towns and people. Campaigning by Luke focusing on specific people in society managed to get high marks and was something I factored into future posting.

I preferred the task over an essay. I think giving us this task allowed us to show our personal skills, and ability to adapt in a controlled manner. The task made us more invested in the module and highlighted key module concepts, such as “mo-mo” (the important of building momentum) and vote distribution efficiency.

Abby Beale (played Sheila McEneaney, candidate in the Harp Party primary election)

During the election task in GY347 I played the role of Sheila McEneaney, a 39-year-old Fine Gael party member. In the process of this task, I have truly

undertaken the core concepts of this course and applied them in every aspect of the election I could. There were definite struggles, as will be outlined in this journal, however, this task has been the most effective way for me to learn a course's content this year.

Character Choice: The main reason I chose to play Sheila was her location. Sheila comes from Naas, Co. Kildare, and having lived in Kildare for three years, I know the area and respective small towns and villages extremely well. I also identify as a woman, which made the process a bit easier, as I could imagine myself as a slightly older woman who is extremely motivated. However, her political stance differed to my own, which was exceedingly difficult to get into the head space for at the very start of the election. Yet, upon reading up on the Fine Gael manifesto for the elections, I slowly began becoming more comfortable and "out-there" as Sheila. I also believe, and still do, she would be a feminist, at least to a point, and therefore I found it easy to promote women in politics through Sheila. This led to issues down the road, as discussed in the primary elections section, however, by filling in details about her that were not given in the brief made it easier to relate to Sheila.

A slightly smaller reason for choosing Sheila was her team members. Going into this class, I had a group of friends who were pulled into the Harp Party as well. This meant that we could choose a character that would play to our geographical and knowledge advantage. The role of Elizabeth Guilfoyle-McNulty was a big draw to us as a team, as the person playing

her is from that area herself. Going into this task we were incredibly positive in our potential success, as we had intimate knowledge of the areas all three characters were from, and their political beliefs fell into line best with our own in comparison to other Harp members. We also felt positive about our chances due to the artistic skills of one of our members, who was able to photoshop "Sheila" into any manner of locations. As friends, I expected this to work to our favour as we knew each other's work ethics, however, I now think that going in with friends was to our detriment. There was one infrequent poster in our group, which will be discussed in the primary election section.

Primary Elections: I was determined to use momentum to our advantage straight out the gate of the election task. Momentum can benefit candidates in elections as "early victories provide candidates with the capability to acquire needed resources for future contests" (Scala, 2020, 928). This task did not feature actual material resources, but early victories would provide big boosts for candidates in other counties as their name gets out there more. One of the biggest failures of our team was not effectively using the materials provided by the lecturer. For example, another person in the class showed me the breakdown of delegates towards the end of the primary election, which by then was too late for us. This serious blunder cost us effective votes, as we decided to chase votes according to areas we knew slightly well or would fit into Sheila's policies. As stated by O'Donovan (2020), effective votes are votes that are "crucial in winning...electoral college

votes.”, and to campaign in areas that are swing states, instead of staunch supporters of a particular party.

While we never insulted the voters, our team decided to stir up the competition a bit to try to create some momentum around Sheila. In the very first primary of Leitrim, we tried to say that “Pat Paterson” was not one of the country music loving people, unlike Sheila with her cowboy hat. However, this slight dig seemed to go unnoticed. We then made the mistake of going after Ethan Novak. My innocent statement that the men in this country have ruled long enough, was completely misunderstood by Ethan, and what started as a small issue spiralled into a long back-and-forth. However, come the general election, Ethan and I felt that this spat was over, and reuniting the party in the wake of this issue would be no problem. In comparison to the arguments that the Shamrock Party had in their primaries, we felt that come the General Election, we could almost use this as a “we’ve had our fights, but it’s nothing in comparison to them” storyline, if it were brought up.

Our main strategy going into the Paddy’s Day Palooza was to target the Border Counties. In Leitrim we had established that Sheila’s grandmother was from the county, therefore establishing as much of a “friends and neighbours” effect as we could. Coupling that fact with Sheila’s Ministerial position for EU and Foreign Affairs, we thought that this strategy would be one that could really work in our favour. The Westminster Agreement talks were taking place during this time, so we felt that as a team, we could gain a few votes that we had not yet

picked up. However, as mentioned before, one of our team members was not as active at posting, nor as motivated, as myself and Elizabeth were. We had divided up the Border Counties as evenly as we could, hoping to get effective posts in before the deadline in each, yet this did not happen as was planned. In fact, our third member did not post at all during the Palooza, seriously damaging our effectiveness.

The General Election: Part of the strategy that was in place when discussing where to target, was to look at how many electoral colleges votes a county had,, as this contest would be like the winner takes all rules for the US Presidential Elections in which “the candidate who wins the most votes in a state takes all that state’s electoral college votes, regardless of the size of their winning margin” (Kavanagh, 2020). While in the primary election I did not pay attention to the task assignment materials, come the general election I had created an Excel File and highlighted the counties with big electoral college numbers that looked close enough so that we could target them effectively. The strategy was that if we were ahead, or behind, by 10% then we would target that county. No county could be considered a “stronghold” unless over this mark. As each opinion poll came out, we could quickly change the focus to another area if needed.

One aspect of the course that my team did not get to use in the primaries was the “friends and neighbours” effect, which the other candidates got to use to some degree during primaries, as the primary elections were over before the Kildare primary could take

place. However, once the general election began, we all decided to target the counties that were swing counties, and that we had a Harp person from. In my case that was Kildare, which I then canvased until the end of the election, along with Meath, due to the friends and neighbours effect: “a candidate is most likely to be best known near to his home area and for a variety of reasons this may well induce voters close by to cast their vote for him.” (Parker, 1982, 244). While I was not the Presidential candidate, by using the friends and neighbours effect and our own local popularity, we were influencing voters in our home areas to vote for the Harp Party candidate.

Before the Big Debate the Shamrocks were ahead in the polls and climbing with each new poll. This rattled us and made us hunker down more to see what would be better places for us to target, such as Cork County. While we understood that the Shamrocks may win the popular vote, we were optimistic that we would win the Electoral College, as Trump did in 2016, and hence avail of a seat bonus. As stated by Kavanagh (2016), seat bonuses are when a candidate wins “a higher share of the electoral college vote than their percentage share of the popular vote” (Kavanagh, 2016). As the election results came out, we did not need to worry about seat bonuses, as the tallies were in our favour.

Conclusion: I felt that the Big Debate, and now the results itself, echo Irish society perfectly. While there is a rise in left-wing parties, and while the polls may have them in front, for the near future, Ireland will not see a drastic change. There were aspects of class learning that helped, and hindered, my own primary

race, and by the general election I had a greater grasp on these concepts. While I had a backseat in the general election, this made me more objective to the task and the two parties, making it easier to distance myself from “Sheila.” This distancing was an issue during the primaries, where I really felt that I had become her a bit too much, especially when each poll had “Sheila” losing repeatedly. This task was the most engaging form of assessment I have ever had, and if I were to redo it, the only thing I would change is paying more attention to the provided materials.

Alannah Farrelly (played Mary “Clocky” Carey, campaign worker for Sheila Moran, Shamrock Party Party vice-presidential candidate)

As a student, doing this elections task, I was able to learn many new aspects about Geography and elections. “The electoral system determines the format according to which votes are cast in an election and the process by which seats are allocated on the basis of those votes.” (Sinnott, 2010: 111) The candidate that Ana (Ni Linneain) and I chose for our mini-team (Sheila Moran_ was decided because of this, as well as her location (Dublin’s North Inner City) and her gender, given that “voter backlash against women seems unlikely given previous research indicates that the Irish electorate is not biased against women candidates” (Mariani et al, 2020) I figured that as we learned more about the gender quota, Sheila’s drive for environmentalism and her position in the Green Party would make for a good candidate for Ireland and she seemed very electable. For my role as the campaign supporter, ‘Clocky Carey’ was chosen because I liked how

much experience she seemed to have, dipping her toe in both sides of Irish politics. I liked how she would connect to those in rural Ireland and campaign on behalf of Sheila, and later Mike Ryan (the Shamrock Party presidential candidate) to get their word and aims across to the people.

Ana and I decided that it would be best to do a lot of work in the early primaries. Towards the end we strategised to bomb all the small counties, paying special attention to those that we gathered that we would have good support in. I made sure to create radio and speech posts to make them more personal and reach a lot of people. In the end, I think we got a good advantage by doing that and gained some “Mo-Mo”, a term I learned more about during class. Mo-Mo really helped us after the early primaries as I learned that if you start off early, you already have people talking about you in the rest of the primaries and decided to keep that up. I thought this would be very effective while moving on to the rest of the primaries, and I found that it worked out well. We had a very good strategy that paid off very well as we ended up second overall. If we were to become first, we would have definitely needed to be even more active in the early primaries, which we were not. As others started suspending their campaigns (or fleeing the country), I thought I would still need to be active to keep up the momentum. In the main primaries, I found that it was actually best to target areas that were close to our candidates and personas. For the Paddy’s Day Palooza, I thought that it would be really good if I was really active and continuously writing posts in all the counties to get Sheila’s plans

and actions out there. I definitely thought that it would give us a lot of momentum and remembrance through the rest of the primaries and luckily enough we came second.

Moving onto the general elections task, the teams of Mike Ryan and Sheila Moran really joined together and worked great as a team. We made sure to look at the polls constantly and plan strategically regarding who should, and would, have more of a voice in campaigning in certain places. We had to be mindful of ‘winner takes all’ electoral rules, where “the candidate who wins a state takes all the electoral college votes allocated to that state” (Kavanagh, 2016). I did find that it did work in some of the counties we campaigned in, although we could have done more elsewhere. I really enjoyed my role as a ‘dustbuster’, where I looked through the campaign forum and caught out any negativity towards the candidates I was supporting. When the first dark secret was leaked, I was able to do the redacting on the document, which was actually quite fun in regard to deciding what to redact and what to leak. Unfortunately, I did not have that chance for the second secret as there was a leak and it was redacted by a couple of other team members, which did a good job. I think I possibly enjoyed a bit too much fun digging up a bit of dirt on the other candidates, especially Martina Linden, the Shillelagh vice-presidential election candidate and self-styled Eurovision “legend”. I did have a chance to make good use of the assignment guidelines handbook that we got at the start of the module to see what bad press and non-supporters said or thought about different

candidates and could go off of that. Any slander that came from others, I rebutted back and caught them out on a few things in the mindset of ‘Clocky’ and discussed their lack of experience. In relation to what content I decided to post, I was again using the handbook to see what the candidates stood for and what their opinions were on in regard to the economic policy and many more aspects. So, I then came up with ideas and policies that they ‘plan’ to accomplish and use them in different outlets of a speech, chat show, or as just a regular post.

I personally think that I could have campaigned more in the swing counties, toward the end of the general election to boost the votes as they ended up being a close call against the Harp party. I did take advantage of a couple of neighbouring counties in the Midlands, like Offaly, Longford, and Westmeath. Looking back at it now, I should have done a lot more in Westmeath as I think I concentrated too much on the other two counties. I thought it was best not to really campaign in Laois, as first, it was clear that the Downey/Linden team would win there and, although it was a swing county, I figured that it was probably best to focus my energy elsewhere. As it transpired, this county was very much winnable up to the last days of the campaign, especially as the Harps didn’t really canvass there either. When it came to campaigning in the different counties, I based my posts on the news that surrounded it. Due to this, I was able to grow my knowledge of Ireland and the news that surrounds it in a deeper context.

When new polls came out during the elections task, our team was very communicative regarding where

we really needed to focus our attention. We strategised on what was reflected in the polls, although I personally feel like I could have done more elsewhere in different counties. I learned a lot more about how geography really affects the election process, especially with the way that people need to be clever in deciding where to campaign and how “geography shapes the candidate selection processes of political parties” (Kavanagh, Durkan and D’Arcy, 2021). By actually doing the work and actions, I personally feel I learned a lot more than if I were to write an essay, that maybe wouldn’t have made much sense to me at the time, but now as I was actually a part of it, I definitely felt like I learned so much more, especially about the gender quota and vote transfers. If I had the chance to do this again in the future, I would really make sure to be very active and not make the same mistakes I did as it could have won us the election and not campaign in a place that could lead to *wasted* or *surplus* votes. I would also make sure to be more ethical as I noticed that I was a bit harsh to some of the candidates (*Martina Linden says: “Surely not?”*) and if this were a real election, I gather that I would have been in a lot of trouble. I was really proud of the way we worked together because we all listened and communicated in a great way as we really made use of the Teams chat. Also, I was really happy with the strategic plans that were created. One thing I was unhappy about was the leak of the first dark secret as I felt that my work was illegitimate. For me, the St. Patrick’s break hindered us a bit because I think we thought we were doing great up to that point, and the break stopped the

momentum for me, and I found that we didn't have the same activity we used to have.

Overall, the elections task was really fun to be a part of and I learned a tremendous amount of knowledge, not only about Ireland and how important geography is to elections but also in regard to teamwork and how important it is to have a good team to succeed well. Looking at some of the literature Adrian Kavanagh provided for us, also helped me grasp a better understanding of elections and how every aspect has a vital importance regarding how they work.

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Berlin: 'Standing by the Wall'

By Gerry Keans and Karen Till

In their second year, Single Major students in Geography engage in field-based studies outside Ireland. This year, students went with Professors Karen Till and Gerry Kearns to Berlin. Lectures in advance of going to Berlin covered the history, environment, politics and landscapes of a fascinating city that has been a primary focus of Karen Till's research, including the politics and places of memory in *The New Berlin* (Till, 2005, University of Minnesota Press, 2005). While in Berlin, through a series of walks and guest, student, and staff presentations, we focused upon a number of themes.

We traced colonial histories and anticolonial legacies (Figure One); we explored the legacies of the Cold War with its Wall running through a divided city (Figure 2); we learned from local experts about how the city faces our climate crisis (Figure 3), as well as the challenges people seeking asylum and other migrants face as they try to survive in a foreign land (Figure 4); and we spent time at sites where past National Socialist state-violence was perpetrated or commemorated in ways to imagine more just futures (Figure 5). Students had prepared studies of how particular places fitted into these diverse stories, and each student presented their work at a relevant place in Berlin (Figure 6). These reports were the basis of our field-class handbook and from this student work, four examples appear in this year's *Milieu*.

Sam Lynch looks at the history and legacies of a site which was, for centuries, the home of the royal family that made Berlin its seat of government. After the First World War (1914–18) and Germany's defeat these rulers abdicated while after the Second World War (1939–45) and the division of Berlin between capitalist and socialist states, this royal legacy was erased, only for the new communist people's palace to be similarly removed after the reunification of Germany following the fall of the Berlin Wall in 1989. Kerry-Ann D'Arcy considers how the Second World War was commemorated in Berlin by the Soviet Union. Of the 50–55 million civilians and 21–25 million soldiers estimated to have died as a result of the war, the Soviet Union suffered the deaths of 13–19 million civilians and 9–11 million soldiers. Shortly after the end of the final battle for Berlin, Soviet soldiers erected in the Tiergarten a memorial to their dead comrades. After the division of Berlin, this site was in the West and was later supplemented by an extensive commemorative landscape at Treptow in the East. In East and West Berlin the lessons of the fascist period were understood in divergent ways. With reunification, the state-perpetrated murders of undesirables (including six million Jewish people, between a quarter- and a half-million Roma and Sinti, roughly a quarter of a million institutionalized people living with disabilities, about 1,900 Jehovah's Witnesses, some 70,000 recidivist criminals and so-called asocials, possibly thousands of homosexuals), the Holocaust, has moved to the centre of commemoration. Lauren Davenport takes us to some

of these recent Holocaust memorials, all sited close to the renovated seat of government, the Reichstag. The repressive heteropatriarchy of the Nazi regime targeted sexuality and gender dissidents. Isom Whelan traces the legacies and modern flourishing a Queer Berlin with its sites of commemoration, assembly, and advocacy.

If you are a first-year student and if this sampling of student field-based studies in Berlin intrigues you, then become a Single Major student in Geography! We hope you will join us next year in Berlin (Figure 7)

Gerry & Karen

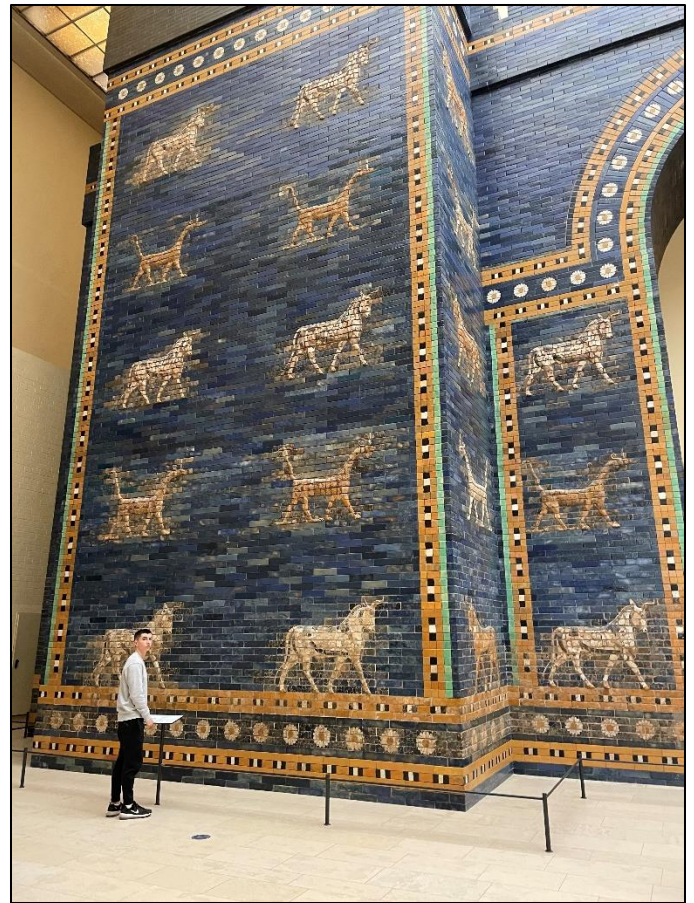


Figure One



Figure Two



Figure Three

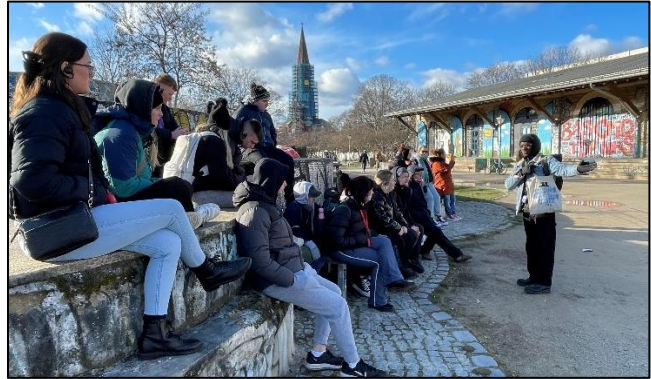


Figure Four

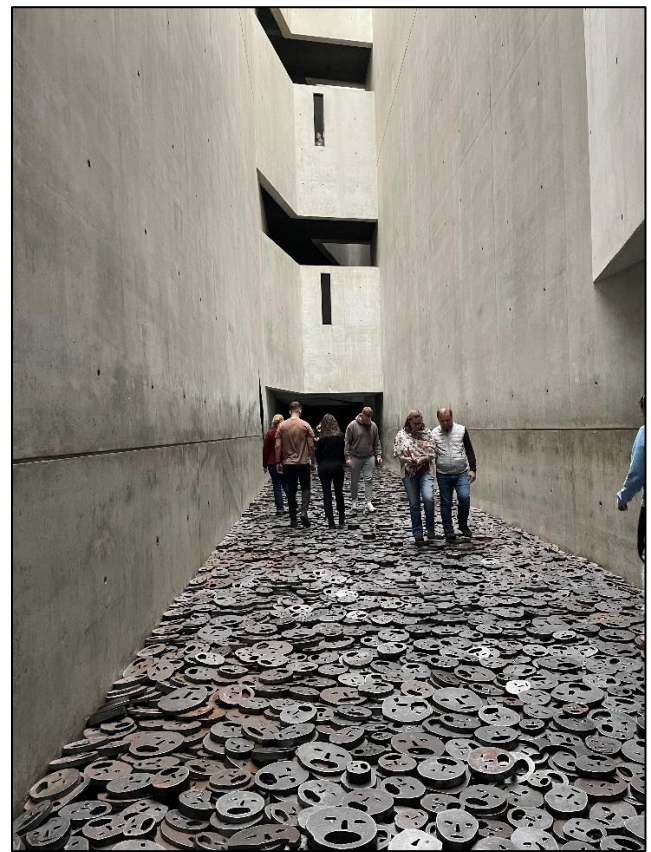


Figure Five



Figure Six



Figure Seven

The Berlin City Palace

By Sam Lynch

The Berliner Stadtschloss was built over a century after the union of Berlin-Cölln in 1307. The palace plaza, or Schlossplatz, was laid out in the mid-fifteenth century and replaced buildings located on the site islanded by the river Spree. It was a Hohenzollern, Friedrich the Second who ordered the purchase of the land and the demolition of the Dominican Closter to make way for his residence (Crimmins, 2012). Since Berlin was a town of only 8,000 people at the time of construction and always seemed small compared to the larger town of Cölln (located on the other side of the River Spree), some say that Berlin was born out of the new palace (Mahoney, 2015). According to Crimmins (2012), Elector Friedrich the Second wished to create a stronghold and a visual focal point to his power in a central location. His new city palace was completed in 1451. It was the decision to locate the new palace in Berlin that cemented the city's status as a centre of power, one that has been maintained to the present day (ibid).

