TRAIL SIX

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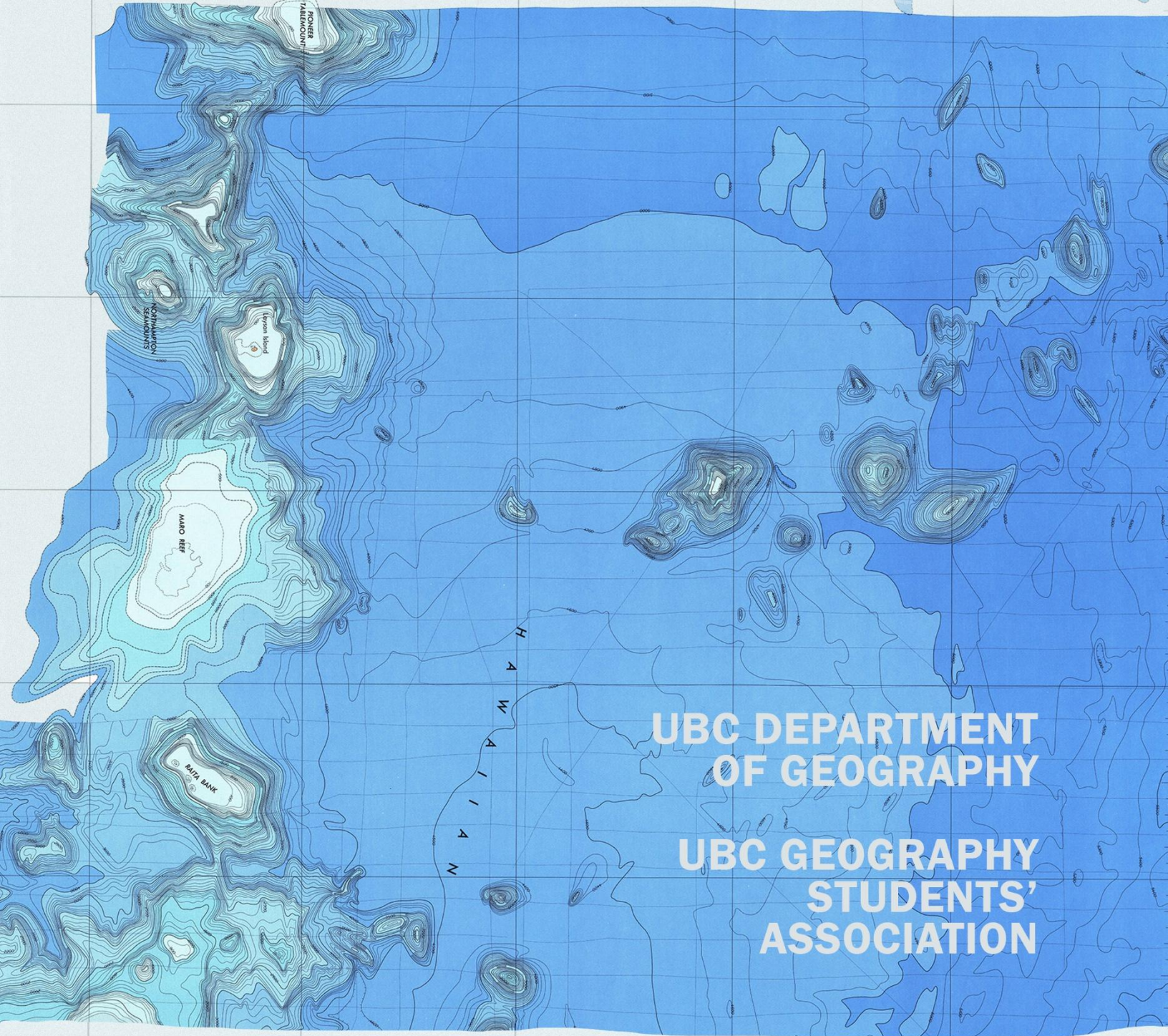
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TRAIL SIX

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FOREWORD

I am writing this foreword in bleak times: Gaza has been left in ruins; the United States has initiated trade wars with its closest allies; President Trump threatens territorial expansion; in recent months large areas of Los Angeles were lost to wild fires. And so on. These are the times we live in. Reading the papers in this issue of *Trail Six* has been a relief and an inspiration.

The papers are inspiring in part because they embrace complexity. There are no 'black and white' assessments and no simple solutions on offer. In her evaluation of the phase-out of jeepneys in metro Manila, Catalina Garcia weighs the need to transition to cleaner energy against the injustice of the current program of transition. She sees opportunities in a more bottom-up approach, one that preserves the livelihoods of existing small-scale jeepney operators. In his paper on gender ideologies and cultural hegemony in Guatemala, Aidan Huang parses the work of different masculinities, differentiating between the hegemonic masculinity of the colonial-capitalist state and Mayan masculinity, the latter emphasising emotional connectedness, along with responsibility for protecting and providing for the family. Through case studies from Bangalore India and Cochabamba Bolivia, Joshua Bransford outlines the ways that neoliberalisation is both imposed from above and internalised and reproduced from below, within dynamics that are specific to each context. In his analysis of the BC Agricultural Land Reserve (ALR), Thomas Kroeker traces the unintended and surprising consequences of the ALR property tax arrangements. These include the building of massive residential mansions on land designated as agricultural, extreme land price inflation, and the development of a speculation-inspired blueberry farming industry. Jacob Ereshefsky examines how the celebrated High Line in New York City is also a vehicle for gentrification. In her paper, Ambihai Akilan develops a nuanced analysis of the complexities lived by those forced to migrate to Canada. How, with their own histories of displacement and marginalization, are refugees to come to terms with their place within the violence of settler colonialism?

The papers are also inspiring because they imagine a better future. As Ambihai Akilan notes, "acknowledging complexity is not the same as surrendering to it." And there is no surrender in these papers. Hannah Swearingen and her coauthors find futures of liberation in Indigenous and Japanese science fiction. In a critique of remote sensing and the digitized mapping of oceans, Matthew Phan imagines a future in which the oceans, sky and land are more fully understood to be in synergistic relationship. Indigenous perspectives, he argues, allow us to reframe our understanding of our methodologies and technologies, and the relations that sustain them.

I am also inspired by the ways that a good number of these papers convey an understanding and appreciation of the interconnectivity of our world – across national borders. Ellen Wu, for instance, demonstrates this vividly by a close analysis of the global implications of discharging Fukushima radioactive waste water into the Pacific Ocean.

The writing and creativity inspires. Consider the introductory sentences of Ambihai Akilan's essay: "I have an accent in every language I speak. My tongue stumbles over the 'zh's in Tamil and trips over the 'r's in English. Being Tamil-Canadian is almost a contradiction in itself: the colonized and the colonizer, stuck together begrudgingly, using a hyphen for sello-tape."

And finally, I am inspired by the friendship and community demonstrated in the draft papers I have had the privilege to read. Academic writing is a collective exercise, though this is often hidden behind single authorship. In the case of Trail Six, each paper has been edited by three students and at least one faculty member. I enjoyed reading the marginalia of this feedback. The constructive suggestions from student editors are often quite critical, indicating the seriousness with which they have taken the task (and the skills they have learned in their time at UBC). There are also comments that telegraph friendship and generosity. Consider Aidan Huang's note to Matthew Phan (which had the added virtue of making me laugh!): "U ate with this section wow."

I thank Alina Debyser, Editor-in-Chief, and the Volume 19 authors, editors, and faculty reviewers for all of your hard work, for building the UBC geography community, and for creating such a clear window into what is on offer in a geographical education at UBC.

Dr. Geraldine Pratt

Head, Department of Geography

LETTER FROM THE EDITOR

Another year, another volume complete. In its nineteenth year of running, *Trail Six* has long been an important fixture within the UBC Geography Students' Association and Department of Geography. Still, it represents only a small fragment of the depth and breadth of incredible work produced by undergraduate students each year. It also shows a deceptively final and static scene, both attesting to and obscuring the joys, pitfalls, and unseen parts of the process that make the journal possible.

I wanted to take a moment to acknowledge some of these experiences, such as: *Attending office hours, thinking of ideas in the shower and being unable to record them, focusing on the phrasing of one sentence so much that it loses meaning, highlighting, underlining and striking through, trying every variation of search terms on Google Scholar, scribbling on paper, changing your paper topic last minute, reflecting on lived experience, discussing with roommates, looking up "when to use a semicolon," wondering if you're still using a semicolon right, feeling satisfied, knowing you could always do more, disagreeing with a critique, and relishing in the new perspectives that you gain.*

In a time when we're constantly pushed to move onto something new and keep up a fast pace, the opportunity to reflect thoughtfully on past work and take the time to carefully revise is deeply valuable. *Trail Six* gives students the opportunity to sit with their work for a longer time, let past ideas marinate, open their work up to new ideas, and continually reflect.

I am forever grateful to the incredible team of editors this year who were nothing less than outstanding, the authors who put their hearts into revising their work, and the faculty and graduate student reviewers who graciously offered their time and expertise to this project. The encouragement, patience, and commitment that I have seen across every stage has been heartening. I also want to thank the UBC Department of Geography and Geography Students' Association for their ongoing support of *Trail Six*.