Joachim the Second took down the original fifteenth-century palace and replaced it with a renaissance style palace towards the end of the sixteenth century (Mahoney, 2015). The new palace (see Plate 1) began to find itself the meeting point of many artists, actors and writers due to Joachim's renovations and the ongoing Reformation (Crimmins, 2012). These changes however did not

last long as violence and war plagued Berlin and the palace was severely damaged (Mahoney, 2015). The palace underwent its most drastic change in 1699 under the rule of Friedrich the Third -- later Friedrich the First of Prussia -- when it was enlarged into a Baroque palace by architect Andreas Schlüter (Sandes, 2012). According to Crimmins (2012), his intentions with the new palace designs was to evoke the idea of a new centrality and power. Since this renovation, the city palace saw little significant change to its structure. The construction of the Altes Museum (Old Museum) in the nineteenth century and further expansion north of the Spree helped the area affirm its position as a space for art and knowledge (Costabile-Heming, 2017).



Plate 1: The Renaissance Schloß

Source: Friends of Berlin Palacae Ev. (2023)

<https://berliner-schloss.de/das-historische-schloss/baugeschichte/>

After World War One and the abdication of Kaiser Wilhelm the Second, the palace became a multi-functional centre which served as a museum and residence of Weimar government officials (Crimmins, 2012). The city palace was badly damaged during the Second World War but not beyond repair. At the end of the war Germany and Berlin itself were divided into four zones of occupation, each controlled by France, the United States of America, Britain and the Soviet Union respectively. Located in the Soviet sector of the city, in 1949 the palace was ordered to be demolished as it was felt that it represented Prussian monarchy, despite protest from East Germans and international voices (Sandes, 2012). The site of the old city palace lay idle for over twenty years until the construction of the new Palace of the Republic to house the East German Government (1973 – 1976) (Staiger, 2009). The chief architect Heinz Graffunder said, ‘The Palace of the Republic as house of the people in place of the old castle as house of the Prussian kings and Kaisers is a symbol of the changed ownership in favour of the workers of our land, who were liberated from exploitation’ (Crimmins, 2012). The Palace of the Republic served as a leisure and conference centre as well as parliament building. The building was designed with a translucent window façade which was meant to demonstrate transparency politically as a parliamentary building shared with a public space (Staiger, 2009). The choice of location of the new Palace of the Republic was very significant to the communist regime as it is where the free socialist republic was declared on 9 November

1918 and workers demonstrations took place in the 1920’s. It can be said that the fact it was built on the former palace grounds symbolises communism’s victory over the monarchy (Costabile-Heming, 2017).

After the reunification of East and West Germany in 1990, the Volkskammer voted to close the Palace of the Republic (Crimmins, 2012). The building was called a ‘cuckoo’s egg’ and it did not seem to fit in with the newly united Berlin (Staiger, 2009). In 1993, it was decided that the Palace of the Republic would be demolished due to an asbestos contamination. This decision prompted a backlash particularly from east Berliners who felt like it was an attempt to erase Berlin’s Soviet history. Although the asbestos in the building was removed, due to protests, the building was not demolished and lay dormant until 2007 (Crimmins, 2012). Plate 2 shows an image of the empty Palace of the Republic in 1993. As Costabile-Heming (2017) says, it is clear that east and west Berliners have very different memories of the Palace of the Republic; where east Berliners see the Palace of the Republic as a cultural monument while west Berliners see it as a symbol of a failed GDR regime.

The future of the site was debated while the Palace of the Republic fell into disuse. In 1992, German businessman, Wilhelm von Boddien erected a life-size façade of the exterior of the Baroque style eighteenth century palace to show the public what the palace would offer aesthetically to Berlin (Sandes, 2012). The façade is said to have changed the mind of some Berliners, even those who had initially

opposed to the idea of reconstructing the baroque palace. In 1999, a commission was created by the Berlin Senate and the Federal Government consisting of seventeen experts to decide the fate of the palace site.



Plate 2: Palast der Republik

Source: ICON, (2009)

<https://www.iconeye.com/architecture/palast-der-republik>

On the 17 April 2002, the commission concluded that the Palace of the Republic should be razed and a new building called the Humboldt Forum be constructed (Sandes, 2012). In 2008 Italian Franco Stella won the position of architect for the Humboldt Forum. He decided that only the Baroque facades would be reconstructed on the north, south and western side of the building with a modern façade on the eastern side (Wolter, 2019). The project cost was set at 552 million euro, 440 million from Federal Government, 80 million from private donations and 32 million from the city of Berlin (Sandes, 2012).

Completed in 2020, the Humboldt Forum (see Plate 3) is still receiving criticism with some groups, such

as the 'Coalition of Cultural Workers Against the Humboldt Forum' (CCWAHF), even suggesting that the building be torn down. They believe that the Humboldt Forum represents an oppressive Prussian monarchy, Christian dominance and colonial entitlement. They also speak out against the presence of a cross on the roof and are critical of the museum in the Forum, which houses artefacts from Africa and Asia; the group claims these artefacts were obtained by colonial looting and see their inclusion in the museum as a document of violence (Larios, 2020). While opinion remains divided, it is a fact that the Humboldt Forum has helped East Berlin to once again become the city centre (Costabile-Heming, 2017).



Plate 3: Humboldt Forum, 2020.

Source: American Institute for Contemporary German Studies. (2020)

<https://www.aicgs.org/2020/09/the-anticlimactic-opening-of-the-humboldt-forum/>

In conclusion, the palace has had a turbulent history and it embodied many forms, identities and representations of the city of Berlin. It marked the growth of Berlin from a small village to a key

location in the global political landscape. Each of the palace's incarnations has been met with controversy, the latest of which continues to arouse debate to the present day. A recurring theme I noticed is that the city palace has come to symbolise the regime in power at the time. This symbolism can be found in the Baroque building expressing the power of the Hohenzollerns, the modern GDR Palace of the Republic purporting to represent open, transparent government under the communist regime, and now the Humboldt Forum, claiming to represent a new forward looking, unified Berlin while acknowledging its own past. This symbolism is often at the centre of debates as many argue that its communist past has been airbrushed from history. As Costabile-Heming (2017) puts it, the Humboldt Forum prompts a debate and dialogue about Germany's past as an imperial, divided and unified nation.

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Soviet War Memorials in Berlin: Tiergarten and Treptow

By Kerry-Ann D'Arcy

The catastrophic events of the Second World War and the Battle of Berlin cannot be expressed using words. Only those who have experienced it first-hand could truly understand the cataclysm. The objective of this report is to congruently conduct a geographical and geopolitical analysis on the spatiotemporal aspects associated with two Soviet War Memorials in Berlin, Tiergarten and Treptow. This will be carried out under five subheadings: *location, utilisation of space, functions as memorial sites, geo-political symbolism and their appearance in the present day.*

The memorial at Tiergarten was built shortly after the conclusion of the Second World War in November 1945. There is a strong and powerful emphasis placed on the soldiers' battle within this space of remembrance. The memorial at Treptow was under construction in 1946, and then finally erected in 1949. However, this commemoration site aims to highlight the immense hardship, suffering and grief experienced by Mothers who have tragically lost their sons during the Battle of Berlin.

Location:

Interestingly, the Soviet War Memorial in Tiergarten was built on the West side of the former wall. Figure 1.1 below shows that this memorial is located to the left-hand side of the Brandenburg Gate in what was

known as Berlin's British division (Crimmins, 2012). A clear spatial geo-political factor can be observed. Many people in the former West are unable to comprehend the significance of this memorial. They have an incomparable connection with Soviet participation in the Second World War, as opposed to those living in the East (Crimmins, 2012). Tiergarten is known for its extreme centrality in the city and is highly visible within a busy district in Berlin.



Figure 1: A map displaying the geographical location of the Soviet War Memorial at Tiergarten in respect to the Brandenburg Gate (Google Maps, 2023).

The famous architect Albert Speer had already made plans to dedicate a memorial to Nazism at this location, had Hitler won the war. He was aiming to intersect the East and West Axis. Subsequent to the actual events, the executive decision to place to Soviet War Memorial here was indeed a political strategy. This is a further reminder of the defeat of Fascism (Collins, 2020).

The Soviet War Memorial in Treptower Park can be found in the former Soviet district in Berlin on the East side of the erstwhile wall. The construction of this memorial in particular, sparked a geo-political attempt at re-establishing relations between the

Soviet Union and the Germans. The upheaval and arguments concerning the positioning of the memorial due to increased tension and power struggles was undoubtedly expected by both parties. The Soviet Military Administration (SMAD) had made the directorial decision to place the memorial in Treptower Park without any input from the Germans. It was then decided that soldiers buried in the districts of Lichtenburg, Treptow and Kopenick would be reburied at this site, also. Treptow has been restored numerous times by the Germans, even after the dissolution of the Soviet Union in 1991. The Treptow memorial consumes just twenty-five acres of Treptower Park's two hundred and twenty acres of landscape.

Utilisation of Space:

There are only thirty-five named soldiers of the two and a half thousand buried at Tiergarten. After construction, this memorial was said to be the largest structure in the entirety of Berlin (it was surpassed by Treptow in 1949). This created significant political hostility in the capital city. The layout of the Tiergarten memorial directly reflects its purpose - to serve as a reminder of the numerous militaristic sacrifices and achievements of the Red Army.

Upon entering the space, two of the first T-34 tanks that arrived in Berlin for the battle are visible (Collins, 2020). Behind these tanks are two artillery artefacts that were used to announce the conclusion of the war. There are steps leading up to the seven major columns with intricate gold lettering depicting

the events of the battle. A bronze statue is pedestalled upon a podium at its centre in Fig. 2. This is the focal point of the monument.



Fig. 2: The Soviet War Memorial at Tiergarten (Expedia, 2023).

Treptow memorial is not only the largest Soviet War Memorial outside of the Soviet Union, but it is also the most extravagant (Strangl, 2003). This is the resting place of seven thousand soldiers. A statue of a weeping Mother faces her son, who is both a soldier and the centrepiece of the memorial. The forty foot bronze statue depicts him holding a small child in one arm and a sword in the other, while shattering a Nazi Swastika at his feet - seen in Fig. 3 (Strangl, 2003). The sword represents the call to defend the Motherland from evil. The sword is pointing downward, it is no longer raised in defence. This highlights the victory of the war. People can live in peace now that the enemy is vanquished.

There are numerous interpretations of the symbolism within the memorial. The small child could represent hope for the future generations of the former Soviet Union and those living in communist regimes.



Fig. 3: A photo showing the bronze statue located in Treptow (Brown, 2012).

Another interpretation of the statue is that the child could signify all of the children lost in the war - the death of innocence. This child was saved, and innocence is free again. The shattered swastika could

be portraying the death of fascism in Germany, the eradication of Nazi ideologies and the black eagle (Strangl, 2003).

Treptow is also the site of sixteen stone sarcophaguses that portray Joseph Stalin's narrative of the Battle of Berlin. A resemblance can be observed between the purpose of these sarcophaguses and the Stations of the Cross. The granite stone from the battle itself had been used to construct the sarcophaguses, one of which can be seen in Fig. 4 below. This sarcophagus is depicting an air raid by the Luftwaffe and the terror placed on Soviet villages (Brown, 2012). Finding shelter was seldom during these attacks. On the left of Fig. 4, a woman can be viewed cradling and protecting her baby from the explosions. Directly on her right, a man is angrily waving his fist towards the planes, while a woman weeps in devastation below him. Another woman to the right of the image is beside a dead body trying to cover herself from the explosive debris.



Fig. 4: One of the many sarcophaguses found at Treptow. This one is showcasing the bombings by German planes on villages in the USSR (Brown, 2012).

Function as Memorial Sites:

Although, both Tiergarten and Treptow were built to commemorate the fallen soldiers of the Battle of Berlin, their functions as memorial sites differ. They both portray different feelings and aspects of the war.

Tiergarten was built to recognise the military achievements and sacrifices of the Red Army soldiers. It provides people with a space to pay homage to those who liberated the former Soviet Union from the German forces. Furthermore, the abundance of weaponry and arms at this memorial evoke feelings of pride and honour for the soldiers. The purpose of this site is to highlight the importance of the victory. It was a coincidence that the spatial positioning of the memorial was in the former West, this allowed the USSR to maintain communications with the British during the Cold War (Collins, 2020).

The memorial at Treptow was built to showcase the individual experience of Mothers who lost their sons to the Battle of Berlin. This space was used to advocate for the national identity of the Soviet Union. The memorial signifies immense grief, sorrow, sadness and devastation for the vast loss of life. Feelings that were once privatised are now publicised here (Strangl, 2003). The memorial resonates with, and has made a substantial impact on the population on the East side of the former wall. This space evokes the complex feelings experienced by Mothers of the former USSR and aids in providing a pathway to healing.

Both memorials have created a place to help the soldiers and civilians who have witnessed the horrors of the Second World War and Battle of Berlin express their grief in silence. This is especially true for those who believed they should stay quiet, or even put the tragedy behind them. Some may have felt prohibited in iterating their sadness, or maybe they did not know how to until the memorials were built. Now, they can commemorate, honour and open up in the face of a statue. Tiergarten and Treptow aid in the recognition of their suffering and are testaments to the Red Army's achievement.

Geopolitical Symbolism:

Arguably, the Soviet War Memorials at Treptow and Tiergarten are symbolic of both the Battle of Berlin and World War Two. Symbolism is an extremely important factor within the geo-politics of the memorials. They could signify the road taken by the Red Army Soldiers who liberated communities in the former Soviet Union. These sites are dedicated to the civilians who occupied territories within the former USSR. They would have experienced numerous unlawful executions, vicious attacks, violent rapes and reprisals due to Partisan activity (Strangl, 2003). In Treptow, the soldier can be deemed as a liberator. It can be a representative for all of the former USSR. The soldier rose to the call of the Motherland. Those who travelled to Berlin, a father, a son, a brother had all sacrificed their lives to achieve an almost impossible victory.

The memorials are there as a sign to remember the unknown heroes who have unmarked graves, the men who died in various fields and the women and children who burned in villages. Some soldiers now have a resting place beneath the soil of Berlin so they may never be forgotten. These memorials are a testament to their sacrifice and suffering and serve as a permanent reminder to Europe of the dangers that Fascism and Nazism pose (Strangl, 2003). These spaces create a similar atmosphere to the famous Alexander Nevsky Statue in Russia.

Today:

Today, the Soviet War Memorial at Tiergarten remains unchanged as it did in 1945. No adjustments have been made to its physical structure or to its purpose. As previously mentioned, after the termination of the Soviet Union in 1991, the Germans have continued to restore and maintain the memorial site to the best of their ability. The space is still used to commemorate the sacrifice of the soldiers.

Treptow, on the other hand had changed quite drastically in April 2022 due to the ongoing war between Russia and Ukraine. The memorial at had been completely vandalised and destroyed in graffiti. Some phrases iterated 'Putin=Stalin' or 'Ukrainian blood on Russian hands' (Culverwell, 2022). An example of this can be seen in Fig. 5 and Fig. 6.

Some of the seven thousand Red Army soldiers buried here are Ukrainian. Despite this, the memorial

was still destroyed. This triggered a great controversy as there is a substantial number of Russian nationals still in residence in Berlin (Culverwell, 2022). The memorial has now been restored and the graffiti is gone.



Fig. 5: Graffiti used to destroy and vandalise the sarcophagus at Treptow (Culverwell, 2022)



Fig. 6: Graffiti displaying the phrases 'Ukrainian Blood on Russian Hands' and 'Putin = Stalin' on the Soviet War Memorial at Treptow (Culverwell, 2022).

Conclusion:

It is indisputable that the Soviet War Memorials, Tiergarten and Treptow in Berlin, have countless geo-political and spatiotemporal factors that contributed to their construction and maintenance. Some of these factors include, the location, utilisation of space, functions as memorial sites and geo-political symbolism. Tiergarten was coincidentally built in on the British West side of the former wall, whereas Treptow had been built on the Soviet East side. Each memorial portrays different emotions to the public. Tiergarten focuses on commemorating and honouring the successes of the fallen soldiers, while Treptow highlights the immense sadness felt due to the great loss of life.

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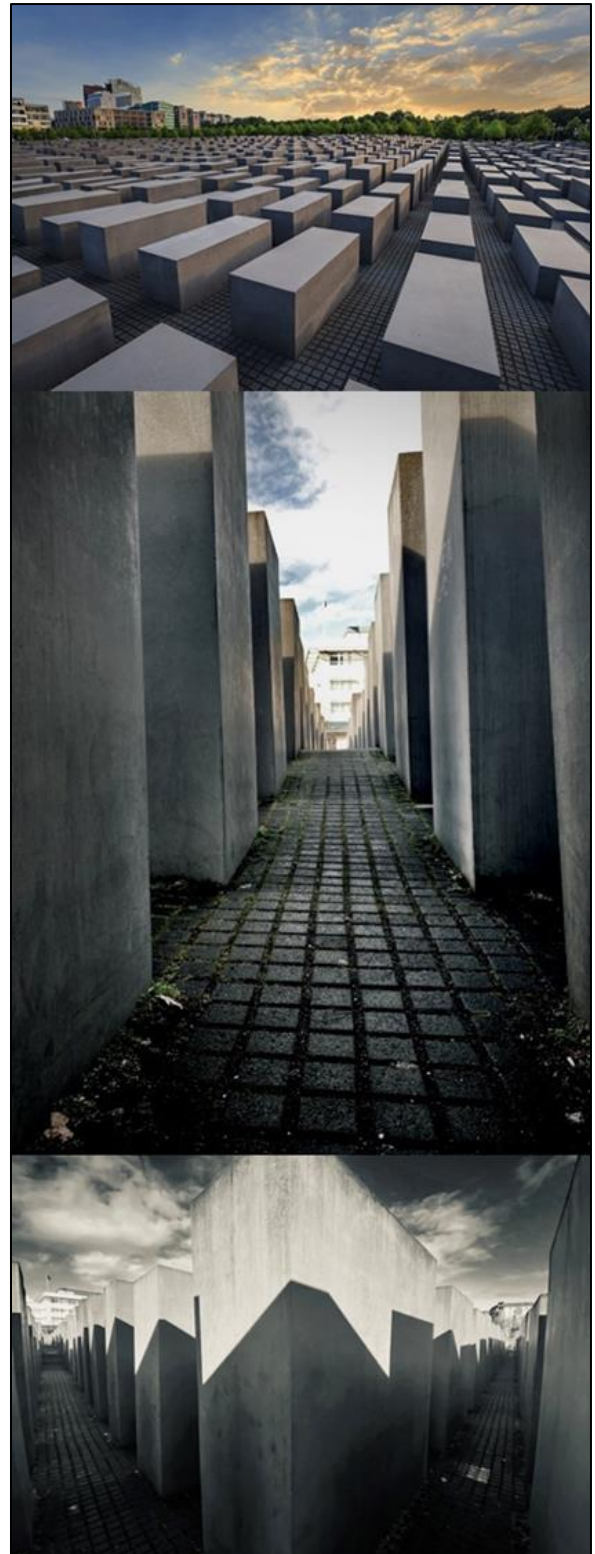
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Holocaust Memorials in Berlin

By Lauren Davenport

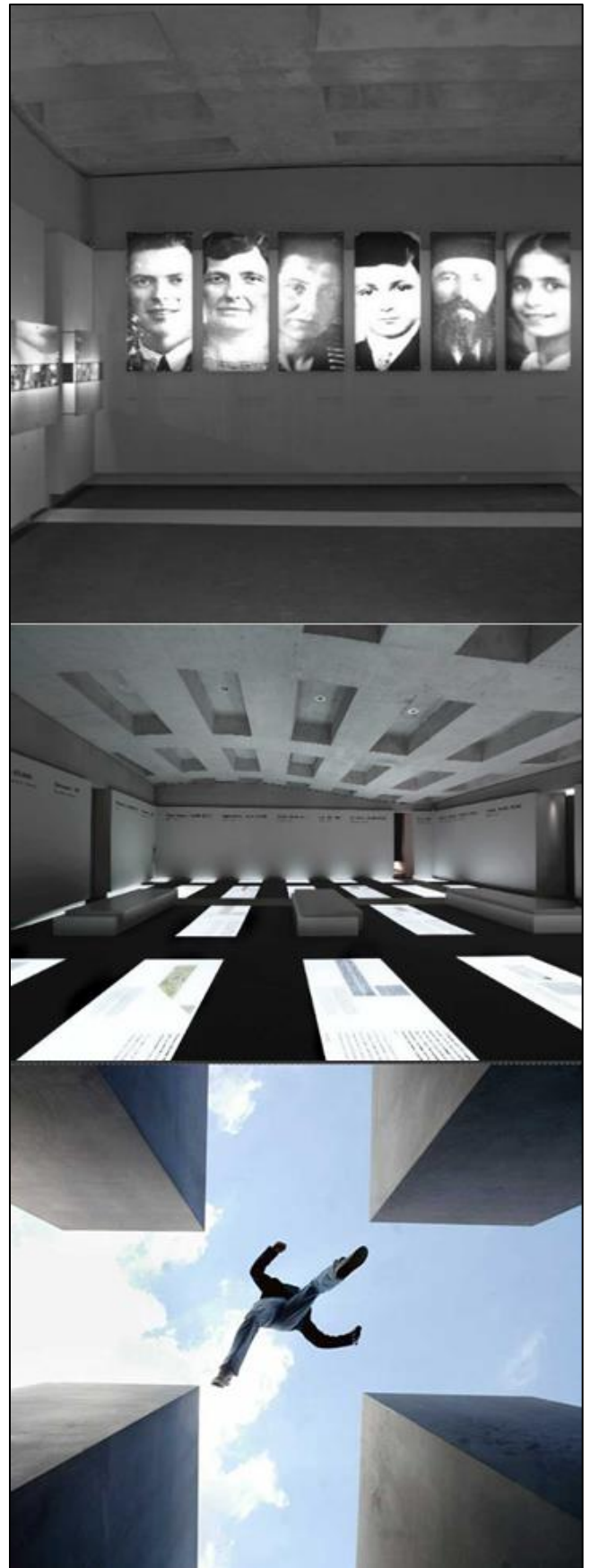
People have created memorials to memorialize the Holocaust all around Europe and even around the world. Each endeavours to preserve the collective memory of the generation that created the memorial as well as to shape the memories of future generations. This paper looks at some examples of Holocaust memorials and monuments in Berlin. During my research, I discovered two contentious memorials: the Murdered Jews of Europe Holocaust Memorial and the Jewish Museum, which I will focus on in my paper.