It has been an honour to serve as Editor-in-Chief of *Trail Six* Volume 19. I hope everyone who worked on the journal this year has gotten as much out of it as I have.

Alina Debyser

Editor-in-Chief, Trail Six Volume 19

The Jeepney Phaseout: Navigating Affordability and Sustainability in Metro Manila's Public Transportation Infrastructure

Catalina Garcia

This paper examines the socioeconomic, environmental, and cultural implications of the jeepney phaseout. Jeepneys have long been a defining feature of Metro Manila's public transportation system, serving as an affordable and culturally significant mode of transit for millions. As an informal and entirely privately operated transportation mode, jeepneys play a crucial role in urban mobility in the absence of sufficient state-run alternatives. However, the Philippine government's Public Utility Vehicle Modernization Program (PUVMP) mandates the phaseout of traditional jeepneys in favor of environmentally friendly yet costly imported minibus models. This policy has sparked widespread resistance from drivers, operators, and commuters, who cite financial burdens, loss of livelihood, and fare increases as major concerns. While traditional diesel-powered jeepneys contribute significantly to air pollution and carbon emissions, previous research also highlights the economic and infrastructural inefficiencies of the current system, strengthening the case for modernization. However, this paper argues that a successful transition requires a more inclusive, bottom-up approach that balances sustainability with affordability. Transportation modernization must account for the needs of marginalized communities and ensure that reforms do not disproportionately disadvantage low-income operators and commuters.

Introduction

Jeepneys have historically been emblematic symbols of Philippine public transportation, beginning post-World War II when surplus Jeeps abandoned by American soldiers were repurposed and customized to ferry civilian passengers. Today, Jeepneys serve as affordable modes of transit with fares starting at 12 pesos (USD 0.20) and are used by nearly half of all commuters in the Philippines. An estimated 200,000 jeepneys nationwide transport around 9 million commuters daily (Magramo, 2024), with a quarter of them operating routes within Metro Manila (Rivas, 2023). Beyond transportation, jeepneys also serve as

iconic and significant symbols of Filipino art, resourcefulness, and cultural identity, characterized by their unique and vibrant hand-painted designs.

The current jeepney phaseout happening in the Philippines due to the Public Utility Vehicle Modernization Program (PUVMP) marks a significant shift in the country's public transportation dynamics, posing issues for jeepney drivers, operators, and commuters alike. Under the new policy, jeepney owners are expected to abandon their old vehicles and invest into more costly imported minibus models, presenting them with significant financial burdens. Focusing on the capital region Metro Manila, this paper explores

the rationale behind the government-implemented phaseout and public resistance to the program by examining the historical and cultural background of jeepneys in Filipino public transportation, the environmental consequences of these vehicles, and the socioeconomic effects this shift in public transportation infrastructure will have on the region as a whole. The challenges in implementing the PUVMP demonstrate the need for a balanced, bottom-up approach to informal public transportation (IPT) reform, ensuring that modernization efforts do not disproportionately harm marginalized groups by prioritizing sustainability at the expense of affordability.

Historical Background

The jeepney emerged after the destruction of streetcars and buses post-World War II and U.S. occupation of the Philippines, when abandoned jeeps from the U.S. Army were converted into passenger and freight vehicles by having their tailgates removed in order to accommodate more people (Fianza, 1980). This design has since evolved into the jeepney's current form, featuring two long benches that fit around 20 passengers facing one another. Their brightly colored, hand-painted exteriors make them iconic symbols of Filipino folk art and culture, often conveying messages and imagery related to family, religion, love, money, power, and pop culture (Blanton, 2015). The jeepney industry has led to the development of a profitable sector specializing in these customized, locally built vehicles, with skilled craftsmen and artists in family-run enterprises

responsible for the bodywork and painting (Meñez, 1988). Over time, jeepney operators continue to add to the evolving design of the vehicle, decorating them with their beliefs, interests, economic aspirations, and social commentary through often satirical methods, resulting in a unique, highly individualized representation of Filipino cultural expression.

Road-based public transport in the Philippines includes a range of modes, such as buses, taxis, tricycles, and motorcycles, with jeepneys being the most widely used. The current public transport system relies heavily on private sector initiatives, leading to competition among small operators for passengers and poorly optimized route networks. According to the Asian Development Bank (2012), road-based public transport in Metro Manila is provided entirely by the private sector, and jeepneys in particular serve around 785 routes in Metro Manila, with many operators owning only one unit. In many cases, routes are shared by multiple operators who compete among each other for passengers. These route networks are not optimized, and some areas are left poorly served (Sunio, et al., 2019), increasing the need for IPT reform.

The expansion of the Philippines' transportation network was strongly shaped by the effects of the political and military control of its colonizing nations, reflecting broader patterns seen in the transport development of many developing countries (Fianza, 1980).The growth of inner street transportation in the Philippines emerged due to the culture of 'door-to-door' transport, a widespread

and accessible form of IPT where passengers could request stops anywhere along the route, which can be traced back to the introduction and establishment of jeepneys to the transportation landscape (Jocelyn, 2023). A study by Guillen, et al. (2013) shows that traditional IPT modes like jeepneys play a significant role in the community, and people's dependence on them is closely tied to their frequent and habitual use, more so than concerns about the quality of service. Jeepneys have been a long-standing part of daily life for many Filipinos, making their use a regular habit, and since they are by far the most dominant and widely used mode, they are the primary focus of the PUVMP (Sunio, et al., 2024). The decision to phase out jeepneys stems from various factors, including environmental and safety concerns, since informal public transport can bring about negative externalities such as congestion, accidents, and air pollution, which provide the public sector with a clear rationale for the need to 'modernize' the current system.

The Jeepney Phaseout

Although jeepneys hold sociocultural significance in the Philippines, they pose notable environmental, political, economic, ethical, and technological issues (Cerio, 2017).The older, diesel-powered jeepneys contribute significantly to carbon emissions and air pollution, necessitating the need to transition to cleaner, more efficient alternatives. The PUVMP is a reform project proposed by the Philippine Department of Transportation in 2017 with the intention of restructuring the current informal transportation industry by replacing the infrastructure for improved efficiency, design, safety, and environmental sustainability. With this plan, public transportation vehicles with over 15 years of service would be phased out, and all public utility operators would be required to utilize new vehicles in compliance with the Euro IV emissions standards (Malasique & Rosete, 2022). The replacement of current Euro II automobiles with the Euro IV standard would substantially reduce transportation-related air pollution both on roadways and in urban areas, with the added benefits of significantly cutting pollution, saving fuel subsidies, and boosting global automobile manufacturing and market share (De Guinto, et al., 2024).

The transition to cleaner energy is one of the main driving factors behind this phaseout, as pollution from the older jeepney models contribute significantly to the poor air quality in the city. Ahanchian and Biona (2014) formulated a transportation model to analyze the trajectory of energy consumption and emissions from 2010 to 2040 in Metro Manila, finding that continuing with a business-as-usual approach would lead to a significant increase in energy demand and emissions. However, they also found that alternative interventions such as shifting to compressed natural gas (CNG) buses, improving fuel quality, implementing Euro IV emission standards, and replacing old jeepneys could effectively reduce energy demand and emissions. A combination of these measures is predicted to yield significant benefits, including a 27.8% reduction in

energy demand and the mitigation of environmental impacts. Another study by Tõnisson et al. (2020) states that jeepneys equipped with pre-Euro standard diesel engines are sources of high concentrations of combustion-generated black carbon (BC) particles which act as a carrier of harmful toxic and carcinogenic components of particulate matter (PM). Their research found that the BC levels measured were up to 50 times higher than in European or North American urban areas, concluding that jeepneys contribute up to 94% of the overall BC emissions in Metro Manila.

Numerous studies on Jeepneys clearly indicate their negative impacts on the air pollution levels of Metro Manila. As far back as 2007, Salanguit and de la Torre (2007) found that 41.53% of the jeepneys they inspected failed smoke emissions testing and were deemed no longer roadworthy and fit for operation. Moreover, there were also many design-related issues with the jeepney models that resulted in many needing to be upgraded. Originally only designed for short trips, jeepneys often become cramped during rush hours, as drivers overload them to increase earnings, posing safety concerns. According to Seva, et al. (2011), jeepney drivers often endure grueling shifts that can extend up to 18 hours, the length of the working day being dictated by owners of the units or the pressure on drivers to maximize earnings. Jeepneys manufactured in the Philippines are produced at minimum cost, and do not undergo proper design planning procedures that other vehicles are subjected to, resulting in poorly designed workspaces and uncomfortable conditions that can be detrimental to their health (Coz, et al., 2015).

These findings illustrate why the Philippine government is heavily pushing for the phaseout, deeming vehicular replacements necessary in order to curb the adverse environmental effects and harmful health-related consequences of retaining the current jeepney model. Agaton et al. (2020) assess the economic, environmental, and social impact of adopting newer vehicles for public transportation in the Philippines, like electric models which are seen as a crucial technology for transitioning to more sustainable transportation systems. However, they find that there are many obstacles in relation to financing, government policies, and public acceptance.

Since jeepney services are privately owned and operated, the government's PUVMP requires jeepney companies to either pay 2.8 million pesos (nearly USD 50,000) for the new imported minibus models, or consolidate into transport collectives if they are unable to afford the cost on their own. With the implementation of PUVMP, these transport collectives aim to help drivers share the cost of affording the new vehicles, ensuring better fleet management and more efficient road usage due to route optimizations. However, this has resulted in significant backlash and resistance from drivers and operators, who are mostly from lower-income brackets and believe they have no choice but to comply or lose their source of income (Beltran, 2024).

Public Resistance

The PUVMP involves a wide range of stakeholders and a coevolution of institutions, business models, and behaviors (Mateo-Babiano et al., 2020), meaning that there are many contradicting socioeconomic dynamics at play leading to delays in its implementation. Despite numerous extensions and grace periods provided by the government, resistance to the phaseout persists through transport strikes and protests, with drivers and operators citing economic challenges and loss of livelihood as their primary concerns, while commuters fear fare hikes and loss of cultural expression.

Despite 22 out of 23 Philippine senators signing a resolution urging for the suspension of the PUVMP due to unresolved issues—citing the high number of unconsolidated PUV units, the loss of the iconic jeepney design, and the low percentage of approved routes—President Ferdinand Marcos, Jr., remains adamant about pushing it forward. His administration dismisses opposition, insisting that since the majority of operators have now complied (around 80%), the remaining holdouts should not dictate policy, reinforcing concerns that the program prioritizes corporate interests over the livelihoods of small operators (Bajo, 2024). The Philippine government is still negotiating the phaseout terms amid ongoing protests and transport strikes, however, as many continue to resist the cooperative model. As of December 2024, 8,000 jeepney drivers and operators who initially complied with the program have withdrawn due to issues with cooperatives (Cariaso, 2024). Mar Valbuena, chairman of the transport protest group *Manibela*, explains that before the phaseout, drivers operated 5-6 times a week, but under the new cooperative model, they are only able to operate twice a week (Cariaso, 2024). The article also reports that only 10,770 minibuses are currently in operation nationwide, compared to the figure of nearly 200,000 jeepneys.

In their study of the PUVMP, Sunio et al. (2021) find that political pressure from advocacy coalitions has hindered the transition process. Research done by Andalecio et al. (2020) interviewing jeepney drivers shows that half of them feel that the Philippines is unprepared for jeepney modernization, while the other half believe the program was introduced too late. The state's modernization program has been portrayed as a 'largely top-down system-wide change' (Gatarin, 2023), critics arguing that while the country is prioritizing a transition into cleaner technologies, the proposed implementation of the PUVMP is anti-poor and susceptible to corporate capture.

The shift towards cooperative ownership models raises questions about the financial viability and accessibility of public transportation services. Industry consolidation was proposed as a solution to optimizing route networks, but many individual operators resist joining transport cooperatives, further complicating the transition. Opponents of the transition argue that consolidation would put thousands of drivers and operators out of work if they do not join a

cooperative, and that the PUVMP violates their constitutional freedom to 'opt out' as they are forced to join a group or lose their business entirely (Malasique & Rosete, 2022; Bernal & Koh, 2023). Additionally, the higher starting fare for modern jeepneys and concerns about potential financial losses due to corruption or mismanagement in cooperatives further complicate the transition for small-time operators who feel financially disadvantaged by the policy.

The high investment and operational costs of this project also mean that there are numerous economic factors that impact the adoption of new transportation infrastructure, and the transport groups who protest the phaseout argue that the government's plan lacks adequate funding. This puts the pressure on the drivers instead: the burden of financing is largely shouldered by the jeepney operators who may be forced to take out hefty loans. Sunio and Mendejar (2022) argue that financing arrangements need to be reformed, including the implementation of service contracting, providing partial guarantees, raising equity contributions, and rationalizing franchise routes to improve operators' credit-worthiness for private banks and lenders. In order to gain more support for the adoption of the PUVMP, the government proposed a "5-6-7-8" financial incentive, which includes 5% subsidy for each unit of vehicle, 6% interest rate for purchase loan payable in 7 years, and a maximum PHP 80,000 equity subsidy (Agaton, et al., 2020).

The fact that drivers are expected to carry the costs of new units with only partial support from the government, while most jeepney drivers are from lower-income brackets, operating privately without formal working contracts and benefits, explains why the modernization program is still facing resistance (Tõnisson, et al., 2020). "We really can't afford that... even if we take out a loan, we'd be in debt until we die," jeepney driver Joseph Sabado tells CNN Philippines (Magramo, 2024). Mateo-Babiano et al. (2020) observe that the challenges encountered in implementing the PUVMP mirror those seen in other regions with hybridized transport models, hindering the country's goals to transition to low-carbon options. Economic barriers must be addressed while leveraging public support and policy drivers in order to achieve an improved public transportation infrastructure with significantly reduced carbon emissions (Guno, et al., 2021). Transition issues such as shortcomings in government oversight, risks faced by smaller operators, and the necessity for upskilling are prevalent. Addressing operator concerns and demonstrating how businesses will de-risk under new models is crucial in order to ensure a successful transition.

Private banks may play an important role in providing debt financing to transport cooperatives as they represent a highly promising source of financing for the transition. However, Sunio et al. (2024) highlight that there are challenges in accessing private debt financing for transport cooperatives include the absence of lending programs specifically tailored for cooperatives by private banks, prohibitive terms and conditions set by

those banks that do offer such programs, and difficulties meeting the creditworthiness criteria due to limited financial capacity of cooperative members. The study suggests that service contracting could possibly enhance the creditworthiness of the transit operators, potentially improving their capacity to access debt financing from private banks, but further research is needed to assess its effectiveness. If implemented with care, supportive mechanisms like service contracting would be crucial for providing long-term security for jeepney drivers and operators during the modernization process.

Conclusion

According to Spirin et al. (2016), sustainable transportation systems aim to enhance service quality, minimize pollution, optimize transport networks, improve accessibility, and mitigate conflicts among stakeholders. Addressing issues of affordability and sustainability in a developing country's transportation sector presents complex challenges. While the Philippine government aims to reduce the environmental impact of jeepneys and promote long-term infrastructure, these changes may not be accessible for all and could place many individuals at a financial disadvantage. The jeepney phaseout's goal of modernization aligns with the country's sustainability objectives by targeting emissions reduction and transit efficiency, but its implementation threatens many livelihoods. The shift in Metro Manila's transportation infrastructure requires careful consideration of economic, accessibility, and social factors to ensure that the transition does not disproportionately harm vulnerable populations.

The resistance to the PUVMP highlights the disconnect between policy and practice, showing how top-down policies disproportionately impact marginalized communities already struggling with poverty. The financial strain of the proposed changes, combined with insufficient government support and difficulties with the cooperative model, threatens the livelihoods of jeepney drivers, many of whom are already living on the margins. These issues highlight how policies that overlook the socio-economic context of informal transit systems can exacerbate inequality. Jeepneys play a vital role in Filipino urban mobility, craftsmanship, and art, making them a significant cultural symbol while supporting the livelihoods of millions. The modernization program risks alienating low-income, marginalized communities whose concerns are often ignored in policymaking. Ultimately, the jeepney phaseout underscores the need for a bottom-up approach to IPT reform, prioritizing meaningful consultation with those most affected by these policies. As jeepney operators have limited access to funding for costly new vehicles, policymakers must consider local realities and integrate community input. A bottom-up approach, involving active participation from affected communities, is crucial to developing inclusive solutions that mitigate adverse impacts and promote equitable outcomes in Metro Manila's transportation system.

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Discourse, Commodification, and Suppression: How the City of New York created the "Poster Child of Gentrification"

Jacob Ereshefsky

This paper critically examines New York City's High Line and the surrounding Special West Chelsea District (SWCD) as a case of intentional environmental gentrification, rather than a project with unintended consequences. While journalistic accounts often portray the High Line as a well-meaning project that accidentally gentrified the surrounding community, this analysis reveals how the City of New York employed development discourse to frame Chelsea as an 'in-need' neighborhood, justifying interventions that ultimately served profit-driven interests. Using Arturo Escobar's Encountering Development *(1994) as a theoretical framework, the paper argues that technocratic discourses of housing shortages and open space deficiencies masked the capital-driven motivations behind the High Line's creation. The resulting development catalyzed gentrification and systematically suppressed a grassroots countermovement. This study highlights how top-down urban development projects leverage discursive power to legitimize exclusionary growth and calls for community-led narratives to resist commodification-driven urban transformations.*

New York City's High Line — an abandoned railway converted into an elevated walkway and green space — is a prominent yet widely criticized site of urban planning. Nestled in the heart of west Manhattan's Chelsea neighborhood, the High Line has become a central case example of environmental gentrification, the process by which a neighborhood has an "influx of wealthy residents to historically disenfranchised neighborhoods due to new green spaces" (Rigolon & Németh, 2018, p. 71). From the first-hand experience of local residents priced out of the neighbourhood (Stewart & Green, 2024) to analyses from urban economists and planners (Black & Richards, 2020; Loughran, 2014; Rigolon & Németh, 2018), the High Line is commonly recognized as a gentrifying force in Chelsea since it opened in 2009.