I briefly mention additional memorials, such as the Homosexual Memorial, the Sinti and Roma Memorial, and the Memorial for Nazi Euthanasia Victims. Memorials pose complex situations about which parts of history we choose to commemorate. What part of the story, or whose story, what does a memorial tell if it cannot tell the entire story? Whose memories, views and experiences will be illustrated? In addition, memorials must address the issue, of why should we remember. The Murdered Jews of Europe Memorial seeks to inspire future generations to never again abuse human rights, to always preserve the democratic constitutional state, to ensure equality before the law for all people, and to oppose all types of tyranny and violent regimes.



Due to architectural issues, the Holocaust Memorial for Murdered Jews of Europe and the Memorial to the Jewish Museum have generated controversy. **The Murdered Jews of Europe Memorial**, in my opinion, represents how the Nazis intended the public to see the doings of the Holocaust. However, due to the uneven terrain on which stelae blocks lie, they may depict the reality of the Holocaust and the truth of the treatment the Jews experienced hidden from the public eye. The Memorial for the Murdered Jews of Europe was erected by the German government in the year 2001 to mark the 60th anniversary of the end of WWII. It was created by American architect Peter Eisenman and located south of the Brandenburg Gate. It consists of 2,711 rectangular blocks of different sizes arranged together in a squared grid pattern to commemorate the six million Jews who perished during the Holocaust.

Nonetheless, the architecture has been critiqued for being overly abstract and without historical context. Taking a novel approach to the standard concept of the monument, the structure tries to reflect a presumably orderly system that has lost touch with human reason. It has a feel of a graveyard, with grey pillars growing bigger and taller until they surround the visitor. The German government built a museum beneath the memorial due to the controversy that upraised during the creation of the memorial. Some members of Jewish communities believe it is heavily focused on the victims, and not enough on the criminals.



‘The importance of this memorial is that it keeps the question of the Holocaust open’. The 1950s and 1960s were decades of silence because many Nazi perpetrators were in influential positions in the courts, government, and police. It was only with the change of generation in 1968 and the 1970s, that it was acceptable to address the older generation.

The Federal Government and the Berlin Senate supported the initiative, and the state identified an alternate location for the memorial, still in the heart of the Nazi regime's last place of power. Following 1990, several design initiatives and architectural contests indicated that Berlin was searching for a new identity to meet its new political position and rising role as an international metropolis.

A worldwide design contest took place in 1994 and consisted of 528 entries from all over the world. Peter Eisenman won the competition and created the famous Holocaust memorial of today. The primary concept of this memorial envisioned a collection of shapes arranged in such a way that visitors must forge their path to the remembrance of Europe's slaughtered Jews. It would not be a memorial site constructed by the killers, but rather one designed to present generations of the memory of murdered Jews. Eisenman desired that the monument reflects visitors' experiences and that what they remembered in person would be more memorable than any historical photographs.

The parliament agreed to make Holocaust memory a focal point in Berlin but faced a further complex

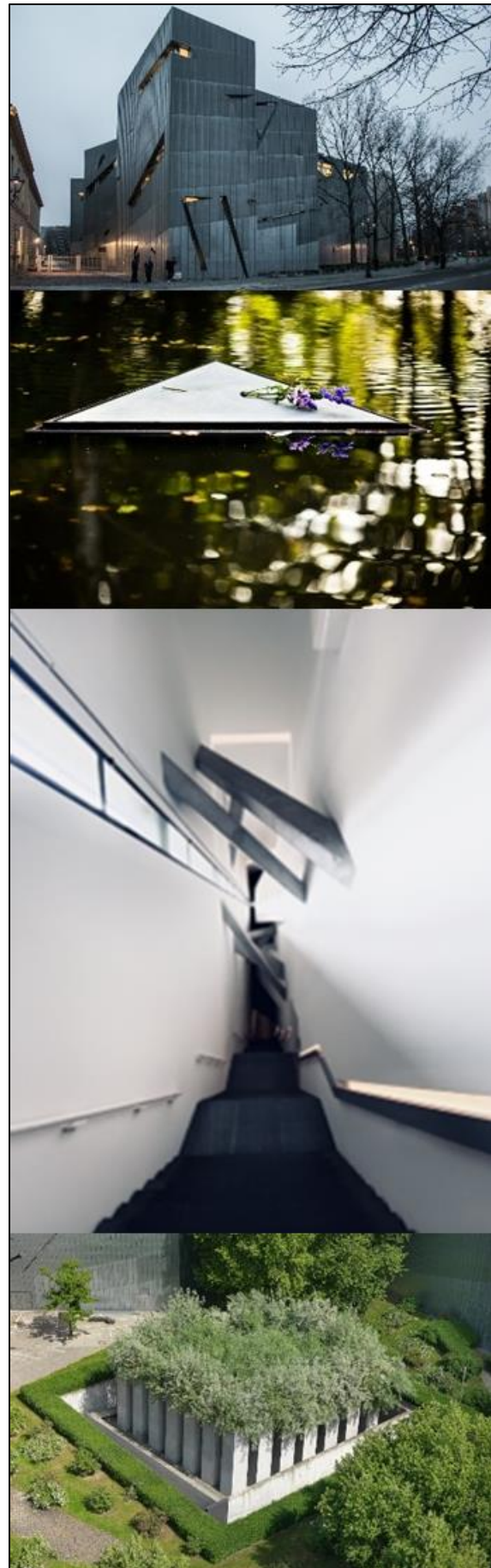
challenge of determining what commemoration should stand within Eisenman's field of pillars.



The discussion about historical substance begins in the same way that the debate over memorial design ends. Germany acted in response to its Holocaust past by amending citizenship rules, joining NATO's 1999 operation against Milosevic's Serbia, and establishing a permanent location in Berlin's urban landscape as a reminder of the last time Germany was under the rule of Berlin. Germany will forever be known for starting the largest genocide in recorded history and using it to cover up the mass slaughter of over six million European Jewry.

The Jewish Museum in Berlin was completed in 1999 by Daniel Libeskind. It was the first museum dedicated to the Holocaust which remembers a broad history of Judaism in Germany. The building contains three underground corridors, each of which is axes that remember different parts of Jewish history in Germany. Firstly, the axis of continuity connects the old building with the new structure and is the longest staircase. The second axis is of Exile as it leads to a Garden which remembers the history of Exile in Germany. The garden is open-spaced but cut off from the outside world. These blocks surrounding the Garden are all intended to create a feeling of uneasiness while walking through them. The final axis finishes at the Shalekhet, consisting of more than 10,000 opened-mouth faces, made from heavy iron plates, lie on the ground screaming in terror. Representing the innocent victims of war and violence.

The structure of the museum begins its shape from the Star of David. The Jewish Museum's architecture, when shown in an aerial view, frames its Holocaust narrative with the concept of negative sacred, conveyed by a pattern of gaps running through the design's centre. Connecting the city's damaged landscape, the freshly unified city and country, addresses the complex history of Jewish existence in Germany. Libeskind's design reflects Stanley Allen's notion of the city as vacant and seems as if it sprung "out of the fissured condition of the city." Its response to the city maintains the open wound of the past in hopes that the museum may work to emerge from it (Hansen-Glucklich. J, 2014).





"The Jewish Museum and the migration council of the federal government created an atmosphere, in which downplaying certain forms of Antisemitism became normal." (Thiel. T, 2019)

"It is unacceptable that statements downplaying the Holocaust are made in the Jewish Museum." (Königsberg. S, 2019)

The overall message of this intriguing phase in Jewish history in Germany was that it was unethical to segregate, harass, and ultimately murder those fellow Germans. Highlighting issues regarding most Holocaust victims who were not German citizens, plus the numerous Jews who did not follow suit and embraced their unique character.

Even during the peak of the assimilation process, a sizable minority had a perspective, and their experience would be even more significant. The museum lacked a critical viewpoint on Jewish integration, which did not avert the Holocaust. Instead, it emphasized its own uniquely German idea of how Jews should be, omitting many Jews in modern-day Germany and many Jews throughout.

This pool remembers **the Sinti and Roma victims of the Nazis**, who were persecuted as "gypsies" and sent to concentration camps and murdered in what has been called "The Forgotten Holocaust". On August 2, 1944, 4,300 Sinti and Romans were killed in the gas chambers of Auschwitz (and other concentration camps). The triangular stone in the

centre of the pool symbolizes the badges won by the people in the camps and each day this stone rises with a new, fresh flower. However, opponents argue that Germany is establishing skewed and destructive hierarchies of suffering based on the order of production, size, and location. The design created by Dani Karavan engraves the names of the concentration camps and places of annihilation in which the persecuted Gypsies were tormented and murdered, but the recognition of this monument has been postponed due to a prolonged debate (Figure 12). Other groups of victims have not found intercessors for their cause and will have to suffice with existing memorials that do not highlight their specific narrative of suffering.

The Memorial to the Persecuted Homosexuals Under Nazism is a large block of concrete (stelae) which has a small square-shaped screen showing a same-sex love film seen in Figures 14 & 15. The experience around this Memorial highlights the action of peeking through a section of the stelae to see a secret that was hidden from Nazis. The first initiative was inspired by ideas of memorializing gay victims of the Nazi dictatorship.

This concept was inspired by disputes about a kiss and the words engraved on the Monument to Homosexuals Persecuted Under Nazism in Berlin, Germany. The core argument is that lesbians' experiences of persecution are minimized and vanished under the general term 'homosexuals', with visible implications in a lack of shared identity. The Nazis persecuted LGBTQ+ people as part of their 'moral crusade' to 'purify' Germany.



More than 10,000 queer men were arrested, and thousands sent to concentration camps. Many of them did not survive.

The Memorial for the Victims of the Nazi Euthanasia is dedicated to the people with disabilities or mental/ chronic illnesses. This was the first group to be systematically murdered by Nazis. This glass wall stands exactly where the Nazis euthanasia planning headquarters once stood. It was here they organised to eliminate those they considered “unfit” for their “master race.”

From children with Down’s Syndrome to adults with mental health issues and chronic illnesses an estimated 300,000 Euthanasia people were exterminated by the end of the war.

Berlin holds many different Memorials where in this paper, I focused on the Murdered Jews of Europe, the most famous, as well as the Jewish Museum and other memorials located within metres of these unique monuments. Each memorial has one thing in common, they all represent the Persecuted Jewish community if they were Gypsies, Homosexuals, or suffered from Mental Health problems or Disabilities. Writing this piece has been somewhat emotional and unsettling although it has informed me of the concepts and purposes of the memorials and the controversy that struck the Murdered Jews of Europe Memorial and the Jewish Museum.

Germany has been against Jews in the past but has commemorated them in ways that affect Berliners and the rest of the world. “While history makes the past more complicated, commemoration makes it

simpler, since it seeks more often to supply us with heroes of worship, with enemies to detest; it deals with desecration and consecration.” (Todorov. T, 2011) However, the past isn't always something to cherish in Berlin because it holds a twisted and perverted past. Its monuments and memorials reflect a more agnostic attempt to reconcile with a recent history plagued with Nazism, extremism, and false visions.

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Queer berlin: How queer geography influences the landscape of Berlin

By Isom James Whelan

Many geographers have studied queer geographies, and how queer communities shape the landscape around them. These geographers have studied how queer landscapes are contested and how they can find ways to understand sexuality and gender diversity. One example of a geographer who studied genderqueer geographies, is Lynda Johnston. She has researched how genderqueer bodies are not only contested, but also contest the landscape around them. We can draw upon different geographical ways of looking at sexuality and gender, with social geographer Jon Anderson relating gender to 'the cultural and geographical aspects of meanings, appearances, practices, and places that make up 'proper' ways of being a male or female body' (Anderson, 2015). Another social geographer who has studied into queer geographies is Vincent Del Casino, mentioning in his book of social geography, how it is important for social geographers to pay attention to Trans individuals. He explains how trans individuals 'upset the spatial structures of heteronormative gendered identities' (Del Casino, 2009) with trans individuals breaking the (b) orders in society. It has become more important for social geographers to study queer geographies, as it is globally contested and there is constantly areas that are not researched enough.

To understand queer geographies, we need to look at it historically, and how this history has shaped the way on how geographers study the subject today.

We see queer geographies in the landscape through people and their identities, buildings and places which are associated with queer history such as stonewall, or everyday places that materialize queer people. We can also see queer geography politically, through laws and rules that are contesting the community.

History of queer berlin

We see queer geographies globally, but an important country in the history of queer geography is Germany, specifically in Berlin. Queer geography in Germany can be dated back to medieval periods, with laws in affect against being homosexual, with gay and lesbian people being burned at the stake, shown in the German book of laws for town and country. We see through many time periods continuous criminalization towards queer people. It is said that King Frederick of Prussia was almost certainly homosexual, with him abolishing the death penalty for homosexual intercourse. We see many positive movements for the queer community happen in berlin, with the first gay magazine being published in 1896, becoming the beginning of the gay rights movement in Germany. In 1910 German healthcare practitioner Magnus Hirschfeld argued that a person may be born with characteristics that did not fit into heterosexual or binary categories and supported the idea that a 'third sex' existed naturally. He also included people who do not feel they have a 'fixed

gender', which today we know as the term gender fluid or non-binary. He opened the institute for sexual research, institut für sexualwissenschaft, in Berlin in 1919. By 1930 it would perform the first modern gender affirmation surgeries in the world. Hirschfeld also worked tirelessly to get paragraph 175 overturned, which criminalized sexual acts between men from 1871 to 1994.

Professor of German and gender studies Katie Sutton explains how the work of early transgender people in Weimer Germany 'represent a critical but forgotten moment in the history of transgender political activism' (Sutton, 2012).



Figure One: Magnus Hirschfeld

Hirschfeld also negotiated with police, creating documents for transgender people that they could take to police stations, to get photographic ID stating they are transgender. This would protect the person from being targeted and punished by police for 'cross-dressing'. When Nazis seized power in 1933, they destroyed Hirschfeld's research centre. During the war Germany lost Hirschfeld's reformist influence.

During the 1960's and 70's West Berlin became a safe place for queer Germans. Queer people existed freely, with drag shows and cabarets becoming a staple in the nightlife, and a space of sociability.

We can see historical queer nightlife venues open in west Berlin, such as Romy Haag's 'Chez Romy Haag' club in 1977, which became a popular venue for queer people looking for an inclusive nightlife experience. In communist East Berlin, there was a small queer scene, with trans activist Nadja Schallenberg living openly as a trans person. She would hold meetings in the Soontagsclub, which is still a club today.

In 1979 the first pride parade, called Christopher Street parade, was held in west Berlin. During this parade, 450 people took to the streets to protest for queer rights. This parade has been held once a year in July since then. It is now a celebration for queer people, to take to the streets and celebrate their freedom. In the 1980's The Schwules Museum (Gay Museum) opened, which is one of the biggest institutions for 'researching, preserving, and

communicating the history and culture of queer communities' (Visitberlin, 2023).

The first discussion about same sex marriage in Germany was in 1992, but registered same sex marriage was not legalized until quite recent, in 2017. You now also have the option to change your gender to the one you prefer, and you can also physically transition legally through German healthcare.

Through all of this history we can see how queer communities in Berlin have contested the landscape legally and through a person's self. Understanding this history is also important as we look at queer geographies in present day Berlin.

Queer Berlin today

Today in Berlin, queer identity can be expressed in everyday life. We can see this through many areas available for people to express their identities, in queer bars, museums, and other social spaces, with many of them found in Berlin's 'gay neighbourhood' Nollendorfplatz in Schöneberg, southwest of the city. Here you can find queer nightlife, restaurants, cafes, and stores. Today in Germany the law protects people in the LGBTQIA+ community. Rights for transgender people in Germany are considerably progressed compared to other European countries. 'Since 2011, you can have your gender changed in official documents before going through a physical transition' (HandbookGermany, 2023), also since

2013 a parent does not have to assign a gender to their child's birth certificate.

There is a plaque in Nollendorfplatz, which can be seen in figure 2, which was created to commemorate those persecuted and murdered for being homosexual during Nazi Germany.



Figure Two: Plaque in Nollendorfplatz remembering homosexuals persecuted

An important aspect of queer Berlin I would like to know is how queer people who live in Berlin currently feel. A gender studies student, Carolin Grimmer (Grimmer, 2020), wrote a dissertation piece on how even though Berlin is a safe, open space, queer people can often feel lonely. She worked with marginalized queer people, who after coming out experienced loneliness due to a lack of understanding, relating to something that other queer people may not personally be affected by. For example, one woman she interviewed for this research had a child and later came out, which created a sense of loneliness due to other queer people not having children. In this sense we see that although this person was able to come to Berlin to

express their ‘queerness’ and to relate to a community, they also possessed a sense of loneliness. This is just one example of what it could be like for a queer person in Berlin today, but there are also many positive examples. Quite often a queer person will come to Berlin as it is not seen as acceptable to be queer in their home country. In an interview done by Richard C.M Mole in Cambridge university, a Russian Queer man describes how he had to choose between staying at home and not being accepted by his family, or moving to Berlin, where he could feel freer. He says in the interview “My family is important to me, so I could not come out at home, that wasn't possible. It was only after I moved to Germany that I started to live for myself” (Mole, 2018). Here we see different queer geographical perspectives, shedding light on the freedom that has been fought for in Berlin and how important it is, not just to German citizens, but to people around the world looking for a safe queer space.



Figure Three: A Café in Schoneberg

Berlin is known today for its extensive queer nightlife, with many queer nightclubs being the forefront for tourists. One of the most popular nightclubs in Berlin is the connection club, which is one of the oldest and well-known clubs in Schöneberg. The most famous queer nightclub in Berlin is Berghain, located east of the city, it attracts major tourism year-round. The nightlife is also full of cabarets and drag shows, regularly held in Rauschgold, a bar in Kreuzberg. These shows invite queer tourists from all over, to enjoy a night in a queer friendly environment. There is a historical centre in the city which documented lesbian women's history in the city, containing artifacts that were collected over the years.

There are many queer tours of the city and for the neighbourhood of Schöneberg, which attracts tourists queer and straight. There are important queer historical monuments found in Berlin. One example is the monument built to remember gays who were persecuted by the nazis, located in Tiergarten. The monument is a giant concrete cube, with a small window containing a glimpse of a video of two men kissing. Memorials are important geographical landmarks that define the history of Queer communities.

We can see how Berlin today is shaped by its queer geography, with a guide from historical events, the queer community has and continues to challenge the landscape around it. A key aspect of the queer geographies in Berlin today, is the historical figures I have mentioned, who fought for the freedom in Berlin, changing the shape of queer geography not

only in Germany, but globally. Without these people it would be impossible to imagine the city of Berlin as is today.