With the popularity of the High Line among buyers and investors in its surrounding Special West Chelsea District (SWCD), home prices increased by 35% between 2009 and 2014, attracting a total of US $2 billion in new construction (Black & Richards, 2020). Upscale investment has continued the absolute and relative exclusion of low-income residents (particularly affecting communities of colour and LGBTQ+ renters), as the area is reshaped by expensive new residential buildings and the offices of major tech firms such as Facebook and Google (Black & Richards, 2020; Loughran, 2014; Rigolon & Németh, 2018).

Much of the journalistic coverage of the area's gentrification has framed the High Line and SWCD as a case example of accidental planning ignorance; it was

simply a well-intentioned greenification project with unintended consequences (Stewart & Green, 2024). However, I argue that the discourse surrounding the project at its conception in the early 2000s demonstrates that this "poster child of gentrification" was never accidental (Stewart & Green, 2024, para. 1), but instead a result of intentional development discourse. Specifically, I contend that the neighborhood of Chelsea was purposefully portrayed as a site of decay and suffering that required intervention, and that this discursive portrayal hid the capital-driven motivations behind the creation of the High Line and the SWCD while also suppressing its emerging social countermovement to preserve an affordable community.

Discourse and Development

Arturo Escobar's (1994) seminal work *Encountering Development* provides a theoretical framework through which the High Line and the SWCD can be analyzed as a development project driven by discourse. In *Encountering Development*'s second chapter, Escobar (1994) argues that a new regime of development emerged in a post-colonial world after the end of the Second World War, predicated on the idea that poverty was a global issue to be solved by benevolent foreign intervention. Crucially, Escobar (1994) contends that the global problematization of poverty was caused by Western development actors who formed a "secular theory of salvation" (p. 30); the wealthy *needed* to save the poor from poverty. This discursively divided countries into 'Worlds,' with the 'Third World' being created in Western development discourse as objects of poverty and suffering that demanded intervention (Escobar, 1994). Escobar (1994) notes that poverty and development solutions were often presented using technical, quantifiable, and universal metrics that omitted key local context. Furthermore, these interventions "allowed [Western] society [...] to create consumers" (Escobar, 1994, p. 23), opening up new global markets for Western capital and knowledge-making. A new industry of Western development professionals was born out of their own discourse that framed Third World countries as in-need, profiting off of their self-claimed position as the experts who can conduct the needed interventions (Escobar, 1994).

New York City's High Line and SWCD was not a product of international development of the Third World. However, Escobar's (1994) work serves as a strong theoretical framework for looking at all scales of top-down development as an industry self-justified by technical discourses of need. The following section will analyze how the City of New York discursively presented Chelsea as an 'in-need' neighbourhood to justify the High Line and SWCD as a necessary intervention, similar to what Escobar (1994) argues is done by Western development actors to the 'Third World.'

The Discursive Creation of an 'In-Need' Chelsea

When the New York City administration proposed re-imagining the High Line as a public walkway, it was bundled into a larger resolution named the Special West Chelsea District (SWCD). The SWCD included the adaptation of the High Line and the rezoning of 13 whole and 2 partial blocks surrounding the elevated former train line. Approved in 2005, the first sentence of the SWCD resolution stated that the planning project was "designed to promote and protect public health, safety, general welfare, and amenity" (City of New York, 2005a, Article 98-00). This raises the question: how did the City come to the conclusion that the neighbourhood of Chelsea was *lacking* in such an overarching way, and that the SWCD was a necessary solution? The answer to this question can be found in the City's Environmental Impact Statement (EIS), which was conducted by the City's Department of City Planning in 2005 to review the anticipated impacts of the proposed SWCD resolution (City of New York, 2005e). Two key areas of need for the neighborhood of Chelsea were identified in this EIS: housing and open space, each discursively presented as in need to create a justification for the SWCD.

Housing is frequently used throughout the City's EIS to support the SWCD. The EIS repeatedly mentioned the "strong demand for housing" in Chelsea that "new residential development on underutilized and vacant land" would help fix (City of New York, 2005b, p. 3). In particular, the EIS argued that "by increasing the supply of housing in the future, the [SWCD would] accommodat[e] demand that would otherwise be focused on [the limited] existing housing" (City of New York, 2005c, p. 29). Furthermore, including a variety of technical socioeconomic studies, the EIS showed that the median household income within the policy area was significantly lower than the New York City average, namely due to a large low-income housing project called the Fulton Houses (City of New York, 2005c). The EIS even used this data to (now, ironically) position the SWCD as anti-gentrification, concluding that "the proposed [SWCD] would not be expected to [cause] different socioeconomic characteristics compared to the [...] existing population" (City of New York, 2005c, p. 29). Put together, the administration used the EIS to discursively present Chelsea as a poor community facing a housing crisis that would be solved by rezoning the land around the High Line to increase housing supply.

Similarly, the City used the EIS to position Chelsea as a community with the "apparent deficiency of open space" (New York, 2005d, p. 10), and presented the High Line conversion as the solution. The ways in which the EIS discussed this need were similarly technical, homogeneous, and quantified. The EIA stated that the City aimed for 2.5 acres of open space (passive and active) per 1000 people citywide, and that Chelsea pre-High Line was "inadequately served" in this regard, having only 0.65 acres of open space per

1,000 people (City of New York, 2005d, p. 10). As the proposed solution, the High Line and a small associated plaza is stated to provide an additional 6.13 acres of publicly accessible open space (City of New York, 2005d).

As Escobar (1994) writes, "development foster[s] a way of conceiving of social life as a technical problem" with a universal "pre-existing model" as the basis of its solutions (p. 52). The discourse used to frame Chelsea's needs — for more housing and open space — was similarly imbued with homogenized technocratic problematization, relying on quantified comparisons to the citywide average to justify their development solution. This is not to suggest that quantitative methods are always inappropriate for the measurement of urban problems (Smith and Defilippis, 1999), or that attempts to reduce citywide inequalities are necessarily bad ways of guiding policy. Yet, as I argue in the following section, the discourse mobilized in this EIA carefully concealed the profit-driven incentives involved in the creation of the SWCD, while suppressing grassroots residents and activists who had legitimate fears that the project would be a powerful force for gentrification, displacement, and exclusion.

Commodification and the Countermovement Suppression

In order to understand the High Line as a profit-driven venture hidden behind the technocratic discursive veil of addressing need, it is important to first critically evaluate its origin story. High Line park was originally conceived by a group called *Friends of the High Line* in 1999, with the intent of saving the abandoned elevated rail line from being torn down (Loughran, 2014). Established by two local residents Josh David and Robert Hammond, *Friends of the High Line* capitalized on connections to developers, investors and members of the newly-elected municipal administration under billionaire mayor Michael Bloomberg (Loughran, 2014). For example, founder Robert Hammond recalled how their team "figured out how to frame the argument [that] parks increase the value of nearby real estate" (David and Hammond, 2011, p. 41, as cited in Loughran, 2014). They presented City administration officials with estimates that the City would see US $262 million in new revenues over the park's first 20 years of opening (Loughran, 2014). As Kevin Loughran (2014) notes, this was the moment the City administration seriously took into consideration High Line park and eventually the SWCD as a whole: the project was to become a fiscally sustainable source of revenue for the City government, while opening new opportunities for the private interests of developers and investors. The needs of existing Chelsea residents or low-and-moderate income New Yorkers were secondary considerations, useful only insofar as their purported needs could be interpreted in such a way as to justify park space as an amenity for luxury development (Stein, 2019, p. 129). In this context, the way City administration presented the SWCD in its EIS as addressing critical needs of the

community appears performative, overshadowing the lucrative market commodity the project was set to become. Much like Escobar (1994) theorized in terms of international development, this project arose out of a profit-driven incentive, but was shrouded by discourses self-justifying the project as a necessary intervention to help a needy community.

Once Chelsea's land was identified as a profitable commodity in the proposed SWCD, a countermovement emerged that fought against losing control of their own community's land to the market. According to local reporting, "throughout the rezoning process, residents requested that the Planning Commission and the Council redraft the rezoning to require 30 percent mandatory and permanent affordable housing in Chelsea," yet this was never included in the final approved plan (Center for New York City and State Law, 2005, para. 5). Furthermore, three local residents who led the Chelsea Preservation & Planning Committee wrote a detailed response to the EIA, arguing that the EIA "neglect[ed] the almost certain pressure toward increased prices for both residential and commercial services" that the proposed SWCD would bring (Compton et al., 2005, p. 25). This response also laid out concerns that the surrounding development would significantly reduce the active open spaces that already existed in Chelsea, negating the positive impact on open space anticipated from the High Line (Compton and Kirkland, 2005, p. 5). Even one of the co-founders of *Friends of the High Line*, Josh David, was "hesitant to back the growth ethos" that emerged from their

proposal (Loughran, 2014), highlighting its clear potential impact on the community.

Yet, under the larger discursive guise of helping the community that actively fought against its creation, the Surface Transportation Board eventually ruled in favour of the High Line redevelopment between April and June 2005, and the SWCD rezoning resolution was approved (Center for New York City and State Law, 2005; Manhattan Community Board 4, n.d.). The EIS was the most important factor in its approval, used by decision makers as an all-encompassing "review and analysis of all [of the project's] impact[s]" (City of New York, p. 23, 2005e). Despite a final push from the local countermovement at a Public Hearing in April 2005, the requested protections against gentrification were not included in the approved resolution and no mandatory affordable housing requirement was set (Black & Richards, 2020; Center for New York City and State Law, 2005; Manhattan Community Board 4, n.d.). Ironically, it was the pro-affordability discourse in the EIS that gave legitimacy to the approval of the SWCD, which itself rendered Chelsea increasingly unaffordable. Development discourse not only hid the profit-driven incentive behind the project, but suppressed the local countermovement that emerged as a reaction to the commodification of their own neighbourhood.

Conclusion

As I have argued, the High Line and the SWCD did not accidentally become the "poster child of gentrification" (Stewart and Green, 2024, para. 1). Instead, the project is a product of specific development discourse that hid both its profit-driven goals and suppressed community opponents.

Furthermore, this examination has shown that fighting existing discourses of development with social countermovements can be ineffective due to the power of those profit-driven discourses to become widely accepted and supported, suppressing any reactive resistance. However, the High Line's origins do show that tangible action can be taken to *prevent* those gentrifying development discourses from ever forming. For local movements wanting to change their community for the better - much like *Friends of the High Line* started as - it is important to work within the community to create their own development narrative, instead of pulling in profit-driven outside actors for their political influence. As Arturo Escobar (1994) wrote, "social reality comes into being" through discourse (p. 39). Local movements must retain their ability to tell - and subsequently shape - their own community's story.

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Blueberry Neoliberalism and BC Agricultural Land Investment
Thomas Kroeker

There is a growing trend in British Columbia's Lower Mainland where farmland is purchased by real estate investors, lavish mansions are built on these lots, and blueberries are grown in copious amounts in order to receive property tax exemptions granted by the province for "agricultural operations". Rather than representing a boost for blueberry farming in BC, this 'trend' plays a central role in the ongoing production of land value accumulation that has defined BC's neoliberal restructuring into a real estate state since the 1980s. The Agricultural Land Reserve (ALR), a provincial land use designation created in 1973 to halt urban sprawl and land speculation at Vancouver's urban fringe, granted these agricultural property tax reductions within a historical context that shaped its abuse by land speculators today. Charting the history of the ALR in combination with an analysis of the blueberry crop reveals the true position that blueberry farming occupies in BC's neoliberal growth machine of housing financialization. As the same conditions of inequality and excess driven by the growth coalition that precipitated the ALR's foundation arise again today, a critical analysis of its role and impact with respect to blueberry farming-based tax evasion practices is important in charting a way forward.

Introduction

By 2020, British Columbia accounted for over 95% of Canada's production of blueberries (BC Blueberry Council, 2023), 99% of which are grown in Richmond and the Fraser Valley (Grow BC, 2014) on the Agricultural Land Reserve (ALR) – valuable farmlands that have been designated by the province to be preserved for agricultural use. At the doorstep of the bursting urban expanses of Greater Vancouver, where the median price of a house is a bloated $1.25 million, seemingly quaint expanses of blueberry fields play a central role in the real estate growth machine, and have been saturated with development capital –– the land on which those fields sit is valued at 230 times more than the average price of other Canadian farmland (Gordon, 2016).

Blueberries are a 'low maintenance' crop with high yield, requiring little refertilization and minimal care in the ideal climates and soil conditions of BC's Lower Mainland. Its associated commodity chain is deeply local, with freshwater from the Fraser River and the Cascade mountain watersheds offering ample and inexpensive irrigation for BC's fruit crops. However, selling blueberries from BC is indeed not 230 times more profitable than harvesting crops elsewhere in Canada. Rather, transnational flows and capital mobility churning behind the scenes of blueberry production herald the ascendancy of neoliberal globalization in British Columbia. BC designates certain lands for agricultural use only, and offers massive property tax breaks for the

socially and environmentally beneficial use of land for agricultural purposes at the urban margin. A policy designed in the late Fordist golden age of the 1970s to direct capital and prevent urban sprawl, today it promises an alluring prospect for the elusive yet powerful spectre of global capital seeking out a taxless "spatial fix" (Harvey, 2007) investment in Vancouver's urban land. As 20,000 square foot megamansions and meager 'u-pick' berry fields expand across prime farmland, this abuse of the ALR now threatens the livelihoods of farmers, as well as communities, striving to make a living in an increasingly precarious, globalized world. In critically contextualizing the commodity chain of Lower Mainland blueberries, the blueberry harvest compellingly embodies the story of modern British Columbia as a province that has transitioned from a Fordist resource economy into a neoliberal jurisdiction of land value accumulation, and unveils the complex political geographies rooted in place that sustain, reinforce, and resist them.

Land as an "Input"

Three core inputs are necessary for the production of blueberries in British Columbia: land, water, and fertilizer. Land becomes suitable for blueberry production when its climate and soil acidity allow for growth. But there is also another condition bearing on the land, as the province has ultimate authority over land use, and must grant permission for agricultural use, that is, appropriate land zoning. The potential for what may take place on the land, shaped by both these natural and legal parameters, in turn determines the speculative value, or price, of the land.

History of the ALR

Urbanizing land use pressures in 1973 paved the way for the creation of the Agricultural Land Reserve through the passage of the Land Commission Act, which was one of many sweeping reforms by BC's newly-minted socialist government led by NDP Premier Dave Barrett. The post-war period in the Vancouver region was characterized by "a desire for unlimited commercial and physical growth and development in the city" (Tennant, 1980, p. 11), boosted by municipal administrations in concert with the provincial government. In Vancouver's suburbs and Fraser Valley satellite cities, growth promotion was focused on industrial sprawl. The Fordist Canadian staples-state mentality of industrial mega-projects for resource exploitation (Barnes & Hutton, 2009, p. 1257) was realised in Greater Vancouver as "grand" land reclamation and extension projects hosting transnational industry. They included the Annacis Island automobile port, False Creek industrial expansion, and the Roberts Bank cargo terminal (Hayes, 2005, p. 160-164). This mentality was particularly aggressive in Richmond, where the reeve envisioned massive 4200 hectare land reclamation projects jutting into the Fraser Delta for light and heavy industrial use (Outside the Box, 2017). The municipal council began condemning dairy farmland on Lulu Island, zoning it instead for industry that started dumping raw pollutants into the Fraser River downstream to the Steveston fishing

waters (Novakowski, 2023, p. 4). There was place neither for citizen participation nor for curbs on business interests in this regime.

Figure 1

ALR-protected land in Greater Vancouver.
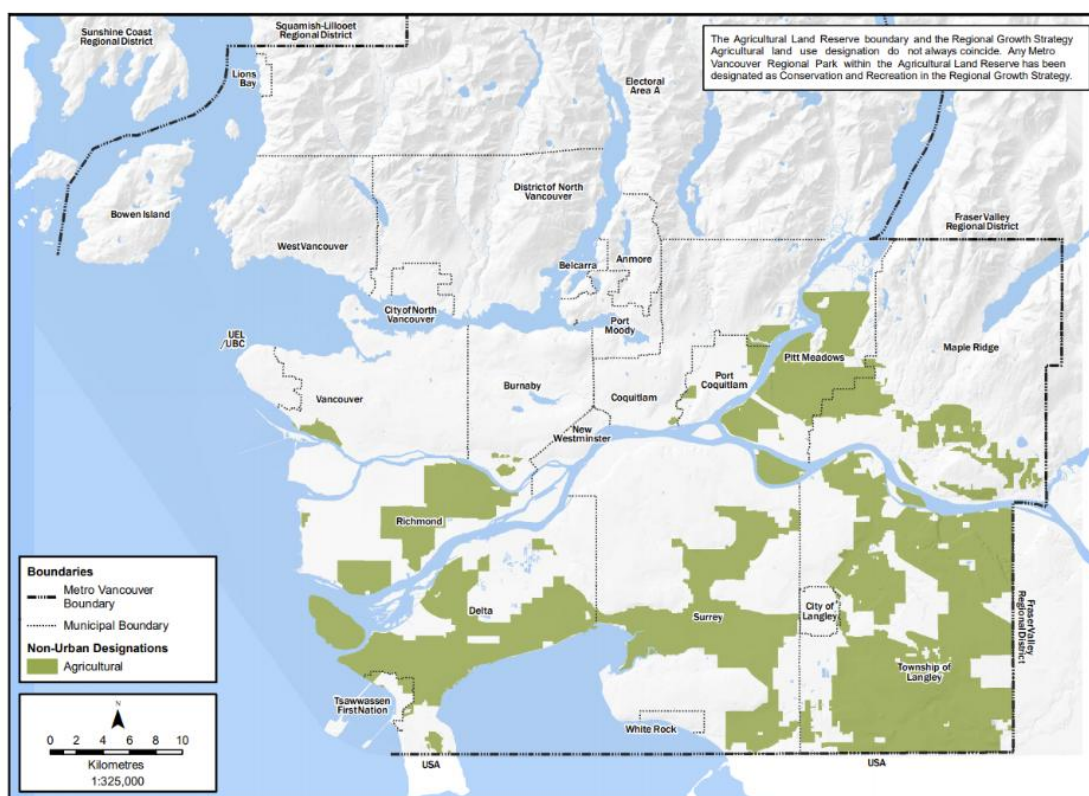
Note. From "Map of the Agricultural Land Reserve in Metro Vancouver" by Pachal, 2018. (https://sfb.nathanpachal.com/2018/08/protecting-agricultural-land-reserve.html).