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GeogSoc 2022/23

By Orla Murray and the GeogSoc Team

As the academic year comes to a close, it is time to reflect on all of the excellent work undertaken by the Geography Society throughout the year. The aim of the society has always been to promote geography to the wider Maynooth community and to provide a space for students to socialise and to make friends. This year has been the busiest yet for the society, with seventeen individual events, two weekly activities, various collabs, trips away, an overnight trip, and stands at 5 separate open days. This year has also yielded the highest level of membership since the 2016/17 academic year, with just under one hundred members.

Meet the Committee

The society this year the committee has been comprised of seven members, four masters students, two final-year geography students, and a second-year law student. All voted into their positions during our September AGM:

Co- Presidents Orla Murray and Leo McConnell;
Public Relations Officer – Leo McConnell;
Secretary- Ivan Janota; Treasurer – Caoimhe Currie; Undergraduate Representative – Katelyn McElwaine; Second Year Representative – Chloe Gallagher; and Environmental Officer - Phillip Mellon.

Some of our Events

While this has been an incredibly busy year, some of our highlights are GeoWeek 2022, the Carlingford

Trip, Eurovision Quiz Night, and of course both awards nights.

The GeoWeek 2022 events took place over 5 days between the 14th and the 18th of November. Our various events encouraged engagement from people throughout the wider Maynooth student community. The week began with our weekly Mindfulness Mondays walk. This allows students to decompress and to escape their studies for an hour, and to socialise in nature. This was followed by our GeoGuesser Tournament, organised by Ivan, in collaboration with the Games Society. This event was incredibly successful with a high turnout, even an alum made an appearance. Tuesday's events comprised of a collaboration with the Tea Society, organised by Katlyn. The theme of this event was 'Sustainabili-TEA', during which conversations about geography, sustainability and responsible activism were encouraged. On Wednesday, we hosted a guest speaker, Raquel Noboa, founder and CEO of Fifty Shades Greener, planned by Leo. She spoke about climate and environmental action with an emphasis on small-scale accessible ways that everyone can get involved in. On Thursday, we had a respite for our magnificent trip to Glendalough on Friday, organised by Caoimhe. This involved hiking on some beautiful lakeside trails together, and of course taking endless photos and TikTok's. We also got a shout-out on twitter by the Geographical Society of Ireland commemorating our ambitious and exciting GeoWeek 2022 events.

Our second annual trip away took place on the 16th-18th of March, where we enjoyed the picturesque

Carlingford in Co. Louth. We participated in some geographical activities, exploring the physical geography of the area and cycling the greenway (despite the rain), and indulging in cultural geography celebrating St. Patrick's Day with the countless festivities Carlingford had to host. This was also a fantastic opportunity to bond as a group, and as an escape before the horrors of exam season were upon us.

We also held our second annual Eurovision Quiz this year. This event, hosted by Leo has yielded a high turnout both years. Maynooth has a surprisingly large community of Eurovision fans, always happy for a reason to gather and discuss all things Eurovision. With prizes for first, second and third place, it was an extremely competitive event, and points were delegated in typical Eurovision fashion! We got our *lipstick* on, and our members had a *euphoric* night both this year and last year – some might even suggest it was a *fairytale*... okay, enough of the Eurovision puns.

This year we held two weekly activities, our Mindfulness Mondays walk which offered an opportunity to escape the pressures of the classroom and to socialise in nature. We also held a Study Sesh on Wednesdays. This allowed students to ask for help from their peers and to gain some insight into their own work and others. This has been a significant help to many members who dropped in throughout the year, particularly throughout exam season.

We may not have won a Clubs and Socs Award, but we did win a Golden Turkey Award and a commemorative plate which is more valuable than all of the clubs and socs awards combined, to us anyway.

Thank you for everything!

This year has been incredible. Filled with smiles, tears, laughs and friendships. For the majority of us, this has been the most academically challenging year that we have ever experienced. We can also confidently say that it has been the most fun that we have had, thanks to this society and the friends that we have made as a result. I know this is what I am most grateful for, the friendships that I know will stand the test of time.

We, as a committee would like to thank all of the people who have helped us throughout the past two years. There have been so many people that have helped us along this journey, members showing up at events, all the societies with which we have collaborated. More than all else, we would like to thank Professor Adrian Kavanagh, and Neasa Hogan. Both of you have been a tremendous help and instrumental in the operations of the society throughout the past two years. Without your help, this committee would not have been formed, these friendships may not have been formed, and experiences would definitely not have happened. We are each eternally grateful for all of your support and for fighting our corner.

Lots of love,

Orla Murray and the GeogSoc Committee

Geography Department Awards 2022



GY347 Elections Task 2023



Geographers in the Field 2022/23



Geographers in the Field 2022/23



Proinnsias Breathnach's 50 Years in the Field



GeogSoc Events 2022/23



GeogSoc Events 2022/23



The Value of Data Rescue

Author: Caítriona Downey

Abstract

This essay explores the value of data rescue in relation to weather logs kept by Irish lighthouse keepers in the 19th and 20th centuries. The essay is topical in relation to a recently launched heritage project by The Commissioners of Irish Lights which will preserve and catalogue archives and create a web-based method of searching the collection. The essay explores a few select areas of current research on Atlantic storminess and the extent to which data rescue of weather logs from Irish lighthouses in the 19th and 20th century may contribute. Finally, some limitations of lighthouse instrumental records and data rescue in general are noted.

Introduction

Weather observation was a constant of a lighthouse keeper's working life. Meteorological observations of wet and dry bulb temperatures, cloud cover, precipitation, wind direction and speed were logged several times a day, at regular intervals, and transmitted by radio to the mainland. It was essential for the keeper to ensure instruments like barometers and thermometers were in good working order. Safety was primary reason for keeping weather logs, to provide mariners with an accurate forecast for navigation. Longer term, records contributed to research, providing insight to trends in weather and climate.

The Commissioners of Irish Lights launched a major heritage project in 2019, to preserve and catalogue archives from the 19th and 20th centuries. The earliest records date to 1810. The Archive contains one thousand volumes and two thousand boxes of administrative records (Commissioners of Irish Lights n.d.a). Whilst the Archive is not currently available to researchers the prospect of recovering weather observations is sure to insight excitement in climatologists and meteorologists. It is the hope the collection will be searchable online.

In addition, Met Éireann, maintains an extensive physical archive of climate and rainfall records collected throughout Ireland dating to at least the mid-1800s (Met Éireann n.d.a). Records may also exist in the National Archives of Ireland or private collections. In 1851 the Royal Irish Academy organised a year-long meteorological survey of sixteen of Ireland's coastguard stations or lighthouses (Dixon 1950). It is realistic to assume that not all weather logs from 19th and 20th century Irish lighthouses will have survived the test of time; factors such as how and where the logs were stored and age and condition of the logs will contribute to the usability of the observational records.

There are a several reasons why the rich legacy of meteorological knowledge, contained in weather logs from 19th and 20th century Irish lighthouse observations, would have value to the study of climatology today.

Research Areas which may benefit from Data Rescue of 19th and 20th century Irish Lighthouse weather logs

The Amplified Jet Stream

Hallam et al. (2022) published a paper of the seasonal to decadal variability of the Northern Hemisphere jet stream using a time series from 1871 – 2011. Perhaps given that the jet stream has such a significant influence on the weather of the British Isles (Sweeney 2014) the paper was very topical and the findings were widely reported in national Irish and UK media. The trio of winter storms, Dudley, Eunice and Franklin, which brought flooding and high winds to Ireland and the UK in and around the time the paper was published (Tonkin 2022), led to the Met Office UK and Met Éireann seeking answers as to how the jet stream speeding up and moving northwards would impact climate, in particular amplifying Atlantic storminess. The answers would impact policy decisions in many sectors, including agriculture, water quality and resources, coastal erosion, flood management and have socio-economic implications.

Utilising the data in weather logs, such as, those held in Valentia Island Heritage Centre in Co. Kerry, from Valentia Island Lighthouse, which was operational from 1841 to 1947, can lengthen the time series and provide an opportunity build on existing research. Afterall, Valentia Observatory is one of the world's oldest monitoring stations and was chosen due to being situated in the path of Atlantic low pressure weather systems (Valentia Island n.d.a). However,

the usefulness of such data may be relatively localised, and, the addition of more data does not always equal more accurate forecasting (Cowtan et al. 2018).

Coastal Flooding in Western and Southern Ireland from North Atlantic Storms

Met Éireann (n.d.a) has recognised a South/West “data gap” on the island of Ireland in the extent of digitized meteorological observational records and sea level marigrams. In Ireland fifty percent of the population live within 15km of a coastline (Devoy 2008). Understanding nature of future climate change, especially increased precipitation and storminess, in the west and south of the island is crucial for policy makers; more so in recent years, in light of the impacts of coastal flooding in cities Cork and Galway. In 2018 in Galway Storm Eleanor caused damages of >0.5 billion euros, 6 fatalities and power outages impacting on around 150,000 customers (Davies 2018). By accessing decades worth of data from lighthouse weather logs, the temporal and spatial scale of the instrumental record for Ireland would be extended, perhaps providing a longer observational record by which to reference climate forecasting models. In turn this could assist decision makers with developing relevant regional and national climate adaption and mitigation policy. Figure 1 is a sketch of a reference map of the location of Irish lighthouses, navigational lights and light vessels in the 19th century (Gregory 2008).

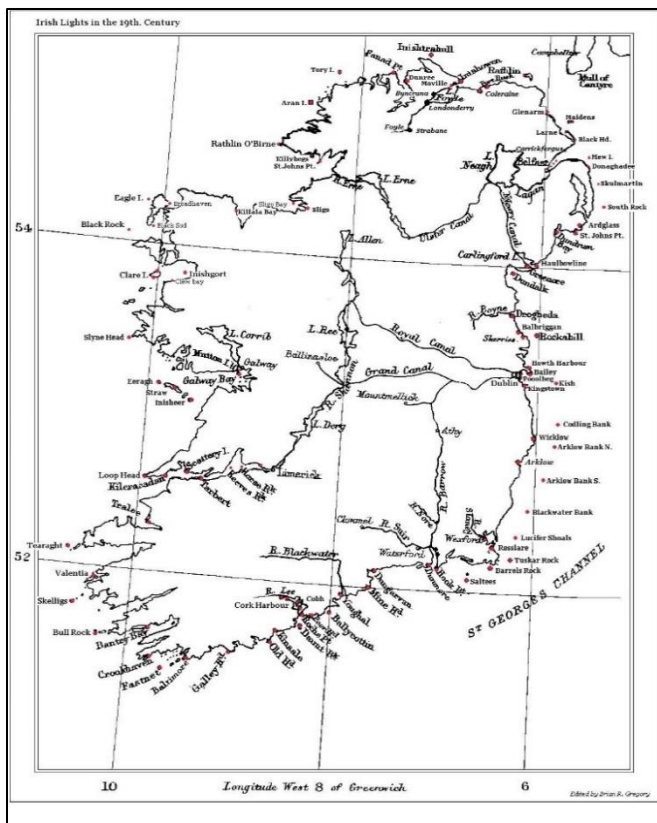


Figure 1: Coastguards of Yesteryear (Gregory 2008) A sketch of a reference map of the location of Irish lighthouses, navigational lights and light vessels in the 19th century

Data rescue for records of this age would be a delicate and time-consuming endeavour. To narrow the focus, with the aforementioned reasons in mind, logbooks sorted in the Irish National Archives, from Fastnet Rock Lighthouse, Co. Cork (operational from 1854 to 1989) or Slyne Head Lighthouse, located on the westernmost point of County Galway (manned from 1835 to 1987) (Rowlett 2015 and 2015b) might be a good starting point. Lighthouses along the west coast of Ireland were particularly important because of the hazardous rugged coastline and changeable weather, therefore it's probable these

records detailed observations on storm surges, fog, heavy precipitation and high winds.

Reconstructing North Atlantic Low Pressure Systems and Storm Events

Lighthouse keeper Gerald Butler, who worked at four lighthouses off the coast of Co. Cork, stated over the course of his three decades career (1960s to 1990s), he experienced “bad storms” on average fortnightly during the winter months; reporting 30m storm surges and 70mph winds (Commissioners for Irish Lights 2020).

Burt's (2006) research on a nationally famous low pressure system, which passed across Ireland on 6th to 7th January 1839, and whose presence was termed “The Night of the Big Wind”, used meteorological observations of barometric pressure from 22 sites in in the British Isles to create synoptic reconstructions of the storm; which caused more damage than any storm in living memory (Rohan 1975). The majority of the sites are from lighthouses on the Scottish Islands. The island of Ireland is represented by Birr, Co. Limerick, Armagh Observatory and Phoenix Park. If data from Irish lighthouses was rescued a potential area of study could examine if the observations change the reconstruction of this Atlantic storm, and others.

Support Contemporary Monitoring Projects and Climate Forecasting

Another potential use of the observation data could be to support current meteorological monitoring. Met Éireann and the Commissioners for Irish Lights

launched a partner project to develop coastal predictive modelling systems for tidal, storm surge and wave forecasting for Ireland with real-time data (Commissioners for Irish Lights n.d.a (b)). Some comparison with the data retrieved from the deployment of buoys around the Irish coast with the rescued data may benefit future climate change forecasting. However, due to the different location of the observations and the modernisation of the instruments, a direct comparison would not be possible.

Would the exercise in digitising archived material from lighthouses still be worthwhile if the heritage project ascertains that only colloquial stories and reports survived? Arguably, yes.

Over 60 Irish lighthouses were constructed from 1830 to 1863 (Commissioners for Irish Lights 2020) and a significantly majority of these were manned until the mid-1900s, on a 24-hour watch period. If the instrumental record has not been preserved, then anecdotes, such as those pertaining to the “The Night of the Big Wind” (Lamb 1991), could add to our knowledge base of Atlantic storminess in the 19th and 20th century.

Mateus (2021) outlines a methods to accelerate the digitisation process, such as, involving meteorological societies or university and secondary school students as part of service-learning, or to make use of citizen scientists. The UK National Meteorological Archive did so during the 2020 covidlockdowns. Around 16,000 volunteered transcribed 66,000 sheets with 5.28 million hand-

written monthly rainfall observations across the UK and Ireland between 1677 and 1960 (Hawkins et al. 2022). This exercise should allow the official gridded monthly rainfall reconstructions for the UK to be extended to 1836.

Limitations associated with the Early Instrumental Record

Hawkins et al. (2022) notes issues with lighthouse data supplied by the Northern Lighthouse Board, the same raised by Burt (2006) in his proposed corrections to the 1839 lighthouse barometer data and factors that one may wish to account for should a similar data rescue exercise be undertaken for Irish lighthouse weather logs. The gauges are exposed and rainfall gauges may be subject to filling with waves, or more commonly, underrepresenting rainfall when sited on cliff faces with strong prevailing winds. As a side note, there are reports of puffins burrowing and toppling gauges on remote Scottish islands, perhaps a point to bear in mind if ever one is attributing a climate signal to rainfall data from Loop Head Lighthouse, Co. Clare, a popular puffin hangout near the Cliffs of Moher! In short, data from lighthouses requires comparison with nearby gauges where possible.

Finally, in a data rich age one should always be mindful not to assume more observations equates to better modelling, forecasting or reconstructions, this is especially true of the early record, which is less comparable than contemporary observations. Care should be taken not to oversimplify the data and

appropriate statistical methods should be applied to any data set before application (Cowtan et al. 2020).

Conclusions

The heritage project by the Commissioners of Irish Lights will provide an opportunity to rescue data from weather logs, perhaps as far back at the early 1800s. This data may contribute to areas of Irish climate research, in particular Atlantic storminess, through extension of the instrumental record. Data rescue is a time-consuming process and not without its flaws, however, the opportunities to utilise the 19th and 20th century Irish lighthouse records in the field of climate science are varied.

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The Earth's Net Surface Radiation Balance

By Lionel Swan & Saoirse Fordham

Net Surface Radiation is controlled by spatial and temporal patterns on an annual basis. This results in an energy surplus in low latitudes and an energy deficit in high latitudes. The reasons for this are down to a number of factors including the Latitude, the attitude of the sun, the time of year, the influence of large bodies of water, cloud cover and the albedo effect (Lutgens & Tarbuck, 2001; Rohli & Vega, 2008; Bonan, 2016). What these factors have in common is that they are all regulated by the same energy source, the Sun.

In basic terms, Net surface radiation is calculated by the differences between the shortwave length radiation the Earth receives from the sun and the longwave length radiation the Earth emits due to it having a temperature (Geerts & Linacre, 1997; Robinson & Henderson-sellers, 1999). If the resulting number is 0 or close to zero, then the Earth would have a net neutral surface radiation, meaning the Earth's surface loses as much energy as it gains (Robinson & Henderson-sellers, 1999). However, this concept is much more complex.

The amount of incoming solar radiation from the sun is practically equal to the amount of radiation that leaves the Earth as a whole. This means the global temperature remains relatively constant. However, the distribution of the incoming and outgoing

radiation isn't constant across every latitude. (O'Hare et al., 2004)

Latitude is a massive part of why the Earth has a net surface radiation with an energy surplus and deficit in certain areas. Different latitudes result in different amounts of radiation received from the sun. Low latitudes receive more solar radiation than higher latitudes (Bonan, 2016; Robinson & Henderson-sellers, 1999). Latitudes around 30 degrees north and south of the equator receives more radiation than it loses to space. This is the Earth's surplus of energy. The opposite is said to be the case for the high latitudes. The extremes of the north and south pole, located at latitudes 80 - 90 degrees north and south of the equator loses more radiation to space than it receives from the sun. This is the Earth's deficit of energy (O'Hare et al., 2004)

Despite some conspiracy theories, Earth is said to be round and not flat, and this means the amount of light energy the surface receive differs across the latitudes. This is due to the angle at which the sun's rays hit the atmosphere and the altitude of the sun. The altitude of the sun relative to the Earth affects the amount of energy the Earth's surface receives. The greater the sun's altitude, the more intensive the radiation is focused on the Earth and the shorter the path through the atmosphere (Barry et al., 2009). If the sun is directly overhead, latitudes between 23.5 degrees north and south of the equator, its rays are perpendicular to the atmosphere. At this point, the atmosphere is at its normal thickness resulting in the shortest path to the Earth's surface (Rohli & Vega, 2008). The further poleward the sun's rays strike the

Earth, the more oblique the angle becomes. The more oblique the angle, the less energy that can be delivered to the Earth's surface. This is due to the fact that the same amount of energy is spread over a larger surface area and that energy has to go through an angled atmosphere, where more energy is scattered, reflected, and absorbed (O'Hare et al., 2004).

As discussed above, Incoming radiation is uneven across the latitudes. However, outgoing radiation from the Earth is more evenly distributed across the latitudes. Unlike the shortwave radiation the Earth receives from the sun, the outgoing radiation is longwave radiation (Lutgens & Tarbuck, 2001). It flows out of the Earth's surface day and night at a relatively constant rate. There is a slightly higher amount of longwave radiation released in low latitudes than high latitudes and this is due to the temperatures being higher in the low latitudes than the high latitudes (Bonan, 2016). The slightly higher amount of radiation emitted at low latitudes is mostly offset by the higher amount of solar radiation the lower latitudes receive.

The time of year also plays a role in the amount of radiation received in a given latitude. The changing distance between the Earth and sun produces seasonal variations in the amount of radiation received by the Earth. Earth is closest to the sun in the northern hemisphere winter and farthest away in the northern hemisphere summer (Lutgens & Tarbuck, 2001; Robinson & Henderson-sellers, 1999). Incoming solar radiation varies between the equator and poles between the equinoxes, 21st March

and 22nd September, during which the sun's noon rays are vertical at the equator (O'Hare et al., 2004). This is when the day time and night time of all latitudes is equal (Lutgens & Tarbuck, 2001; Rohli & Vega, 2008). Higher radiation is received in the lower latitudes than the higher latitudes even though the hours of sunlight are the same. The reasons for this is the angle of the sun's rays and the albedo value of the high latitudes, which is discussed later.

Day length is controlled by latitude and the time of year. In the midsummer, the south poles has several days of 24 hour day light (Geerts & Linacre, 1997). However, during the midwinter, every day is total darkness with 0 hours of day light. In midlatitudes, daylength is about 16 hours in midsummer but this reduces to just 9 hours in midwinter (Geerts & Linacre, 1997). In low latitudes it changes by just roughly an hour between midsummer and midwinter, with day length being between 11.7 and 12.8 hours (Barry et al., 2009; Rohli & Vega, 2008; Geerts & Linacre, 1997). The length of time the sun's rays are hitting the Earth's surface will have a big impact on the amount of radiation received (Rohli & Vega, 2008). Since the equator receives more sunlight than the rest of the planet, it receives more radiation and in term it has a surplus of radiation. The higher the latitude, the less sunlight that is received resulting in less radiation and a net neutral surface radiation for midlatitudes and a deficit of surface radiation for high latitudes.

Radiation that makes it to the Earth's surface is either absorbed or reflected. The proportion of energy reflected is called the surface albedo (Hartmann,

2016; Robinson & Henderson-sellers, 1999). The surface albedo is another major factor when examining the net surface radiation of the Earth. Every surface has an albedo value, which is how much energy is reflected off that particular surface. The higher the albedo value, the more energy it reflects and the brighter the surface will appear (Robinson & Henderson-sellers, 1999). High albedo surfaces don't become as warm as other surfaces with a lower albedo value because more radiation is being reflected back into the atmosphere and space. Albedo values can range anywhere from 5% for oceans under light winds to near 90% for fresh, dry snow (Hartmann, 2016; Lutgens & Tarbuck, 2001). Particular attention should be focused on clouds and desert sand.

Cloud albedo values can range from 35% all the way up to 85% for cumulus clouds (Geerts & Linacre, 1997). This has a rather large impact on net surface radiation along the equator. It's been said that the largest amount of surplus radiation is not on the equator but a few degrees north and south at the tropics (O'Hare et al., 2004). The reason for this is partly down to the duration of sunshine directly over the equator which is less than the tropic latitudes (Barry et al., 2009). However, the other reason is because of cloud cover over the equator. More clouds form over the equator than the tropics and these clouds reflect a large amount of the solar radiation traveling to the surface (Barry et al., 2009; O'Hare et al., 2004).

The bright desert sand of north Africa reflects a large amount of the solar radiation that hits it. This is due

to the fact the desert sand has a relatively high albedo value ranging from 30 to 40% (Geerts & Linacre, 1997; Robinson & Henderson-sellers, 1999). Compared to normal soil which has a albedo value ranging from 5 to 20% (Hartmann, 2016), areas covered in sand reflect much more radiation and in turn means these areas actually have a deficit in net surface radiation. This is also down to the lack of cloud cover during the nights.

The albedo value for the Earth as a whole is around 30% (Lutgens & Tarbuck, 2001), however this is not evenly distributed around the global. The albedo values along the equator and up to 25 to 30 degrees north and south are the lowest around the global. The albedo values experienced at the poles are much higher because of the increased amount of snow and ice in these latitudes. Combining this with the lower amount of solar radiation that reaches the higher latitudes, a deficit of surface radiation is experienced (Robinson & Henderson-sellers, 1999). The reverse is present at low latitudes.

The effect of cloud cover on reflecting radiation away from the Earth's surface has already been mentioned, however clouds also help to act as a barrier in preventing radiation from escaping into the upper atmosphere and space (Barry et al., 2009). Instead, clouds tend to redirect the radiation back to the Earth's surface. Areas that have high cloud cover tend to prevent longwave radiation from leaving the Earth's atmosphere during the nights when there is no solar radiation emitting from the sun. This acts to help areas keep a surplus or net neutral surface radiation across a yearly time scale. The opposite

exists in areas with low amounts of cloud cover such as the African desert mentioned above. The lack of cloud cover results in large amount of long wave radiation escaping into the atmosphere (Robinson & Henderson-sellers, 1999). This causes a deficit in net surface radiation despite the amount of solar radiation received during the day.

Another factor of net surface radiation is the influence of large bodies of water and how they affect the land near them. Water tends to store the energy it receives, in contrast, land quickly releases energy (Barry et al., 2009). During high energy receiving times, such as the summer months, bodies of water can store huge amounts of energy (Rohli & Vega, 2008). This energy is then releases gradually over time during the winter. The opposite happens with land. Generally inland locations have higher summer temperatures than coastal and oceanic locations because water takes longer to heat up than land. However, during the winter, the opposite takes places (Barry et al., 2009; O'Hare et al., 2004; Rohli & Vega, 2008). Inland locations lose energy very quickly during the winter months while coastal locations lose energy much slower because the water supplies the land with energy. There are a couple of reasons for this. The first is that water has a low albedo value. Calm water only reflects between 2 and 3% of the energy that hits it (Barry et al., 2009). Compared to the much higher variability on land, water absorbs much more energy than land. The second is the different specific heat ratios of water and land. The specific heat of water is higher than that of common land substances (O'Hare et al., 2004;

Rohli & Vega, 2008). Water must absorb around 5 times as much energy to increase its temperature by the same amount as a land substances (Barry et al., 2009). This explains why land areas that are located near water are cooler during the summer but warmer during the winter. This has a big impact on net surface radiation. Land areas near large bodies of water tend to have an energy surplus or net neutral surface radiation during the winter months compared to inland areas that might have an energy deficit during the winter.

To conclude, net surface radiation is the balance between the shortwave radiation the Earth receives from the sun and the longwave radiation the Earth emits due to its slow release of energy. Factors such as latitude, the attitude of the sun, time of year, cloud cover, the albedo effect and the presence/absence of large bodies of water all play a role in this balance. Latitude is a major factor in this, as low latitudes receive more solar radiation than high latitudes. Additionally, the altitude of the sun in relation to the Earth also affects the amount of energy received on the Earth's surface. The oblique angle at which the sun's rays hit higher latitudes results in less energy being delivered to the Earth's surface. Seasonal shifts, such as day length and distance from the sun, result in varying amounts of energy reaching the Earth's surface. The factor of cloud cover acts both as a suppressor and an enhancer for Earth's net surface radiation balance by blocking out energy from reaching the surface, but also by blocking energy from leaving the lower atmosphere. The albedo effect refers to how much light will be reflected back

off a given surface.. High latitudes typically have much higher values of albedo due the presences of ice and snow which have very high reflective properties, while many low latitude areas have lower values and thus more energy is absorbed. The last factor which influences the Earth's net surface radiation is the presence or absences of large bodies of water. Areas surrounded by water normally have a much more gradual shift between summer weather and winter weather due to the slow release of energy from the water. The result is that these areas typically have an energy surplus or net neutral surface radiation during the winter months compared to inland areas that might have an energy deficit during the winter. The combination of these factors results is an energy surplus in low latitudes and an energy deficit in high latitudes.

Lionel Swan

The earth's net surface radiation has a distinct spatial and temporal pattern annually that leads to an energy surplus evident in low latitudes and an energy deficit in high latitudes. These latitudinal variations in energy are due to factors such as the sun's incidence angle, seasonality due to the tilt of the earth and the albedo effect.

Radiation is energy travelling in the form of electromagnetic waves. Solar radiation is the electromagnetic waves emitted by the sun in the form of shortwave radiation. Once this solar radiation reaches earth's atmosphere it is absorbed by clouds and the earth's surface, which heats up and re-emits

energy in the form of longwave radiation. This is called terrestrial radiation. The balance of this incoming solar radiation and outgoing terrestrial radiation is net radiation (Mayhew, 2009). The incoming solar radiation varies greatly with latitude with low latitudes receiving more solar radiation and high latitudes receiving much less solar radiation. This is due the difference in the angle of the sun's rays hitting the earth with latitude due to the earth's curvature, the seasonal difference of insolation at different latitudes and also latitudinal differences of albedo. Loss of longwave radiation from the earth does not have much variation with latitude, even though the surface temperature varies from the equator to the two poles. This is because most of this radiation loss is coming from the tops of clouds, which tend to be colder in the tropics because of their great height due to convection and a tendency of clouds to be warmer than the ground at the pole regions (Geerts & Linacre, 1997). Due to the little variation in outgoing longwave radiation from earth with latitude and much greater variation in incoming shortwave variation from the sun, equatorward of 35 degrees latitude the income of radiation exceeds the loss of radiation (Geerts & Linacre, 1997). Therefore, there is an energy surplus within this low latitude region and an energy deficit in higher latitudes.

The first reason there is more solar radiation received at low latitudes is because of the different angles in which the sun's rays hit the surface of the earth due to its curved shape. At low latitudes the sun is directly overhead, which results in the sun's rays

being most concentrated on this surface area. Towards the poles the same amount of solar radiation is spread over a larger surface area due to the increasing obliqueness of the sun's rays to the ground (Geerts & Linacre, 1997). The curvature of the earth also means that the incoming solar radiation at the equator has less atmosphere to travel through, in comparison to at higher latitudes, where the incoming radiation has a much longer path through the atmosphere to travel through (Geerts & Linacre, 1997). This causes less insolation to reach the surface at higher latitudes because more solar energy becomes scattered and absorbed. Scattering occurs if the direction of incoming radiation is changed by the interaction with gases or aerosols in the atmosphere (Barry & Chorley, 2010). The solar radiation is dispersed in different directions by scattering or else absorbed when it strikes gases, aerosols, or clouds, which is more likely to occur when the radiation must pass through greater depth of atmosphere to areas of higher latitude. Due to the earth's curvature, there is more insolation reaching the surface at low latitudes because this is where the sun's rays strike vertically and where they have the least amount of atmosphere to travel through.

The second reason there is more radiation received from the sun at low latitudes is the earth's tilt which causes seasonal differences in insolation. The axis of the earth remains tilted at 23.5 degrees in the same direction, which makes the orientation of the earth's axis to the sun constantly change (Lutgens & Tarbuck, 2001). This change in orientation results in the spot where the sun is directly overhead to make

an annual migration from 23.5 degrees north of the equator to 23.5 degrees south of the equator. This annual migration of the sun's direct rays causes the summer and winter solstices to occur, when either of the poles is at its maximum tilt toward or away from the sun. These both occur twice a year, once in the northern hemisphere and once in the southern hemisphere. During the winter solstices, the poles have 24 hour darkness (Geerts & Linacre, 1997). This is because they are receiving no insolation in these periods, as during this time, one pole is fully tilted away from the sun. Therefore, during a winter solstice the sun's rays cannot reach the pole that is tilting away from the sun. In contrast to this, the tropics receive constant insolation all year round as the sun's rays can always reach low latitudes despite the earth's tilt. The seasons causing the high latitudes to have periods of no radiation being received from the sun contributes to there being an energy deficit in these areas and an energy surplus in low latitudes.

The third factor that causes there to be a surplus of energy at low latitudes and a deficit towards the poles is the albedo effect. Albedo refers to the amount of radiation that is reflected by an object (Lutgens & Tarbuck, 2001). Earth's albedo is around 31 percent, meaning nearly a third of insolation is reflected back into the atmosphere (Barry & Chorley, 2010). The albedo of the earth varies with latitude, with high latitudes having a high albedo and low latitudes having a low albedo. Lighter surfaces tend to be more reflective, for example, areas of snow and ice have a high albedo. Therefore, the ice coverage in the polar

regions is highly reflective and reflects most of the solar radiation received back into the atmosphere. Fresh snow can reflect up to 90 percent of solar radiation (Barry & Chorley, 2010). Darker surfaces tend to have a low albedo and absorb most solar radiation rather than reflect it. Areas of dark green vegetation therefore do not reflect much incoming radiation, for example the amazon rainforest in the tropics. Forest vegetation like in the Amazon usually reflects between 5 and 10 per cent of solar radiation (Lutgens & Tarbuck, 2001). Most of the reflected radiation from earth is due to clouds, due to their high albedo. Thin cloud types such as cirrus clouds typically reflect around 35 percent of radiation and for thicker cloud types like cumulus clouds usually around 85 percent of radiation is reflected (Geerts & Linacre, 1997). The high cloud content at the polar regions contributes to the high albedo at higher latitudes. There is a small increase in albedo at the equator due to a band of clouds called the intertropical convergence zone. This is where the easterly trade winds meet causing warm air to rise and condense into these clouds at the equator (Geerts & Linacre, 1997). Although there is this increase of radiation reflected where these clouds exist at the equator, there is still a much greater amount of reflection occurring at high latitudes. The high albedo of higher latitudes leading to reflection of most of the insolation received in these regions and oppositely, the low albedo of low latitudes leading to little reflection of insolation in this region is one of the reasons why there is an energy surplus evident in low latitudes and an energy deficit in high latitudes.

In conclusion, there is an annual, geographical pattern in earth's net surface radiation which causes there to be a large supply of energy present at low latitudes and a low supply of energy present at high latitudes. Net radiation is the balance between the incoming energy and outgoing energy in earth's atmosphere. The different amounts of incoming radiation received from the sun at different locations on the globe has the greatest impact on the net surface radiation of the earth. The amount of outgoing terrestrial radiation has little impact on the variation of net radiation across the earth due to the loss of longwave radiation being similar in all latitudes of the earth. The curved shape of the earth causes the sun's ray to reach the surface at different angles which leads to more solar radiation to be received at low latitudes. At low latitudes the sun is located directly above which causes the insolation to be concentrated here but as you move away from the equator the angle of the sun's rays increases resulting in the radiation being spread over a larger surface area. With increasing latitude, the incoming radiation must also travel through a greater amount of atmosphere causing more of it to be scattered or absorbed and not reach the surface. The earth's tilt causes the seasons to occur which also leads to more radiation being received from the sun at low latitudes. The winter solstices happen when the earth's tilt causes one of the poles to be fully tilted away from the sun and during this time that pole receives no radiation from the sun. The albedo effect also contributes to the greater amount of radiation

being absorbed by the surface of the earth at low latitudes, as low latitudes have a low albedo due to there being an overall darker surface here and as high latitudes have a high albedo due to the overall lighter coloured surface and large amount of clouds. The earth's distinct net surface radiation pattern with an energy surplus at low latitudes and energy deficit at high latitudes is a consequence of the earth's curved shape and tilt that influences the amount of radiation received by the sun at different latitudes and the albedo of the earth's surface which influences how much radiation is reflected back into the atmosphere.

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Culture and Successful Adaptation

Author: Leo McConnell

From the Fifteenth Century onwards, many European powers began exploring and colonising different regions of the world. The colonial powers believed in their own cultural supremacy (Mahony and Endfield, 2018), and therefore began suppressing the cultures of those native to the colonised lands in order to establish an authoritarian governance and reap the benefits of the natural resources hosted by these 'foreign' cultures. Although many colonial empires have since been dismantled, the cultures oppressed hundreds of years ago still feel the consequences of colonisation today. This is largely due to the exacerbation of vulnerabilities through the continuation of cultural oppression via the ignorance of national governments who predominantly hold the Western worldviews created by the colonisers (Nurse-Bray and Palmer, 2018). In this essay, the author shows how culture is central to successful adaptation through critically analysing how historical cultural oppression inflicted through colonisation has created long lasting vulnerabilities in the daily lives of Indigenous people and has consequently prevented these Indigenous cultures from being able to successfully adapt to the ongoing risks posed by the worsening climate change crisis. This essay then provides details to how governments can change in order to provide inclusive and sensitive adaptation approaches that are central to the cultures who need to adapt, before concluding.

The Continuing Disaster of Colonisation:

The disproportional vulnerability and reduced adaptive capacity to climate change faced by Indigenous people, along with an array of other socio-economic problems (such as unemployment and health issues), are rooted in the historical colonisation experienced by various Indigenous cultures around the globe (Lyons et al., 2019; Nurse-Bray and Palmer, 2018). The disaster of colonisation has continued to creep since the Age of Exploration, with colonial ideologies embedding vulnerabilities into Indigenous cultures around the world through consistent forms of neglect (Veland et al., 2013). The original idea of cultural supremacy which supported colonisation in previous centuries is still evident in today's world, with the predominantly white, middle-class majorities retaining the power of governance in many former colonies (Boyle, 2015). Those majorities who have retained power have also retained social prejudices regarding Indigenous cultures, often viewing Indigenous people as inferior 'others' within their respective nations (Marino, 2012; Rarai et al., 2022; Tume et al., 2019). Schlosberg (2012) explains how the enforcement of coloniser cultural domination, followed by the continuous nonrecognition of Indigenous culture has allowed for the marginalisation and stereotyping of Indigenous people, enhancing the view of Indigenous people as 'other' and allowing the devaluation of Indigenous culture. This view, and the marginalisation of Indigenous cultures within societies has created the ignorant belief that Indigenous cultures are naturally vulnerable to

increasing climate risks as they do not have the same resources and technologies as the Western, capitalistic cultures (Rarai et al., 2022). However, this 'natural' vulnerability, which the author believes could be more accurately described as 'forced vulnerability', is a direct consequence of centuries of cultural oppression, cultural devaluation and cultural marginalisation, that have subsequently made Indigenous cultures vulnerable to climate change through reduced adaptive capacities (Lyons et al., 2019).

Marginalisation, forced vulnerability, and reduced adaptive capacity have been forced upon Indigenous cultures through various poor colonial and post-colonial policies, with the latter extending the colonisation cycle (Howitt et al., 2012). In post-colonial societies, greedy, capitalistic settlers have constricted the traditional homelands of Indigenous people, forcefully decreasing the amount of sacred lands they have access to, in the quest for oil and other natural resources for self-benefit (Whyte, 2018). This is evident in some Indigenous communities in the Arctic, where melting ice has allowed settlers to gain access to limited resources, forcing Indigenous people out of their traditional homelands to aid the settler's search for profit (Whyte, 2018). The disrespect of Indigenous culture through condensing the area of traditional land Indigenous people have a right to, and disrupting Indigenous connections with the land, increases Indigenous vulnerability and reduces Indigenous adaptive capacity to risks posed by climate change (Lyons et al., 2019). Furthermore, post-colonial

strategies have aimed to ‘civilise’ some mobile Indigenous communities through immobilisation, as seen in Alaska (Marino, 2012). The destruction forced on the mobility of the Indigenous people here has resulted in their dependence on infrastructure traditionally unusual to their culture, and on lands unfamiliar to them (Marino, 2012). This aim to ‘civilise’ Indigenous people and their culture has consequently made traditional adaptation knowledge and practices redundant (Marino, 2012; Tume et al., 2019).

Additionally, the lack of cultural and political recognition and representation of Indigenous communities in post-colonial nations has helped exacerbate vulnerabilities and reduce adaptive capacity further (Lyons et al., 2019). The absence of Indigenous communities in governing authorities has allowed the normalcy and the compliance of the continuous post-colonial policies exemplified above (Veland et al., 2013). Colonial ideologies have ensured that Indigenous people are rarely involved in policy making and governance, and it is often those with no knowledge of Indigenous cultures enforcing the rules on their culture, curating an echoing distrust in governments (Marino, 2012). This has resulted in the concerns, principles, and rights of Indigenous cultures not being represented or considered during decision making processes (Lyons et al., 2020), evidently leading to said vulnerabilities and reduced adaptive capacities. National governments of post-colonial states must therefore recognise the need to increase Indigenous involvement in governmental institutions, with the aim to dismantle colonial

legacies within post-colonial societies (Howitt et al., 2012). States must aid the promotion of Indigenous cultures through recognition and representation in a step to demarginalize and amalgamate post-colonial societies, giving Indigenous cultures a voice in governance and in the decision making process to reduce vulnerabilities and increase adaptive capacity to the consequences of climate change.

Culturally Insensitive Adaptation – Maladaptation:

Culturally insensitive adaptation has often led to the maladaptation of Indigenous communities around the world to the risks of climate change. Maladaptation can be defined as the failure of climate adaptation policies and strategies that have subsequently led to the enhancement of vulnerabilities (Johnson et al., 2022). Culturally insensitive adaptation is a product of settler governments ignoring the cultural concerns, values, and histories of Indigenous people (Nurse-Bray and Palmer, 2018). Indigenous communities are often not included or concerned in the adaptation planning process (Lyons et al., 2019, Petheram et al., 2010), and the colonial view that Western scientific knowledge is superior results in the rejection of local Indigenous knowledge (Rarai et al., 2022). This, combined with historical vulnerabilities created during colonisation, has had detrimental effects on Indigenous populations as maladaptation seems to prevail more often than successful adaptation.

The Indigenous communities of Shishmaref, Alaska have experienced maladaptation at first hand. With

consistent environmental hazards aggravated by climate change risking the already vulnerable Indigenous community, government officials have imposed a forced migration of Indigenous communities in an attempt to ‘successfully adapt’ to the changing Arctic climate (Marino, 2012). Although hearing the government intervene to ‘help’ Indigenous people move from disaster prone areas may sound good, it can be considered as a form of maladaptive practice for various reasons. As previously mentioned, continuous post-colonial policies have favoured white, middle class majority governments who are making misunderstood decisions on the behalf of Indigenous people without cultural recognition or representation. Misunderstood decisions made by governments that lacked cultural recognition and representation historically resulted in forced sedentarization of Indigenous Alaskan cultures, establishing vulnerabilities through the forcing of immobilisation in a previously mobile culture (Marino, 2012). The immobilisation of Indigenous communities by governments consequently marginalised them in areas which exposed them to the risks of climate change (Marino, 2012). Albeit, the white, middle-class majority governments have evidently failed to recognise or learn from their mistakes as they now attempt to forcefully displace Indigenous communities once more through a forceful maladaptive migration regime, without the involvement of local Indigenous people again in this ‘helpful’ strategy (Marino, 2012). If it were not for the initial post-colonial attitudes and desires to

forcefully settle these communities, local Indigenous communities would have been able to adapt to the changing climate alone due to the traditional mobile and adaptive nature of their culture, but instead, the survival of their culture now relies on essential settler economic infrastructure. It is certain that this forceful migration of Indigenous people as an adaptation strategy will only engender maladaptive consequences and continue to marginalise an already vulnerable community. Additionally, the continuous history of governments failing to acknowledge their Indigenous culture and traditions has resulted in Indigenous Alaskan communities having little-to-no faith in the government’s ability to quickly and safely relocate them without maladaptively increasing vulnerabilities and marginalisation (Marino, 2012). Nevertheless, it could be argued that the intentions of the settler governments in the adaptation attempts through migration here are in good nature (Howitt et al., 2012), however, the prevailing ignorance and the lack of Indigenous cultural representation hosted by settler governments that permits flourishing vulnerabilities would prove this otherwise. Instead, settler governments see themselves as heroes in their attempts to ‘help’ Indigenous communities, only prevailing when disaster hits, but never solving problems at the root. This exacerbates the continuing issue of how the rest of society views Indigenous communities and their attached cultures as ‘others’ who are hopeless and cannot survive without the assistance of the governing authorities, when in reality, centuries of colonial ideological governing authorities have destroyed the adaptive capacity of

Indigenous communities. Instead, government agencies must focus on culture-centric adaptation that is inclusive and sensitive to Indigenous people and their respective cultures.