When Richmond dairy farmer Harold Steves' farm was rezoned for residential use and taxed for its prospective 'highest and best use' value by BC Assessment at an exorbitant rate, he organized with other farmers through the Co-operative Commonwealth Federation (CCF) to create the provincial ALR. With newfound activist sentiment at an all-time high, Steves was elected to the Richmond Municipal Council in 1968 and then to the Legislative Assembly in 1972, where he was able to implement a radical disruption of corporate governance in British Columbia (Novakowski, 2023, p. 5-6) through the passage of the Land Commission Act.

The Land Commission Act of 1973 established major government interventions to regulate the flow of capital into land, preserve farmland and greenspace, and promote sustainable

regional planning. Land was allotted to the ALR in collaboration with local governments based on biophysical characteristics to preserve the highest quality agricultural lands throughout the province (Smith, 2012, p. 2). The NDP government's 1973 Order-in-Council to implement the 'farmland freeze' policy came with the Minister of Agriculture warning:

> "I would not advise anyone to invest in farmland with any intention to develop it for industrial or residential purposes" (Smith, 2012, p. 5).

The Order "prohibited the further subdivision of land taxed as farmland... or land suitable for cultivation of agricultural crops, and non-agricultural development was not permitted on any land of 2 acres or more that was taxed, [zoned, or classified based on soil quality]" (Smith, 2012, p. 5). However, while the 1973 Land Commission Act put an effective halt to the capitalist excess of the urban growth machine at the urban fringe (Molotch, 1976), it suffered from a flawed tax structure that enabled an explosion of land speculation in Greater Vancouver under neoliberal globalization. The Order's property tax exemption that was conditional on 'agricultural use' incentivized ALR land ownership over its farming. That left an estimated 50% of Greater Vancouver's ALR land unutilized for agriculture (Robert et al., 2018, p. 4-5), has inflated the price of land out of all proportion with the costs and revenues of a farming operation (Bunce, 1985), and

has triggered the proliferation of mega-mansion "land improvements" across the city (Eagle et al., 2015, p. 283). It is within this niche ALR loophole that blueberry farms are situated. Understanding the context of the land itself is thus fundamental to a commodity chain analysis of BC blueberry production and consumption.

The Blueberry Crop

In the calculus of maximizing international land speculation profit in the ALR, the selection of blueberries as the 'agricultural use' crop of choice has a costed rationale. The highest-yielding blueberry varieties for food consumption, such as the popular Northblue bush, develop fruit best at 20-26℃, and require acidic soil between a pH of 4.5-5.5 (BC Ministry of Agriculture, 2015). Acidity, which is cultivated by the presence of decaying organic matter in the soil (Arnall, 2024, p. 1), is prevalent in the muck soils of the Fraser Valley due to its mineral-rich alluvial deposition by melting glaciers 11,000 years ago which fostered widespread peat formation (Hebda et al., 2000). This existing soil acidity negates the need for costly elemental sulfur fertilizer and sawdust mulch application to artificially reduce pH, which, combined with its temperate climate, lends the Fraser Valley a highly advantageous geography for blueberry harvesting. Blueberries are further considered a "low maintenance" crop (Gordon, 2016) as they require little to no fertilizer application and are uniquely sensitive berries with respect to excessive nutrients or nitrogen levels in soil (Hanson, 2022, p. 1; BC

Ministry of Agriculture, 2024B). This combination of factors makes blueberry farming the lowest-cost option for setting up a backyard 'agricultural operation' to obtain ALR property tax breaks.

Figure 2

Map of Metro Vancouver watersheds and their water supply networks.
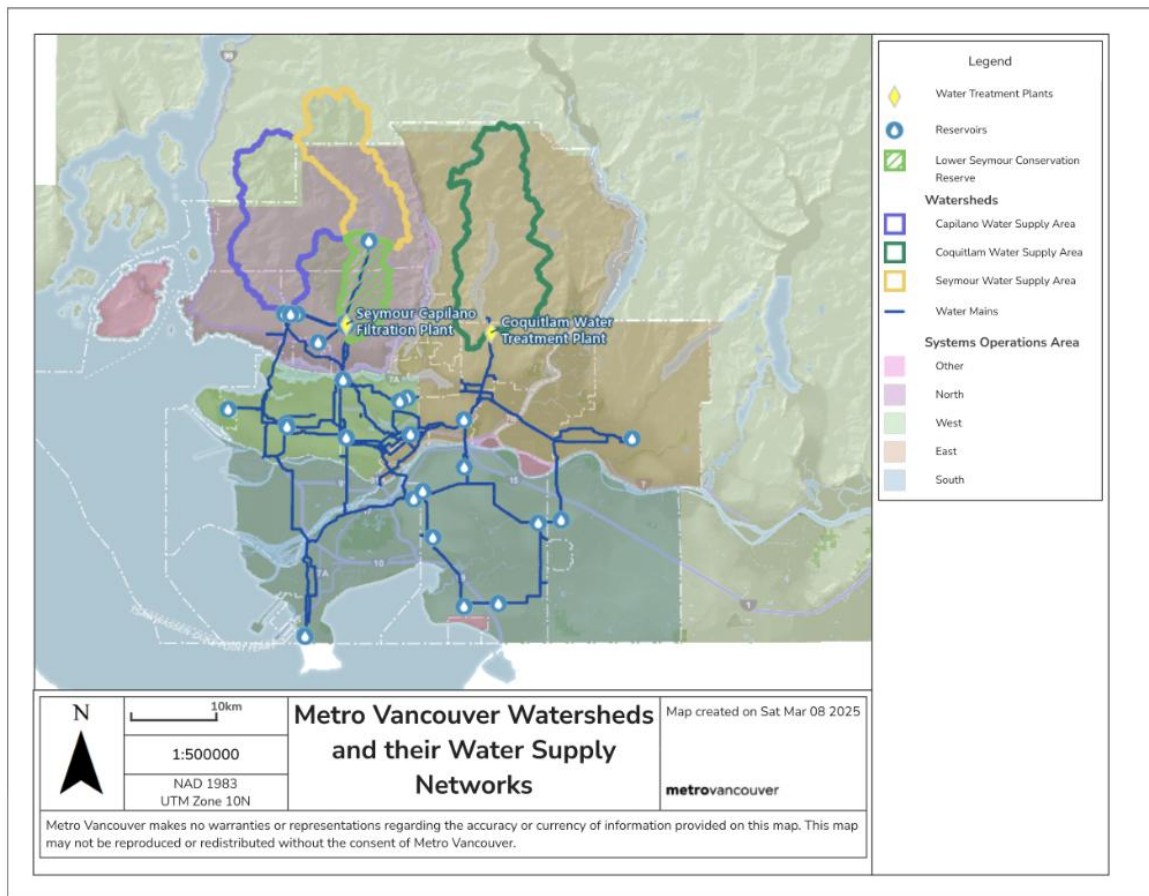
Note. From "GIS Map of the Regional Drinking Water System" [Online Map] by Metro Vancouver, 2023. (https://metrovancouver.org/services/water/gis-map-of-the-regional-drinking-water-system)

In terms of the mechanism of blueberry production, seeds for planting are usually available from farm suppliers within the lower mainland, but are also commonly imported from Minnesota (Wildung et al., 1983, p. 1), or from the Netherlands (Fawcett-Atkinson, 2020). Irrigation for blueberries is typically done with sprinklers or drip mechanisms (BC Ministry of Agriculture, 2024B). In Richmond, water is supplied by the Capilano Reservoir on the North Shore. It is carried via twin tunnels bored through Grouse Mountain to the Capilano Filtration Plant, after which the treated water is transported in pipes under the

Second Narrows bridge and the Oak Street bridge into Richmond (WaterMatters, 2023). Meanwhile, blueberry irrigation in the Fraser Valley is accomplished via a canal system. The Sumas canal, built in 1924 to drain the Sumas Lake and provide for farmland, carries freshwater from the Fraser River through a series of ditches to farms in Chilliwack, Abbotsford, and Kent (Associated Environmental Consultants, 2021, p. 2-3).

Figure 3

Large house on ALR plot in Richmond with a u-pick blueberry field in the back yard.

Note. From "U-Pick Mansion" [Photograph] by Kroeker, 2024.

Harvest time for blueberries comes in July. While historically blueberries have been harvested by hand, modern agricultural operations use mechanical harvesters to shake berries from their bushes en masse (Grow BC, 2014). However, 'u-pick' fields are increasingly common on Greater Vancouver berry farms. A practice born during the Great Depression when crops were selling for less than their harvesting cost (Ernst, 2021, p. 2), u-pick allows customers to pick their own berries and pay for them by weight. The prevalence of such businesses on large ALR plots is notable. Like the Great Depression, it reflects the low economic use value of the berries, in this case relative to the land rents from the ownership of the property. However, it also reflects another facet of neoliberal "flexible accumulation" whereby industrial economies are increasingly servitized (Tickell & Peck, 1992); by that is meant harvesting and picking, once a major source of employment in BC's Fordist fruit crop sectors, has now become absorbed into a service-based activity for urban white collar Vancouver professionals to enjoy on sunny July weekends.