A Culturally Inclusive and Sensitive Adaptation Approach:

The evidence provided in the preceding paragraphs builds and sustains the argument that culturally inclusive and sensitive adaptation policies and strategies must be a requirement of settler governments and address the vulnerabilities experienced by Indigenous communities. Settler governments must ensure that adaptation strategies, if any at all, are culture-centric, and by and for the Indigenous populations (Nurse-Bray and Palmer, 2018), while avoiding one-size-fits-all approaches (Green et al., 2009). This essay believes there are a number of ways in which settler governments should approach such a challenge. Firstly, the root cause, colonisation, must be addressed (Cinner et al., 2018). The author recognises that history cannot be reversed, however, the post-colonial legacies and ideologies inherited by settlers has prolonged colonisation and has initiated vulnerabilities that have lowered the adaptive capacity of Indigenous communities. Therefore, it must be acknowledged today that no culture is better than another, and the admission of how colonial and post-colonial cultural oppression is correlated with low adaptive capacity should be included in the first steps of creating a culturally inclusive and sensitive adaptation approach that is tailored to Indigenous communities (Howitt et al., 2012).

Secondly, the appreciation of worldviews is important in the context of culturally inclusive and sensitive adaptation that is by and for Indigenous people (Leonard et al., 2013). Worldviews consider how the threat of climate change is perceived within Indigenous cultures, and the applicability of adaptation strategies (Leonard et al., 2013). When worldviews are not acknowledged, maladaptation can occur (Lyons et al., 2020). Therefore, Indigenous cultural values, concerns, and interests must be respected and understood in order to recognise how adaptation may be applied in Indigenous communities, and how cultural obstacles could limit the extensiveness of some forms of adaptation (Leonard et al., 2013). Acknowledging worldviews that are different to the scientific views of Western settlers will ensure the appropriateness of adaptation strategies, and help avoid maladaptation (Leonard et al., 2013; Lyons et al., 2020).

Third, local cultural and traditional knowledge on climate change and adaptation must be recognised and considered to ensure that adaptation is by and for Indigenous people (Nurse-Bray and Palmer, 2018; Petheram et al., 2010; Smit and Wandel, 2006). The recognition and application of local cultural and traditional knowledge can play a central role in the bid to implement adaptation successfully in Indigenous communities (Rarai et al., 2022), and help settlers understand why past adaptation policies failed. Not only this, but Indigenous culture can help policy makers understand other methods of adaptation which may be more practical in a given area (Adger, 2012). This knowledge could be

implemented into strategies through bottom-up approaches that see Indigenous communities getting involved in policy creation to ensure their voices and cultures are recognised and understood (Nurse-Bray and Palmer, 2018). This appreciation will allow adaptation on a community level, and ensure one-size-fits-all policies are not implemented (Rarai et al., 2022). However, it is important that the local cultural and traditional knowledge that is considered complimentary to Western sciences is not the only Indigenous knowledge incorporated into adaptation strategies. Although this may pose challenges to policy makers (Nyong et al., 2007), including Indigenous knowledge as a whole while respecting cultural values, will allow the avoidance of resistance by Indigenous groups, and allow Indigenous people to feel included in the process, leading to more successful adaptation. Without such inclusion, improvements to adaptive capacity will not be achieved (Petheram et al., 2010), and the maladaptive failures of the past could be duplicated (Ford et al., 2017).

Finally, culturally inclusive and sensitive adaptation approaches should also strive to protect what is left of Indigenous cultures through seeking to gain cultural autonomy and cultural renewal (Lyons et al., 2022). Indigenous people should be afforded with equality in regard to cultural and political rights in order to reduce their vulnerabilities and increase their adaptive capacities (Brooks et al., 2005). This will help Indigenous people feel driven, using adaptation as a means to protect their remaining traditions through bottom-up adaptation policies that support

decolonisation by recognising the importance of Indigenous culture (Lyons et al., 2020), while helping to achieve successful, culture-centric adaptation. As a result of gaining equality, Indigenous people may be less likely to be viewed as the 'other' dysfunctional members of society whose entire existence relies on the government. Instead, Indigenous people may be considered as important members in society who can contribute to an array of societal problems, including climate change, through unique cultural knowledge and traditions.

In order to carry out said steps, and ensure culturally inclusive and sensitive adaptation is secured, more needs to be done by scholars and researchers to expand research on Indigenous worldviews, cultures, and traditions (Rarai et al., 2022). Scholars and researchers play a vital role in influencing governmental and institutional policy creation, and therefore through expanding studies to thoroughly understand Indigenous communities could encourage the inclusion of Indigenous communities in adaptation policy, and other policy creation. However, it is important that research is done on a community by community basis as all Indigenous cultures are different and unique. Governments must also play a proactive role in including Indigenous worldviews, cultures, and traditions into policies to ensure Indigenous recognition and to avoid adding to the continuous history of maladaptation through ignorance (Green et al., 2009). Governments should fund researchers to collaborate with Indigenous communities on projects that could help governments better understand their worldviews,

cultures, and traditions, while simultaneously employing Indigenous people in governmental institutions to ensure representation during policy creation. Through research, and educating governments, the author hopes that culturally inclusive and sensitive adaptation policies will construct successful adaptation, and avoid reproductions of historic maladaptation (Ford et al., 2017).

Conclusion:

This essay set out with the aim to argue how culture is central to successful adaptation to the risks of climate change. The author has used the example of Indigenous communities around the world as evidence to defend this argument. Colonial policies established centuries ago have crept their way into modern day society, lingering in the governmental policies of today. The author has argued and provided substantial evidence through a number of literature sources that these post-colonial legacies have negatively affected the adaptive capacities of Indigenous communities through continuous cultural oppression, ignorance, and marginalisation. Due to the oppression of Indigenous culture, Indigenous communities have subsequently been unable to successfully adapt as cultural knowledge and traditions have been ignored, and the foreign lifestyle of settlers has been enforced. The imposition of the foreign lifestyle of settlers has resultingly aided the implementation of adaptation measures that have been maladaptive in nature due to the lack of cultural concerns. Settlers must not continue to enforce adaptation strategies on Indigenous communities

without recognising local culture and knowledge, as these often lead to worse outcomes which result in the maladaptive policy imposers sweeping in to 'help' and 'save the day'. Instead, the author of this paper strongly recommends and emphasises the need for inclusive and culturally sensitive strategies to adaptation, and allow the bottom-up organisation of such strategies. The author believes if adaptation is by and for Indigenous people, adaptation will be more likely to be successful as cultures will be included not be oppressed. Albeit, the author is not unknowledgeable to the fact that even with culture being central to adaptation, uncontrollable external factors may arise which could lead to unsuccessful adaptation. However, the inclusion of culture through bottom-up policy creation and involving Indigenous cultures will encourage Indigenous involvement, and the lack of Indigenous resistance will provide a greater chance of successful adaptation.

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Surface Interpolation: Mapping Pollutants

Author: Jeel Gajjar

This Report signifies a vector and raster query Analysis: spatial; interpolation to identify high pollution risk area within maps, charts, and text, surface modelling & overlay, data base, , adjacency spatial joints and relates approach to integrate neighbourhood level pollution area for Brighton city, UK by using GIS Arc pro Tool. The analysis's most intriguing finding was that the physical characteristics of the zoning were mostly covered by residential areas and mixed-use areas along the roads in the research region. The greatest amounts are exclusively found around the highways, according to the mapping for three pollutants (NO₂, SO₂, and BENZENE).

Interpolation is an approach to create a continuous surface(raster) from discrete point. It is a significant factor of raster data modelling and a significant process for introducing and producing new data sets. Additionally, it is an area where raster and vector data sets could also be integrated. In essence, interpolation extrapolates values for cells in a raster from a small sample size of data points. Any geographic point data, including elevation, rainfall, pollutant levels, and others, can be utilized to forecast unknown values. It is a technique that has been greatly improved by the GIS's spatial analytical capabilities. In contrast, it makes it easy to produce new data.

The studies to examine the hypothesis that various air contaminants are recognized to have negative impacts on the environment and human health especially in metropolitan city. Most of the time, these pollutants are mostly the by-products of combustion from motor vehicles, heating, and electricity generating. Pollutants can move far and harm additional people and places in addition to the immediate area around these sources of pollution. Furthermore, the chapter will examine the theoretical and quantitative components of how the air quality is modelled and theorized in terms of spatial analysis in neighbourhood of Brighton, UK.

The aim of this study is to explore the surface interpolation tool of ArcGIS to create air quality map by using three different constraints: No₂, So₂ & BENZENE. Additionally, this will be performed by utilizing specialized Geographic Information System (GIS) software. For much of the analysis in GIS, interpolation is used to create new surfaces from initial data sets. Additionally, to analyse, how the data is produced by investigating three methods. Also, how the processing and results vary based on the method utilized to produce a certain data collection.

Locational Feature

Brighton & Hove is a compact city in UK with a land area of 82.79 km² that is surrounded by the South Downs and the sea. Between 2011 and 2021, the population rose by 1.4%, from about 273,400 to 277,200. With about 24 people residing on each

football pitch-sized plot of land, Brighton and Hove is the sixth most densely inhabited of the South East's 64 local authorities as of 2021. (Government, UK, 2022). Brighton & Hove is dedicated to collaborating with associates to make sure that everyone may experience enhanced health and wellbeing in the city. Several harmful health effects are linked to air pollution. The urban area of Brighton & Hove has one of England's highest population densities. The focused area (50°51'08.7"N 0°06'32.3"W) is majorly cover by Structure also the vicinity sprawled from the road and making a ribbon development.



Map 1: Locational Map

Brighton & Hove is a compact city in UK with a land area of 82.79 km² that is surrounded by the South Downs and the sea. Between 2011 and 2021, the population rose by 1.4%, from about 273,400 to 277,200. With about 24 people residing on each football pitch-sized plot of land, Brighton and Hove is the sixth most densely inhabited of the South East's 64 local authorities as of 2021. (Government, UK, 2022). Brighton & Hove is dedicated to collaborating with associates to make sure that everyone may experience enhanced health and wellbeing in the city. Several harmful health effects are linked to air

pollution. The urban area of Brighton & Hove has one of England's highest population densities. The focused area (50°51'08.7"N 0°06'32.3"W) is majorly cover by Structure also the vicinity sprawled from the road and making a ribbon development.

Data Collection

To analyse this exercise the data was used from secondary source of air quality sample file for Brighton area UK. The air quality dataset has been sorted using data from preprepared shape file. The initial step in mapping is to utilize spatial interpolation and raster query to identify areas of high pollution risk for the area of interest.

Approach

The evaluation was carried out utilizing vector point air quality sample data that had been produced for the designated area. This surface interpolation modelling used the following databases:

Air_qual.shp: The base vector data layer is completely simulated 26 samples point layer containing information on air quality in a neighbourhood of Brighton, UK (Pollutants). Three of the most frequently detected contaminants at each location are measured: Nitrogen Dioxide (NO₂), Sulphur Dioxide (SO₂), and Benzene (C₆H₆).

Corridor.tif: A raster graphic image layer illustrates the background image of location area.

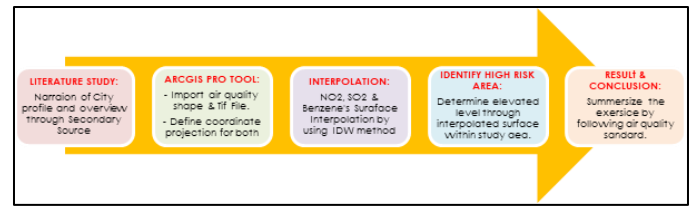


Figure 1: Process of interpolation surface modelling

Technical Statement

The first phase was analysed by using ArcGIS Pro and connected to the appropriate folder (PA3) using the *Add Data* command. **Air_qual.shp**, and **Corridor.tif** files were imported to create three separate surfaces for each pollutant from original point file, using an interpolation method: No₂, So₂ & Benzene(C₆H₆). *Before starting any process in software, the important step followed by applying define projection coordinates (**British National Grid**) to align the correct geographical location.*

Understanding of Interpolation method:

With the use of interpolation, a raster's cells' values are predicted using a small sample of data points. It may be utilized to forecast unknowable values for any geographic point data. It creates a map between the data point. The available interpolation methods are listed: Inverse Distance Weighted (IDW), Spline, Kriging.

- **IDW** tool employs an interpolation technique that calculates cell values by averaging sample data points close to each processing cell. The more effect or weight a point has on

the averaging process, the closer it is to the approximated cell's centre.

- **Kriging** is a sophisticated geostatistical technique that creates an estimated surface from a dispersed collection of points with z-values.
- **Spline** tool interpolates data using a mathematical formula that minimizes total surface curvature, producing a smooth surface that precisely passes across the input points.

Condition 1: Surface Interpolation with IDW:

Why IDW Method?

The LOCAL model of IDW interpolation directly incorporates the idea that entities that are close to one another resemble one another more than those that are farther apart. Thus, it makes the assumption that every measurement point has a local impact that gets smaller as it gets far away. In comparison to points farther away, it gives points closer to the projected location more weight.

In this step users can perceive how a vector data files can be used to generate a raster surface file. To create a three IDW interpolation, users have to choose the IDW interpolation tab under spatial analyst tool from geoprocessing window.

For **IDW method** considering,

- Input Point features: air_qual
- Z value field: Here, users may select the pollutant to create a surface one by one for each separately. (i.e; No2, So2, & Benzene)
- Output raster: IDW_No2, IDW_So2 & IDW_BENZENE (The Surface layer name)

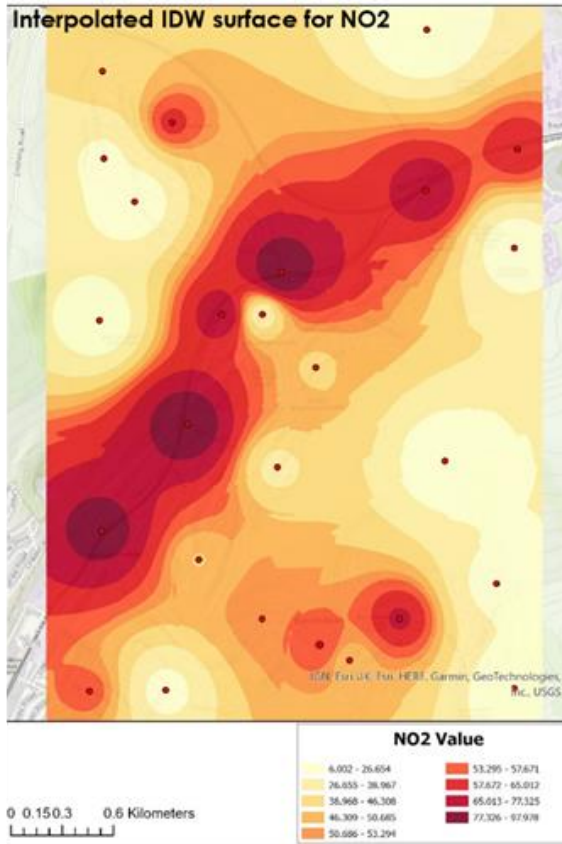
To run a **separate layer**, the procedure is same as NO2, when it comes to selecting the Z value filed change the factors (i.e; No2, So2, & Benzene) and rename the output file IDW_No2, IDW_So2 & IDW_BENZENE respectively (**Map 2A, Map2B & Map3A**).

As a final step, Users are required to alter the interpolated **surface's extents**. For instance, operators might choose to have the new surface span the entire city instead of simply the region that the points cover. Users must modify the extents to do this step. Select environment option under geoprocessing tab and can change the processing extent to '*same as layer corridor.tif*'.

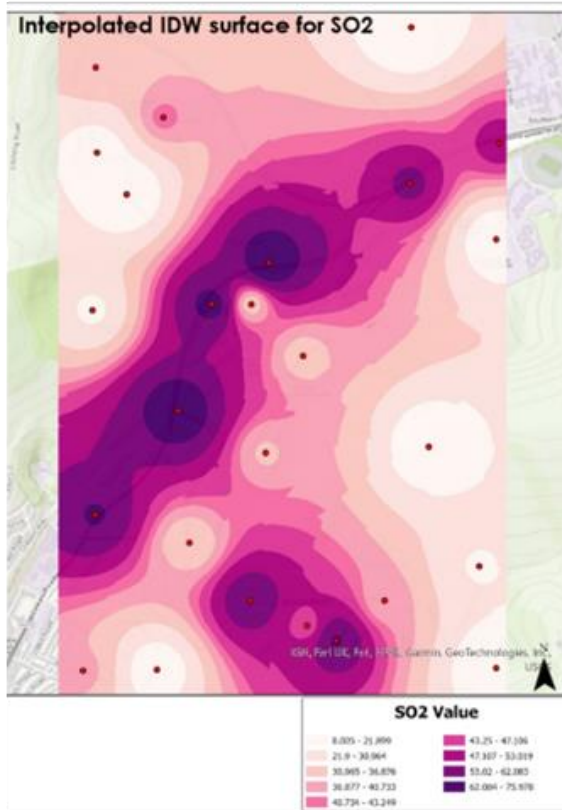
Condition 2: Analysis with interpolated surfaces:

To identify elevated level as a final output, in this step, considering the cut-off point for the individual contaminant as the same time. Identifying areas with NO2, SO2 & BENZENE levels picking the cut-off value 65.012, 53.02 & 12.83 respectively, to generate a "high-risk area" map. (**Map 3B**).

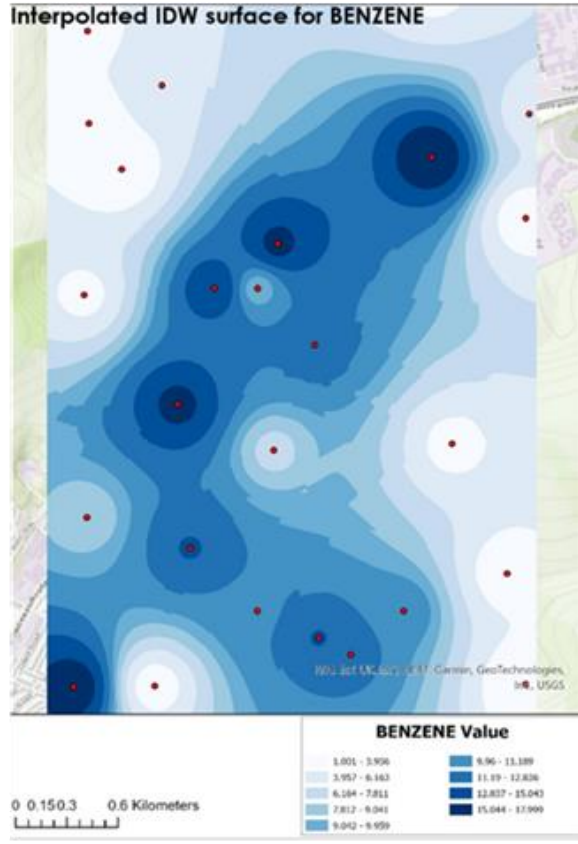
Map 2A: IDW_NO2_Interpolated modelling for NO2



Map 2B: IDW_SO2_Interpolated modelling for SO2



Map 3A: IDW_Benzene_Interpolated modelling for Ben



Map 3B: Elevated Risk Zone in Brighton city area



The final step to classify high risk area for three factors by selecting the raster calculator under Map algebra tab from spatial analyst geoprocessing toolbox. For the final results users have to combine 3 parameters with their ‘risk limits’ into a single command as below.

$$("IDW_NO2" >= 65.012) * ("IDW_SO2" >= 53.02) * ("IDW_BENZENE" >= 12.83)$$

Output raster: Elevated Risk Zone

Result & Discussion

The interesting aspects of this analysis was within study area, the physical features of the zoning are majorly covered by residential area and along the road mixed use area. As per the mapping for three pollutants (NO2, SO2 & BENZENE), it can be stated that the highest levels are to be seen along the roads only (**Map 3B**). The statistical information is below for three compounds:

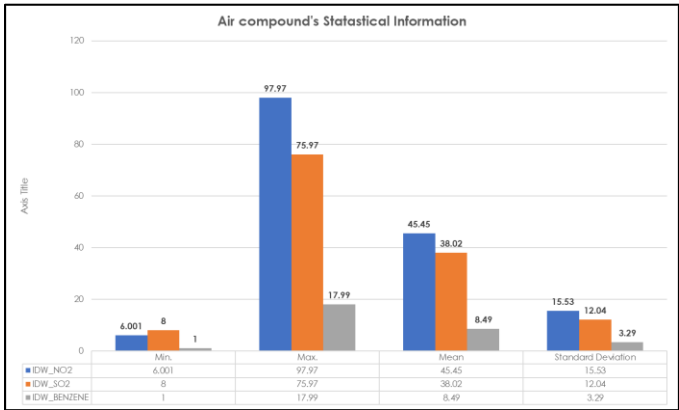
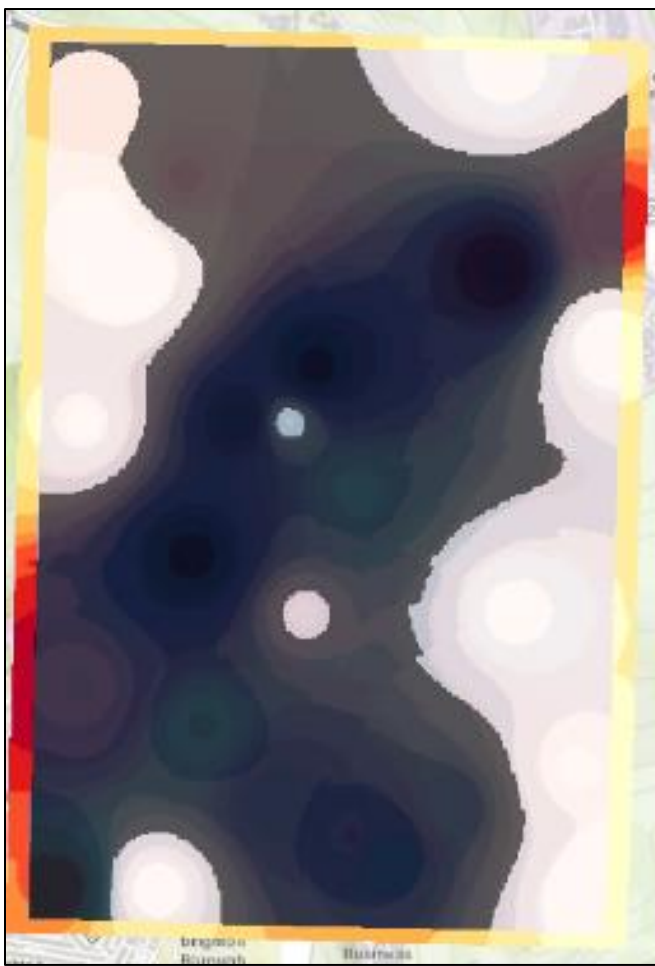


Figure 2: Statistical Information for three Pollutants

Due to higher dilutions of pollutants across active thoroughfares, which are completely emitted by public & private vehicles (i.e., cars, trucks, and other motor vehicles). Particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), and benzene are just a little instances of pollutants directly produced by vehicles, but many other pollutants are also emitted. Additionally, the emissions from motor vehicles contribute to the development of additional air pollutants, such as ozone (O3) and nitrogen dioxide (NO2), which are found in higher amounts downwind of major roadways and near them respectively.

The value ranges are mainly centred on mean annual concentrations, which are typically expressed in quantities like parts per million or per billion. The 26 red points are representing air quality sample’s location. However, Brighton Council only has one station for continuous air quality monitoring.

After measuring the air quality parameter and comparing the Irish EPA standard, to conclude that, as per the 26 samples of air quality, it is clearly predicted that along the road the pollution will increase day by day. According to the air quality standard: 20 ug/m3, 40 ug/m3 & 5 ug/m3 for No2, So2 & Benzene individually. Due to high increments in population growth and area morphology its indicated that, the pollution which is much higher.



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Map 4: Air Quality Map as per Exact Air Quality Parameter

Wind Energy Potential in Co. Limerick: A Site Suitability Report

Author: Margarida Victor

In recent years, supplying humanity with reliable and accessible source of energy has been the biggest issue for the Government. According to the European World Energy, Technology, and Climate Policy Outlook 2030 report (2003), between 2000 and 2030, the average annual energy rise in global demand will reach 8%.

According to the Paris Climate Agreement in 2015, environmental issues such as climate change, pollution, global warming, and traditional fossils that have been used to provide human energy for many years have brought concerns about the use of these resources and increased the tendency to employ more renewable resources (Yousefi & Montazeri, 2022). Therefore, several developed and developing countries have adopted policies toward the use of renewable energies such as wind and solar energy to reduce their dependency on fossil fuels (Satkin et al., 2014; Moradi et al. 2020). Yousefi & Montazeri (2022) points out, countries ratified the Paris Climate Agreement in 2015 to control this critical situation. However, Ireland agreed in 2016 to reduce 40% in EU-wide Greenhouse Gases emissions by 2030 (Liobikienė & Butkus 2017; Climate Action Plan 2019).

Yousefi & Rahmani (2021) emphasized that the use of solar energy, wind waves, and biofuels plays an essential role in reducing greenhouses gases emission. According to Satkin et al. (2014), wind

energy is a known and safe type of renewable electricity that can be economically sustainable, environmentally safe, and contribute to reduce CO₂, SO₂, and NO₂. Browne & Moles (2009) suggests that domestic electricity consumption increased by 7% from 0,125 global hectares (GHa) per capita in 1996 to 0.134 GHa in 2002. This analysis was undertaken as part of a wider sustainability appraisal of the Limerick city using metrics and indicators relating to material and product flows and embodied and direct energy consumption (Browne, 2007).

Literature review

Van Haaren & Fthenakis (2011) presented a novel method of site selection for wind turbine farms in New York State using GIS-based spatial cost–revenue optimization. The paper used ArcGIS Desktop 9.3.1 software and provided insights into the most feasible sites for wind turbine farms based on user inputs, which can assist wind developers, utilities, and State governments in attaining renewable portfolio standards.

In Indonesia, Pambudi & Nananukul (2019) used a Hierarchical Binary data Envelopment model to identify a suitable location for building a wind farm, considering geographic and structural features, in 165 districts and 33 provinces. Similarly, Szurek & Nowacka (2014) developed a GIS-based method for selecting the optimal location of a wind farm in the Prusice commune in Poland, using a multi-criteria approach with the Analytic Hierarchy Process and Weighted Linear Combination methods to determine

weights of sitting criteria and to develop a composite suitability map.

Recently, Yousefi & Montazeri (2022) used GIS to select a site for a wind power plant, where wind speed and slope were identified as essential criteria using the Analytic Hierarchy Process to weight the criteria and apply them to the study area.

This project aims to achieve energy diversity by using multi-criteria evaluation analysis for choosing wind farm sites in Limerick County to minimize the use of electricity for future generations. The most important innovation of this study is the consideration of wind speed and the existing wind farm criteria to determine the potential sites for wind energy resources in Limerick County. Section 2 introduces the Methodology with a description of the study area and the scope of the multi-criteria evaluation. Section 3 explains the technical description. Section 4 describes the results and discussion, and section 5 represents the conclusion.

Methodology

Limerick county is in the mid-West side of Ireland. The total population of Limerick County is 194,899, which is 2.7% larger since the last census in 2016 (Census, 2016).

The Digital Terrain Model map with the wind farm's locations in Limerick County is in figure 1. Figure 1 describes Limerick County as flat land to the centre and North with more elevated areas to the west, southeast, and northeast. Limerick's largest urban areas are in a sprawl of the city and environmental

area to the North, and the rest of the County is rural with villages and towns. According to Limerick Development Plan 2022-2028, the most crucial part of the renewable infrastructure is it produces energy itself. The wind farms in Limerick are within areas with high elevation and far from urban areas.

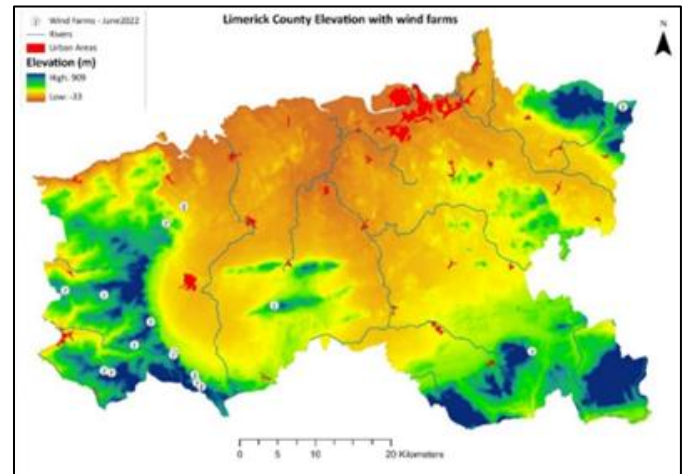


Figure 1: Map of Limerick County showing digital terrain model and the location of the wind farms.

Scope of the Multi-Criteria Evaluation

The scope of the multi-criteria evaluation in this project is to identify suitable sites for installing new wind farms in Limerick County. The aim is to address the increasing demand for energy due to population growth in the area. The evaluation will consider several criteria to identify optimal sites, including proximity to existing wind farms, accessibility via possible roads, and high wind speed. The selected sites should also be located away from urban areas to ensure safety. To achieve this objective, the project will use a multi-criteria

evaluation approach, combining different criteria to rank potential sites.

Technical description

Selecting a suitable site for a wind farm and its installation requires several aspects of multiple criteria and evaluations to identify the best location to implement the project and minimize social and environmental issues to the wind power development (Gorsevski, 2013).

A set of technological, economic, social, and environmental criteria referred as siting criteria—is chosen to create a model that would be able to pinpoint these locations.

The Criteria selection was based on information from the literature review and Guidelines for Irish Wind Energy Development (2019).

Following the literature review and the data availability were defined the following Criteria for the evaluation (Table 1).

Criterion 1:	The new wind farm should be in areas with high elevation greater than 100m.
Criterion 2:	The new site should be away from the urban areas.
Criterion 3:	The new site should be outside the Natural Heritage Areas (NHA & SAC).
Criterion 4:	The new site should be located as close as possible to the primary, secondary and access roads.

Criterion 5:	The new site must have a Slope less than 10%.
Criterion 6:	New area should lie not too far from existing wind farms.
Criterion 7:	The Wind speed should be more than 5m/s.

Table 1: Generated Criteria for the evaluation

In total 7 criteria were considered, of which four constraints and three factors. The criteria description is summarized in table 2.

Criteria Criterion Constraints Factors maps

Criterion 1	Elevation	>100m	
Criterion 2	Distance from the urban areas	>2000m	
Criterion 3	Natural heritage areas (NHA and SAC)	>800 m buffer	Normalized from 0 to 1 with 1 closest to the 800m and 0 further away.
Criterion 4	Distance from Primary,	>100m	Normalized from 0 to 1 with 1 closest

	secondary and access roads		to the 100m buffer and 0 further away.
Criterion 5	Slope	<10%	
Criterion 6	Distance from existing Wind farm	>100 m	Normalized from 0 to 1 with 1 closest to the 200m buffer and 0 further away.
Criterion 7	Wind speed	>5m/s	

Table 2: Summary of the criteria, constraints, and factors.

There are some elements in table 2 considered as 'constraints,' or criteria that limit the available options by excluding certain areas from the analysis. Others are 'factors' that increase or decrease an area's suitability, typically on a normalized scale of 0 to 1 or by ranking. According to Anagnostopoulos et al. (2010), ranking may be the most common method for this kind of analysis. This project reviewed both types of normalizations. Factors, on the other hand, may contain a constraint. For example, a factor may rate the suitability of land development as the distance from the rivers increases, while excluding areas within 50 meters of the river from the analysis.

Data collection and analysis

The data relating to the roads, elevation, natural heritage areas, and land use were supplied, while the other data related to wind speed and wind farm locations were obtained from the Sustainable Energy Authority of Ireland (SEAI) atlas. SEAI it is a very useful source who make freely available a variety of wind data.

Some of the data required extraction from a larger dataset before being incorporated into the analysis. Wind farm data for example, was extracted from the .shp of SEAI where it appeared as an attribute table named '**WindFarm_Name**'. Distance from urban areas was extracted by identifying urban and semi-urban areas in the **CLC18_Corine** data file. All used layers were clipped from a larger all-Ireland dataset.

Justification for constraints and factors

In Multi-Criteria Evaluation, it is crucial to identify areas to exclude from the evaluation. This project has used approaches from published studies in the literature review and are described below.

Constraints

Criterion 1: Elevation

The elevation assesses the area's altitude. Therefore, high altitude is potential for the installation of a wind farm. Sener et al. (2010) says when choosing a suitable site for a wind farm is crucial to consider the highly elevated areas. According to Şimşek & Alp (2022), when the land has a high altitude reduces the cost of transportation and facility construction,

whereas low altitude increases flood risks. For this project altitude of more than 100m was considered.

Criterion 2: Distance from the urban areas

One of the most important criteria was the distance from urban areas. For this analysis, areas within 2000m from the nearest urban area were excluded and then normalised from 1 to 0, where 1 lies further the 2000m and 0 the excluded areas.

Criterion 5: Slope

Rahimi (2020) and Şimşek & Alp (2022) suggests that slope of the land is important in controlling the flow of surface water around the landfill, as well as the cost of plant construction and waste transfer. According to the authors, high slope is undesirable for wind farm project as it will increase the risk of contamination by facilitating the flow of leachate. In this study, the slope map was obtained from the Digital Terrain Model (DTM) map. Based on this suggestion, gradients of greater than 10% degrees were eliminated from the analysis.

Criterion 7: Wind speed

According to the European Wind Energy Association (2013), the power available from the wind increases as its speed does. However, the wind speed increases with distance from the ground, a higher tower, and a larger diameter rotor. The quantity of electricity a turbine generates depends on the wind speed. This project used meter per second (m/s) wind speed data with a mean average of 100m above the ground level. A dataset was compiled in 2013 and measured from 2001 to 2010. For this

criterion, it was considered a wind speed of more than 5m/s.

Factors

Criterion 3: NHA (Natural Heritage Areas)

The NHA locations are valuable for the habitats and animals. The Guidelines for Irish Wind Energy Development (2019) recommends avoiding building wind farms near these areas. As a result, a buffer of 800m was established around NHA and SAC.

Criterion 4: Distance from primary, secondary and access Roads

The Guidelines for Irish Wind Energy Development (2019) suggests, despite the stability of wind turbines built in line with best engineering practices, it is nevertheless preferable to achieve a safety setback from national and regional roads of a distance equal to the height of the turbine to the tip of the blade plus 10%. 100m of distance from primary, secondary and access roads was considered. Distance from primary, secondary and access roads was normalised from 1 to 0, with 1 the closest and 0 furthest away.

Criterion 6: Distance from the existing Wind farms – an important factor to consider is the distance between the existing wind farms. According to the Wind Energy Development Guidelines (2019) report, spacing should be uniform rather than a combination in any specific wind energy development. The amount of area needed for a wind farm varies on the number and kind of turbines being deployed because different types of turbines have

varied spacing requirements, 100m was considered for this evaluation.

Analysis

To perform the calculations and produce suitability maps all constraints were multiplied together thus eliminating, at a stroke all areas of prohibition.

Unlike the selected constraints, the three factors needed to be considered individually and weighted appropriately before inclusion, please see table 3 below.

CRITERIA	DESCRIPTION	WEIGHTING
CRITERION 3	NHA	0.6
CRITERION 4	Primary, secondary and access Roads	0.2
CRITERION 6	Wind farm location	0.2

Table 3: Weighting of the factors.

Results and discussion

The generated suitability map can be seen in figure 2. The evaluation establishes that there are sites of high and high to moderate very further from the urban areas (Figure 3) of Limerick County. The suitability areas are in places near the existing wind farms (Figure 4). Perhaps unsurprisingly, there are fewer areas of high suitability around Limerick city, and the area is not surrounded by a significant margin of high to moderate suitability.

The Final calculation

After generating all the criterion’s maps, the final calculation was varied out using the raster calculator tool with the following map algebra expression:

Suitability index = (0.6 * "Criterion3" + 0.2 * "Criterion4" + 0.2 * "Criterion6") * ("Criterion7" * "Criterion5" * "Criterion2" * "Criterion1").

The suitable maps were produced by subdividing the final map into 4 classes using equal interval classification.

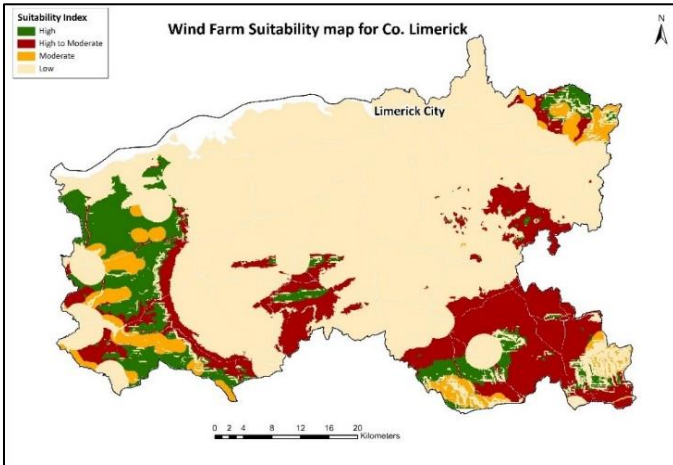


Figure 2: Suitability map for wind farm in Co. Limerick.

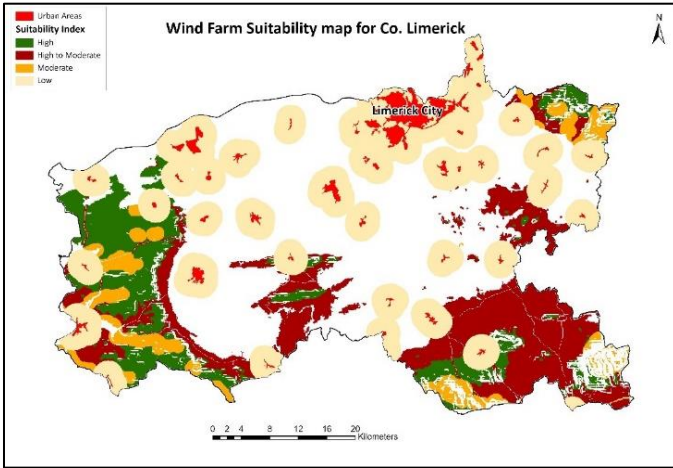


Figure 3: Suitability map for wind farm with the 2000m buffer of the urban areas.

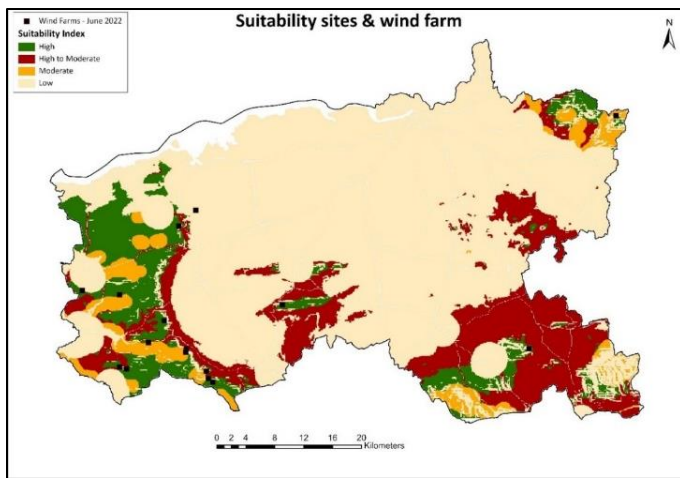


Figure 4: Suitability map for wind farm and wind farm locations.

The MCE shows that there are many promising locations in which the wind farm might be sited within Limerick County.

The suitability index enables us to deal with the main objective of this project. Several areas around the West of Limerick show themselves to be “Highly suitable” compared to the places near Limerick city. The East and North-east of Limerick has potential for wind farms as well, and this is very encouraging for the future as there will be more sites to build this renewable resource.

Yousefi & Montazeri (2022) had similar results on their study, where the less favorable areas in Iran were adjacent to environmentally restricted areas and urban areas.

To improve the trustworthiness of the analysis additional aspects could be considered while designing wind farm sites. For instance, challenges with land ownership, social opposition, public opinion, political influences, and other land-use conflicts could affect the final evaluation. Even

though the right instruments were used for this research, the suggested technique and outcomes have certain limitations.

As suggested by Janke in 2010, the use of energy output maps needs additional field verification by the measurement of wind speed at a specific site.