Not all blueberries are u-picked, though. The business of farming and exporting blueberries as the primary source of income for a plot of land still exists in BC. Here the main targeted export market for ALR producers is Mainland China (Gordon, 2016; Tomlinson, 2016). In the summer of 2016, during the peak of foreign investment in Vancouver real estate, the real estate "land rush" in turn triggered massive blueberry overproduction in the Lower Mainland (Gordon, 2016). The agriculture minister at the time refused to recognize the glut in blueberry supply, which, as a perishable

good, crashed blueberry prices and made it impossible for long term, non-investor blueberry farmers to recuperate their harvesting costs (Gordon, 2016; Grow BC, 2014, p. 83). The decimation of blueberry use value for their exchange value (Christophers, 2018, p. 188) in the form of urban land speculation tax breaks ironically epitomizes the crisis that the Land Commission Act of 1973 sought to remedy some 50 years ago.

The Vancouver Housing Market

Commodity chain analyses are "radical" and "up-front" in nature, but they also demand bringing the "near and far… more closely into [our] own" (Cook et al., 2007, p. 1113, 1118). It is therefore essential, in order to defetishize BC blueberries, to analyze the flow of capital itself into land in particular, which undergirds the productive and consumptive relationships of blueberry farming in BC. In Vancouver, the rise of neoliberalism in the 1980s has manifested in a state-led transition from a forestry-based resource economy towards an economy dependent on real estate and land speculation. The sale of the False Creek Lands after Expo 86 to Hong Kong developer Li Ka-Shing established Vancouver real estate as a 'safe haven' for investment capital fleeing Hong Kong before the handover to China (Ley, 2020, p. 300). Since then, hundreds of billions of dollars from Mainland China have flowed into the Vancouver housing market, often as a means of money laundering (Ley, 2017, p. 21), which the city bolsters as a safe investment by refusing to intervene, instead deregulating and encouraging the flow of international capital (Ley, 2017, p. 19), as well as deregulating zoning and land use (Condon, 2021; Schragger, 2021). As a result, Vancouver housing prices are 14 times higher than local incomes, its exchange value completely detached from a house's use value by the local workforce.

Figure 4

22,300 sqft 'farmhouse' at 9431 No. 6 Road, Richmond BC.

Note. From "Farmhouse" [Photograph] by Kroeker, 2024.

Megamansion 'Farmhouses'

It is within this neoliberal context that the investment capital behind ALR blueberry farms exists. In Richmond, the proliferation of gargantuan mansions on farmland, appraised by BC Assessment far below their selling prices due to their 'agricultural use' as blueberry farms, has stoked pushback in the community. On No. 5 and No. 6 road, massive properties on the ALR have been built in the last few years. One pictured below is 22,300 square feet, listed for $21.9 million on the market, but assessed at a mere $6.02 million, with the land taxed as if it were worth $44,000 (BC Assessment, 2023).

A different house on No. 5 road in the ALR is advertised as the "Beijing Mansion" online, offering services as a luxury club serving plates for $2,800 (McArthur & McSheffrey, 2024). Residents in Richmond have started campaigning at the municipal level to ban this scale of development on the ALR, since it is being exploited by real estate speculators for its property tax exemptions. While these groups have achieved some success at a policy level (Zussman, 2018), with the provincial government restricting the size of houses on the ALR, the fundamental structure of land use remains unchanged, with the present BC NDP government instead focused on using provincial powers to further deregulate land use to the private sector (Bill 44, 2023). This marks a significant turn away from the well-meaning but incomplete effort in 1973 by the NDP to stamp out excessive land speculation, and a shift into the conservative logic of rezoning privatisation (Murray & Gordon, 2023) and the politics of BC's business establishment.

Conclusion

Overall, the blueberry harvest in British Columbia represents a commodity chain seeped in a globalized network of mobile, unregulated investment capital. Investment capital from abroad flows into the Greater Vancouver housing market, and finds a 'safe' home in tax-exempt ALR land. Blueberry production is a byproduct which must be generated to obtain the full exchange value of Vancouver real estate. It is a lamentable representation of how BC's economy of production has been dissolved by its neoliberal restructuring into a real estate state. Exploring the commodity chain of BC blueberries also provides more niche insights into the decline of Fordism in the province; the rise of the service economy u-pick fields, and the crowding out of local farm operations due to speculation-inspired blueberry gluts. But the in tandem rise of the BC blueberry with BC real estate has equally generated reaction and resistance. The conditions that gave rise to the beginnings of the ALR back in 1973 are back with renewed vigour. Could history soon repeat itself, as the contradictions of BC's regime of neoliberal land value accumulation begin to unravel?

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Gender(ed) Imaginations, Hegemony, and Counter-hegemony in Guatemala

Aidan Huang

Guatemala's socio-political landscape is well known as one marked by enduring conflict and state repression, often traced to settler colonialism and US imperialism. Compared to the attention on overt, physical violence, however, the role of ideological and cultural strategies in enabling this violence is less extensively discussed. In this paper, I draw upon Gramsci's theory of hegemony to analyse how colonial-capitalist relationships of power in Guatemala operate not only through physical and political force, but are also underpinned by ideological and cultural domination. I argue that the cultural hegemony of Spanish colonisers and the settler colonial state have been and are reinforced by certain patriarchal ideas of gender, which are used to establish control over people in Guatemala, especially Indigenous Mayans. To illustrate this, I use examples from both colonial and post-independence periods, as well as my own experiences during a university study program. However, cultural hegemony in Guatemala remains incomplete, as counter-hegemonic imaginations and expressions of gender—rooted in Mayan cultures and resistance—challenge dominant gender roles and notions of identity, illustrating the ongoing contestation of power.

Introduction

It's Monday evening. Two classmates and I, in Guatemala for a university study program, sit in the kitchen of our homestay in the country's second largest city Xela, waiting to have dinner. We hear the clanging of pots and pans as our host prepares our food. She's rarely outside the kitchen—if she isn't standing over the stove cooking one of our meals, she's at the table helping her daughter with homework. The only other person around is her husband, who shows up only to open the door when we return from a day out. As a Human Geography student exposed to a variety of (mostly Western) feminist ideas, my gut reaction is to read these gendered household roles as patriarchal: the woman "serves" us and performs care work, while the man has the authority to let people into the house.

The radio is on, playing "bad guy" by Billie Eilish. An American pop song by a Gen Z artist feels odd in a place where few people speak English. However, remembering the Mickey Mouse blankets in my room, the daughter's English workbook, and the McDonald's, Wendy's, and Little Caesar's all within five minutes of the house, it makes sense. This imposition of US norms and culture onto peripheral countries like Guatemala is a part of the US global hegemony described by Immanuel Wallerstein (1983). His ideas are adapted from those of Antonio Gramsci (1929-36/2003), who theorised hegemony as one of the means by which a

group maintains dominance over others. In contrast to "direct domination" through legal systems and coercive force, hegemony involves the acceptance and absorption of cultural ideas that legitimise relationships of a softer form of dominance upheld not by violence but by what Gramsci (1929-36/2003) calls "spontaneous consent" (p. 190) to powerful institutions.

In this paper, I draw on Gramsci's (1929-36/2003) theory of hegemony to explore the gendered dimensions of power and domination in Guatemala, exploring how the cultural hegemony of the colonial-capitalist state is reinforced by and reinforces certain ideas of gender. Since the Spanish invasion to the present, dominant ideas of gender have been used by the state and its counterparts to establish control over people in Guatemala, especially Indigenous Mayans. To illustrate this, I discuss how colonial and patriarchal gender structures were used to justify violence along constructed racial and gendered lines during the initial Spanish occupation in the 16th century. I then examine the use of gendered narratives, feminisation, and masculinisation towards similar patterns of settler colonial violence tied to neocolonialism and neoliberalism in the last two centuries. Lastly, I explore how counter-hegemonic imaginations and expressions of gender–rooted in Mayan cultures and resistance–challenge dominant gender roles and notions of identity, illustrating the ongoing contestation of power as hegemony remains incomplete. Before this, however, the following section examines how this analysis may be troubled by the limitations of Gramsci's theory as well as my own participation in hegemonic structures.

Challenges and Considerations of Hegemony

In Gramsci's analysis, class rule within a state is central–the ruling class refers to the state and the capitalist class it serves. However, the relationships of domination I draw upon here are less clear–multiple regime changes, intra-state divisions, and complex colonial histories complicate this notion of the state as a coherent political entity existing to serve local capital elites. Wallerstein's (1983) analysis expands on this by addressing certain forms of imperialist and transnational hegemony within the world economy, although this too obscures the historical role of culture and European colonialism. This paper attempts to go beyond these limitations and use the concept of hegemony in an analysis that centers settler colonialism. Throughout this paper, I use the term "colonial-capitalist state" to signify how colonialism, settler colonialism, and capitalism shape the workings of Guatemala's state in intersecting (and sometimes disparate) ways. I use it loosely, acknowledging that the complex networks making up structures of power cannot be condensed into a singular actor. Rather than trace these networks specifically, however, my aim is to make visible the less obvious role of gender in hegemonic power, as well as its connections to colonial and capitalist structures.