There are a few additional datasets which would have been of benefit to the analysis, first and foremost a higher resolution DTM with the grid size of 90m that was used to produce the slope is far too low in resolution to accurately capture slope for the constraints used in this analysis (criterion 5).

It would have been very beneficial to have updated wind speed data. The used data is dated and most likely speculative for the average wind speed nowadays. Although the revised data is not yet accessible to the public. There are other approaches indicated in the literature review that might have been used to take a more quantitative approach to the weighing process, but that is outside the scope of the project.

Finally, further interaction with all stakeholders would be necessary for a more thorough examination to establish agreement on the decision hierarchy, restrictions, and factor weighting.

Conclusion

This project aimed multi-Criteria evaluation for a suitable site for a wind farm within Limerick County. Within the scope of the analysis, seven criteria were generated, four constraints, and three factors (weighted separately).

The findings of this study suggest that there are large suitable sites to install a wind farm for the future generation in Limerick County. It could be either in the East or North-east side of Limerick County.

This study's findings add to the existing literature in several ways. First, it identifies potential new wind farm locations in Limerick. Second, it provides an overview of which criteria should be considered when selecting 'highly suitable' sites.

The most significant limitation of this study is that the location of suitable wind farm sites was estimated using only available data. Even though there is enough land available for utility-scale wind projects, no wind farm will be built on private property without the owner's permission.

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How Beneficial are Climate Models?

By Sarah Gallagher

We all know that most climate models that are utilised now are imperfect at times but there are some climate models that are valuable to us depending on what you are looking to find and/or project in climatic terms. For example, to analyse how the processes of our climate in the past and/or the present may have operated, projecting climate change scenarios, as well as how our climate conducts itself in general. In terms of a climate model, climate models are extremely valuable to us if they have the capability to supply adequate and accurate data in real time on the workings of our climate and the processes that interact with our climate and our atmosphere. Climate models are also valuable if the models seek to carry out simulations to see what is going on with our climate. In this essay, I seek to find whether climate models are actually fit for purpose in the climate world and the innovations that they have carried out to enhance their model capabilities and credibility for climate research purposes alongside things that they may lack in. The climate models I look to examine further are the following: the regional climate model, the earth system model, and the coupling climate-carbon cycle model.

The regional climate model has the capability of supplying clear and extensive data and simulations in the workings of our climate, the processes that take shape in our climate, and climate change than most of the climate models that are utilized at the moment in the climate world. The regional climate model is

not solely constricted to examine climate processes in regional areas but the model itself examines climate processes in any area throughout the globe whether its regional or over a large area. As we know climate models simulate many varieties of climate scenarios or climate events. The regional climate model oversaw warm regions in the model and the data collected from the model itself indicated that warm regions are less realistic and more sensitive to model configurations, where regional forcings are weak, and various feedbacks between cloud and radiation, or land and atmosphere, play a more dominant role in determining regional climate and its sensitivity to greenhouse forcing (Wang et al., 2004: 1603). It seems to be easier for the regional climate model to gather data or indicators of what is actually going on with the atmosphere and the earth rather than be able to show how the climate is behaving regionally. If the regional climate model is not capable of showing what is going on regionally with the climate, then how can a regional climate model be able to show projections or indicators of a future climate event. Then the regional climate model needs to make enhancements in order to work efficiently.

Regional climate models have been a valuable tool when the model has looked to be alert to climate change. The model looks at regional forcings that may interact with changes induced by greenhouse warming, such as changes in large-scale circulation or direct radiative effects (Wang et al., 2004: 1604). The model does so to keep up with the workings of the climate under a climate change scenario and to watch out for indicators. The capability to pick up

real time on a region under a climate change scenario is helpful as it would let us know how climate change might play out and what effects it may leave. As a much warmer climate under a climate change scenario is probable, the regional climate model has been able to demonstrate under a climate change scenario that levels of precipitation will rise in warm and cool seasons with variabilities in atmospheric moisture, temperature, and large-scale circulation (Wang et al., 2004: 1606). If precipitation plays out that way under a climate change scenario, then anything can happen. The climate events are what they are, there is nothing we can do about it.

Even though some climate models are valuable sources in supplying great detail of how the climate is behaving as a whole, the earth system model is such a complex system to work on and it tries its best to supply great detail about the workings of the earth system. The earth system model does bring it benefits in supplying adequate and accurate data and illustrations of climate variability, illustrating how human activities have contributed to growing levels of greenhouse gases, and making projections on scenarios we could face like what the future state of our climate will look like if we were to live under climate change and illustrating a future where we choose to reduce the levels of greenhouse gases. The earth system model supplying data, illustrations, and projections of what our future will be like in climatic terms is a helpful tool for us so that we take care of our climate. However, the earth system model lacks in not supplying enough data on a much wider scale of the processes that interconnect with the earth

system. The earth system model can at times spatially lack in covering most processes across a lot of areas within the earth system where variabilities do take place (Flato, 2011: 792). So, there can be discrepancies in the data the earth system model obtains to find out whether variabilities actually took place or not. It can be very demanding on the earth system model itself when there are discrepancies in picking up data and then the earth system model resorts to the option of parameterization.

The coupled climate-carbon cycle model is ideal for us in the climate world to get a greater scope of how carbon functions with our climate. The coupled climate-carbon cycle model does have its complexities when trying to supply data in real time. In addition, the coupled climate-carbon cycle model works to provide new estimates of the cumulative CO₂ emissions compatible with specific climate targets (Jones et al., 2016: 2855). This is a progressive move for the coupled climate-carbon cycle model as it will be able to visually supply data and simulations on climate change or climate events that are carbon related to governmental and international climate organizations. As the prospect of climate change seems likely, the coupled climate-carbon cycle model has innovated simulations in how the carbon cycle may interconnect with the atmosphere and warm the climate under a climate change scenario. Under the climate change scenario, it is probable that our climate will warm up as the atmosphere will take in unprecedented levels of greenhouse gases including carbon dioxide. As far as carbon dioxide is concerned, it may remain in the

atmosphere and it might be impenetrable to part itself from the atmosphere as the climate warms which in turn would result in the disruption of the carbon cycle as a whole. The earth and the oceans would not be able to avail of carbon dioxide. The disruption to the carbon cycle would be devastating as regions would dry up where our animals and plants inhabit. This is not acceptable. The disruption also plays a part in the oceans as the solubility of CO₂ in seawater reduces as temperatures increase, and vertical mixing is also inhibited (Flato, 2011: 787). The carbon cycle will not function effectively or in the way that we know it functions as variabilities would be evident across our climate under a climate change scenario. Moreover, the fact that carbon dioxide may be in the atmosphere in turn increases its capabilities of warming the oceans further (NASA Earth Observatory, 2008). The earth and oceans would struggle as a whole under a dysfunctional carbon cycle.

Overall, climate models are valuable sources to represent illustrations and/or data on the workings of our climate. However, the climate models do have their limitations or constraints in how they function effectively to obtain real time data that may assist in informing us in how our climate is working as well as projections of climate events such as climate change in the future. So, the climate models currently in place supply us with data and history of past climate. In addition, this information can be analysed to give a rough timeframe of when different climate change or any other climate events may occur in the future. If we did not have climate models in the

climate world, we would all be negligent in what is actually going on with our climate and we would be ill equipped in predicting and warning us of potential natural hazards that are related to climate change or any other climate events.

I would conclude by saying that yes while there are old climate models being used to analyse data on climate and climate related events, the climate models themselves probably need to be upgraded and modernized. Data is everything. To illustrate variabilities in our climate, you need data. If we do not have relevant data to make indicators, then we cannot show what variabilities will take place in our climate. We also will not be able to convince, educate, and show at a local, national, and international level and all the other relevant climate-controlled bodies such as the Intergovernmental Panel on Climate Change.

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In Film: Comparing and contrasting the representation and explanation of the Cold War in 'Dr Strangelove' and in 'The Fog of War'

Author: Eimear Harrington

'How I Learned to Stop Worrying and Love the Bomb' or more commonly known as *'Dr Strangelove'* is a film depicting a satiric view of the Cold War and the fear of nuclear war between the Soviet Union and the United States. *'The Fog of War'* is a documentary film interviewing former secretary of U.S. defence, Robert McNamara as he reflects upon his time as secretary, navigating his way through his decisions made during the Cold War. In this essay I will discuss the themes of deterrence, security dilemmas, misconceptions of self and enemy, and paranoia caused by these factors. I will compare and contrast the two ways that the Cold War is depicted in these films and provide evidence to convey these factors are relevant.

Deterrence and the Security Dilemma

The term deterrence in *Dr Strangelove* is described as "*the art of producing in the mind of the enemy... the fear to attack*" (*Dr Strangelove*, 55:00). The conclusions reached in *Dr Strangelove* about the use of nuclear weapons, implied that nuclear war would mean the destruction of both protagonists, and indeed of the rest of the world (Yu, 2019). This realisation has been called the principle of Mutual Assured Destruction. This scenario is what did occur when it came to the Cold War in the 1960s. Both the Soviet Union and the United States wanted to have

more power and more military control than the other (Yu, 2019). In the film, the Soviet Union leader has a nuclear bomb that could lead to the destruction of the whole world known as “the doomsday machine”. The humour in Dr Strangelove comes from the idea that the act of deterrence was implemented incorrectly, and the Soviet leader had failed in creating fear in the United States willingness to attack as the doomsday machine required to instil fear in the enemy was not known about. Dr Strangelove exclaims, “*Yes, but the whole point of the doomsday machine is lost if you keep it a secret! Why didn't you tell the world eh?*” (Dr Strangelove, 56:00).

In 'The Fog of War', McNamara described how he took a realist stance on the conflict and thought that it might be avoided by threatening to use force (Weissman, 2022). Realism, usually referred to as political realism, is a perspective on world politics that emphasizes its adversarial and conflictual aspects (Korab-Karpowicz, 2010). When it comes to realists and their concerns in relation to national status and the power of the state, they consider and act in their own best national interests in an effort to secure and maintain power and security (Korab-Karpowicz, 2010). The emphasis on power and self-interest by realists might be problematic since they frequently question the applicability of moral principles to relationships between nations (Korab-Karpowicz, 2010). By forming alliances with other anti-communist nations like Australia, New Zealand, South Korea, and Thailand he believed this would create deterrence and instil fear in Communist

nations (Weissman, 2022). “*It was luck that prevented nuclear war. We came that close to nuclear war at the end. Rational individuals: Kennedy was rational; Khrushchev was rational; Castro was rational. Rational individuals came that close to total destruction of their societies. And that danger exists today*” (The Fog of War, McNamara, 2003). Both the U.S. and the Soviet Union were striving for power and feared an imbalance of power when it came to the war effort (Weissman, 2022). Both powers competed to develop the best nuclear machines and weapons, and the Cold War became an arms race (Weissman, 2022).

Both countries are constantly battling to always outdo each other (Lindley, 2001). This is depicted in Dr Strangelove when the Russian Ambassador says “*There are those of us who fought against it but in the end, we could not keep up with the expense involved in the arms race, the space race, and the peace race... our doomsday scheme cost us a small fraction of what we'd been spending on defence in a single year. But the deciding factor was when we learned your country was working along similar lines, and we were afraid of a doomsday gap*” (Dr Strangelove, 53:00). This is followed by the General Turgidson replying “*Gee, I wish we had one of those doomsday machines*” (Dr Strangelove, 55:00).

Essentially what is conveyed satirically through Dr Strangelove is that both countries during the Cold War always had a means of attacking the other, but through deterrence, fear was created, concluding that nuclear war was not in their best interests. Knowing that both countries had these war machines gave

them the military edge and made them a credible threat without needing to strike (Yu, 2019). In *Dr Strangelove* when the rogue, General Jack. D. Ripper releases the nuclear bomb, this put all this at stake and nuclear war was threatened. *“I admit the human element seems to have failed us here. But the idea was to discourage the Russkies from any hope that they could knock out Washington, and yourself, sir, as part of a general sneak attack”* (Dr Strangelove, 29:00).

Misconceptions and Paranoia

The theme of misconception of self and enemy is only truly apparent upon reflection after the events of the Cold War. These thoughts are often driven by fear, in this case of the communist regime or possibly by propaganda construed internally within the government (Yu, 2019). Misconception and paranoia were portrayed quite well in *Dr Strangelove*. This anti Communist paranoia led internal government organisations to make outrageously crazy decisions which is highlighted and exaggerated in *Dr Strangelove* as General Jack. D. Ripper claims that *“war is too important to be left to politicians”*, as he takes matters of war into his own hands (Dr Strangelove, 1964). General Ripper believes that the communist regime has infiltrated American society and the U.S. government. He also believes that they have contaminated and tainted the water systems. This misperception and the treating of the enemy as a greater evil led to extreme paranoia during the Cold War, and conspiracies surrounding fluoride tainting water systems continues. These thoughts of paranoia often led to tension in civil-military relations.

General Turgidson’s paranoia is clear here when he attempts to convince the President that it is in his best interest to strike first during a crisis before the Soviet Union get the chance. *“They are going to go absolutely ape, and they're gonna strike back with everything they've got... if on the other hand, we were to immediately launch an all-out and co-ordinated attack on all their airfields and missile bases we'd stand a damn good chance of catching them with their pants down...an unofficial study which we undertook of this eventuality, indicated that we would destroy ninety percent of their nuclear capabilities. We would therefore prevail and suffer only modest and acceptable civilian casualties from their remaining force which would be badly damaged and uncoordinated”* (Dr Strangelove, 34:00). General Turgidson emphasises to the President that they should take immediate action. This embracement of pre-emption was also seen during the Cold War as this fictional General Turgidson in the film, is often compared to General Curtis LeMay, a key air force strategist who believed in striking in *“full weight... if possible before the Soviet blow is delivered”* (Lindley, 2001: 664).

Instead of massively increasing the size of the U.S. military, McNamara might have supported measures to restrict weaponry and strive toward disarmament if he had been leading the war from a liberal position (Weissman, 2022). *“We were wrong, but we had in our minds a mindset that led to that action, and it carried such heavy costs”*, McNamara stated, *“We see incorrectly, or we see only half the story at times. We see what we want to believe. Belief and seeing –*

they are both often wrong” (The Fog of War, Sambrook, 2004). McNamara discusses the Tonkin Gulf, an incident that the U.S. military were involved in that directly immersed them in the Vietnam war. The U.S. attacked Vietnamese war ships on two separate occasions due to believing they were being attacked. This was true on one occasion but misinterpreted on a second occasion leading the U.S. military to attack unprovoked due to misinterpretations and interceptions in communication. These rash decisions were made without consideration due to the levels of paranoia that filled their minds during this time. McNamara alludes to institutional pressures that caused and fuelled these rash decisions made by himself and colleagues. McNamara understands and recognises these misconceptions in hindsight as he reflects on his memories of the Cold War. “It isn’t that we aren’t rational, we are rational, but reason has limits” (The Fog of War, McNamara, 2003). McNamara describes reasons having their limits, as to the “fog” that falls over war, referring to the challenge of decision-making in conflict and times of uncertainty.

Conclusion

Through analysing both of these films, I discovered more similarities than contrasts. Both *Dr Strangelove* and *The Fog of War* have created excellent depictions of the Cold War from two different angles, through satiric drama and a documentary through real life experience. *Dr Strangelove*, although exaggerated, does not depict scenes and create characters too dissimilar to what might have

been seen at the time due to misconceptions of the enemy and the war leading to extreme paranoia in some cases. *The Fog of War* contemplates in hindsight how things might have been different if there had of been more logic behind decisions instead of judgements made through fear. Both films explored deterrence and the race to power as well as the tension and lack of trust between the two powers that caused such anger and insinuation of evil in the enemy. Both films contain geopolitical themes that make them excellent sources of information for understanding more about this time in history and exploring a deeper knowledge of the logical and illogical reasonings for decisions made during this era.

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In Film: John Carpenter's 'They Live'

By Chris Moloney

As Karl Marx once said “Money is the universal, self-constituted value of all things. Hence it has robbed the whole world of its proper value” (Marx, 1843). Marx identifies here how centred our world is around materialistic needs, and how it has blinded us from true happiness. In Anderson's book 'Places and Traces,' he discusses how “capitalism affects our identity” (Anderson, 2015, P. 111). Capitalism has been a central part of western identity, and consequently our media, for centuries now. One example of such media is *They Live*, directed by John Carpenter in 1988. This movie is a critique of capitalism in society and how the want for wealth influences people. Multiple lenses will be used to analyse this movie from a cultural geography perspective, paying particular attention to the cultures of capitalism. Cultures of capitalism analyse processes such as marketing and consumption “which is vital to capitalist economies” (Daniels et al., 2016). The themes that will be explored throughout this review will be capitalism, consumerism, environmentalism, and power. These themes intersect several lenses and studies found within cultural geography.

About the Text

They Live is a science fiction piece which follows a drifter who discovers sunglasses that reveals the upper echelons of society are disguised as an alien

species. These aliens are manipulating people to consume, reproduce and conform to the status quo through subliminal messages in media, as seen in the image below. *They Live* is a reflection on Ronald Reagan's conservative revolution which Carpenter explained in an interview with 'Exile of the Underground' in 2016. Carpenter says that at the time "there was a great deal of obsession with greed and making money" and decided to make this movie which is "partially a political statement" (2016). Interestingly, Carpenter goes on to say, "right now (They Live) is even more true now than it was then" (2016), in that we are even more influenced by media today.

Consumerism

The theme of consumerism is constantly examined in *They Live*. "Consumerism refers to excessive consumption of material goods and services" (Vujnovic, 2017). Consumers are influenced by advertisements on tv, in magazines and through media. We can see advertisements being used as a tool for capitalism in scenes where our drifter is wearing his sunglasses and can see the hidden messages in magazines. In the film it is said that these messages are used to "keep us asleep, selfish, and sedated" (Carpenter, 1988, 13:36). We can see that there is a connection between media and capitalism in both *They Live* and. As analysed by Anderson, institutions such as the media "are closely connected to the economic base of capitalism" (Anderson, 2015, P. 115). While *They Live* is an extreme example of manipulation of consumers through media, it is not entirely fiction. Advertising

is a key process within the culture of capitalism and if we look through the lens of everyday geographies and examine today's society, we can see that social media is another outlet through which consumers can be manipulated. Digital marketing and the rise of the 'influencer' has created new challenges for consumers. Meaning that we are being advertised to in greater volumes and this feeds into our need to consume. According to Harrigan (2021), HubSpot reported in 2019 "that over 70 percent of consumers are more likely to purchase a personally recommended product or service".

Power

When we study cultures of capitalism, we can always identify problems that arise surrounding power. According to Anderson, "Within capitalist culture the distinction between those who own the means of production and those who only own their labour power is crucial as it secures different opportunities to make currency" (Anderson, 2015, P. 112). Power struggles are often personified throughout *They Live*, in forms such as billboards and media, but also through lived experiences of the characters. In the opening scenes, our drifter engages in conversation with a man who lost his job and received no compensation from his employer. The sad reality which he points out to us is that "he who owns the gold, makes the rules" (Carpenter, 1988, 10:16). This analogy sums up the influential power big corporations have on the economy and workers. In the case of *They Live* the big corporations just happen to be ruled by this alien society.

Environmentalism

The effects of capitalism can be seen throughout our natural landscapes, from the Amazon Rainforest to the Pacific Ocean. Issues such as deforestation and overfishing stem from greed created by capitalism. The commodification of nature is a commonly used trope in science fiction movies, and *They Live* is no exception. The alien species, that represents the world's elites, have come to Earth for its resources. To the aliens, Earth is just another “developing planet” and a “natural resource” (Carpenter, 1988, 1:10:26) for them and once they finish, they plan to leave for another. We can see parallels to this in real life. Big corporations which are run by the world elites are using and destroying the Earth for personal gain and once they finish, they plan to move to another planet. With messages such as this, we can see how *They Live* is partially a political statement. This movie works as an inspirational tool to encourage people to revolt against corporations in the name of the environment.

Conclusion

This review analysed the cultures of capitalism through a cultural geography perspective. *They Live* is one of many texts that can be used to examine the cultures of capitalism, but I have yet to find one that is so multifaceted and touches on so many distinct aspects such as power, consumerism, and environmentalism. *They Live* is three decades old but is more pertinent today than ever before. With relevant themes such as consumerism, power, and

This alien class are also able to influence people through messages on signs. As studied by Anderson, this is considered an example of dominating power. “This is the power that can stop individuals doing exactly what they want...and act against their own values and interests” (Anderson, 2015, P. 76). The signs presented to us in *They Live* preach messages such as, “no thought” “watch tv” and “obey.” An example of such can be seen below. These signs are used in an attempt to culturally order a particular area, as Anderson puts it. However, Anderson discusses how dominating power needs support in order to form behaviour and that a credible threat needs to be present. In *They Live* we are shown that once our protagonist is discovered to be seeing the signs, the alien class report him, saying “he can see!” (Carpenter, 1988, 38:43) and he is promptly cornered by authorities.



David Read, 2022

environmentalism, and parallels drawn from contemporary life, *They Live* is a must see.

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