This argument is informed by my political views towards anti-colonial, anti-capitalist justice, and post-structural feminism. Besides considering whether the application of Western theory to Indigenous and Global South contexts plays into Western hegemony (Quijano, 2000), I draw on my personal experience in a university study program in Guatemala–one shaped by the instruction of two white professors, a racially diverse class of fellow students, and my own perspective as a queer transmasculine settler in Canada visiting Indigenous and *ladino* (mixed, non-Indigenous) communities in the Global South. Consequently, not only might these interactions reproduce imperialist paradigms such as the extraction of knowledge (Nolin & Russell, 2021) and voluntourism (Vrasti, 2012); I also risk imposing my own understandings of gender and culture onto people whose gendered oppression I am already–by way of global capitalism–implicated in. I approach my analysis with this in mind and want to emphasise its partiality–borrowing the words of Diane Nelson (1999)–in being both very incomplete and biased in ways I may not be aware of. Given these limitations, I hope this paper can highlight how cultural hegemony and ideological domination work alongside the overt violence so often faced by communities in Guatemala.

Settler Colonial Hegemony and Ideas of Gender

In Guatemala, the hegemony of the ruling classes is formed in part through ideas and ideologies of gender that perpetuate–and are perpetuated by–systems of power and oppression. Gramsci (1929–36/2003) makes a distinction between "direct domination" and "hegemony," corresponding to political and civil society respectively (p. 210). Direct domination refers to the legal enforcement of discipline through the exercise or threat of force, which in Guatemala's case includes everything from top-down development policy to military rule and genocide. This coercive power works hand in hand with hegemony, the "spontaneous consent [of] the masses" (Gramsci, 1929–36/2003, p. 190) to the imposed order of the ruling classes, through cultural, intellectual, and moral ideas that legitimise and naturalise power. In short, the domination of Guatemala's elites relies on both political domination and cultural hegemony, which in turn rest on the production and reproduction of gendered norms and ideologies that mask and normalise violence.

The history of gender norms perpetuating domination in Guatemala dates back to the 16th century Spanish conquest, when Spanish conquistadores massacred and displaced Indigenous Mayans. As we learnt in a lecture by a local anthropologist, Roney Alvarado, the occupation of Indigenous Mayan women's bodies through rape was a widespread form of violence that rested on and reinforced a deeply patriarchal view of women, setting the stage for colonial cultural hegemony. Within the colonists' view of gender, Mayan women were seen as property as well as cultural and biological reproducers of Mayan-ness, justifying their subjugation and the

control over their sexuality (Smith, 1995). The occupation of a Mayan woman's body entailed a symbolic and literal occupation of the land. Combined with colonial narratives of Indigenous inferiority, women became a medium by which colonial-racial politics differentiated between bodies deserving and undeserving of protection against rape (Few, 1997). As Lugones (2010) argues, colonisers were marked by gender as a defining feature of their "civilisation" and humanity, while the colonised were marked by sex in ways that emphasised their supposed hypersexualisation and bestialisation. Rape therefore became a way in which patriarchal and colonial dominance were established and maintained, not only through physical violence, but also the imposition and reinforcement of patriarchal ideas and norms that legitimised the actions of colonists (Few, 1997).

This pattern, where Spanish women were to be kept "sacred" while Mayan women were freely used by men (Smith, 1995), is connected to the colonial construction of norms surrounding marriage, family, female sexuality and behaviour among Guatemala's Mayan and *ladino* population. The "sexual purity, passivity, and [home-boundness]" of the European woman–existing for the European man–starkly contrasted the "promiscuous", "sinful", and "grotesque" sexuality of the colonised woman (Lugones, 2010, p. 743). The "civilising

mission", which involved "turning the colonised against themselves" (p. 745) through Christian conversion and confession, led to an internalisation of modern European conceptions of gender and their inherently Christian values. In Guatemala, expectations of chastity and shame around sex were created this way, as sex–seen as sacred reproduction and pleasure during the pre-colonial period–became synonymous with reproduction and sin[1]. The feminine ideal of *marianismo* based on the Virgin Mary–an image of women as submissive, chaste, family-oriented, spiritual pillars (Nuñez et al., 2016)–was integral to the "civilising mission" of the Catholic church (Luna-Sánchez et al., 2022) and colonial ideas about "purity of bloodline" (Smith, 1995, p. 732).

This is one of the many ways in which colonial narratives and patriarchal gender structures build on each other to construct settler-colonial hegemony. Gender norms and social structures have continued to be reproduced and used against Indigenous populations–rather than an event that ended after Guatemala's independence from the Spanish in 1821, settler colonialism is an ongoing structure, continually reinforced through coercion and embedded in cultural, social, economic, and political institutions, shaping power relations up to the present (Wolfe, 2006).

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[1] Roney Alvarado's lectures

Gender, Neocolonialism, and Capitalism in the Settler Colonial State

Spanish colonisation sparked the formation of hegemonic gender norms and the use of these norms to uphold the hegemony of the colonists. Relationships of power related to the "post-independence" state and transnational capital cannot be divorced from these methods of domination inherent in settler colonialism. One example was during the US-backed civil war and genocide that followed a CIA-orchestrated coup in 1954, which ousted democratically elected former president Jacobo Arbenz and replaced him with military dictator Carlos Castillo Armas (Immerman, 1982). The regimes of Castillo Armas and his successors went on to commit brutal acts of military violence, disproportionately targeting Mayan communities, in the name of anti-communism and counter-insurgency (Way, 2012).

Ideas of gender continued to play a significant role during this time, reinforcing the hegemony of the new US-supported regimes by legitimising and masking their violence towards colonial-capitalist ends. According to Gramsci, hegemony is "educated" by the state through "political and syndical associations" (p. 196). An example of this "educative" aspect of hegemony is Way's (2012) "State-as-Mother" aesthetic (p. 70) after the coup, where the Guatemalan state continued to use the imagery of femininity and family to further its cultural and political agenda. First Ladies were framed as "National Mother" to create the myth of

a benevolent state, while US propaganda used the "emasculation" of Jacobo Arbenz to delegitimise his regime (Way, 2012, p. 76-78). This neocolonial intervention–one of the main purposes of which was to enable the US multinational United Fruit Company to exploit more Guatemalan land and labour (Immerman, 1982)–demonstrates the involvement of foreign capital and the interconnectedness between US economic hegemony (Wallerstein, 1983) and state hegemony (Gramsci, 1929-36/2003).

Another strategy employed by the Guatemalan state during this period was the militarisation of society and the manipulation of intertwining ideas of gender and race towards furthering the settler colonial project, through the deterritorialisation and assimilation of Mayan communities into the Guatemalan nation. As Nelson (1999) observes, underlying the overt violence of forced military conscription of Mayan men were more subtle cultural and ideological tactics of control, which not only turned Mayan men against their own communities, but drew on and reinforced existing discourses of race, class, and gender. According to Nelson, Mayan men were feminised in dominant discourse, due to their position of relative powerlessness against *ladinos* and their connection to "tradition". The military training they were subjected to took advantage of internalised racism and sexism by promising them masculinity and proximity to the strong, "modern", bourgeois *ladino* man (Nelson, 1999). Through these strategies, the state shaped the beliefs and behaviour of Mayan men–their diet, dress, "hair, gait, posture,

hygiene, and sexual practices" (p. 91)–, producing and entrenching the masculine ideal of *machismo*. The gendered cultural hegemony of the state, under neocolonial and capitalist influence, is thus deeply connected to both the physical violence and assimilationism of settler colonialism.

Imaginations of *machismo* have also been central to masking the state's role in perpetuating and creating the conditions for everyday violence in the following decades. In contrast to *marianismo*, *machismo* is the dominant gender role for men, entailing "bravery, honor, dominance, aggression, sexism, sexual prowess, reserved emotions," and hypermasculinity (Nuñez et al., 2016, p. 3). To absolve the state and imposed patriarchal ideals of responsibility for everyday violence, the state and mass media use negative imaginations of *machismo* and male sexuality to shift blame onto gangs and individual men–a process called "downward moral displacement" (Way, 2012, p. 93-96). This reproduces other patriarchal gender norms, as the sympathy accorded to female victims of sexual violence depends on how much their behaviour conformed to gendered expectations (England, 2018). The role of the state in upholding *machismo* is therefore obscured, along with its own use of femicide and gendered violence against Mayan communities (Hanlon & Shankar, 2010). Even when Rigoberta Menchú–a prominent Mayan human rights activist–won a Nobel prize for her resistance work, gendered expectations of female submissiveness and family were weaponized to dismiss her on account of her "masculinity" and childlessness at the time (Metz & Webb, 2014; Nelson, 1999). All these gendered narratives depoliticise everyday violence, hide the enduring role of systemic state violence, and delegitimise resistance, playing a part in manufacturing consent towards colonial-capitalist hegemony.

Finally, these patterns are still evident today. As mentioned above, sexual violence was a key strategy of both Spanish colonisers and the US-backed Guatemalan state to control the bodies and land of Indigenous Mayans. In the present age of neoliberalism, more complex networks of actors are involved in systemic gendered violence. Granovsky-Larsen (2023) describes how rape has been employed with impunity as a corporate counter-insurgency tactic against Mayan resistance to Canadian mining. Notably, the growing mineral extractivism on Mayan lands in service of Canadian and other internationally-owned development projects have been referred to as the "fourth conquest" (Nolin & Russell, 2021, p. 27). As recently as 2007, gang rape was used as a method of suppression, terror, and psychological control during land evictions, in a coordinated effort made known to various Guatemalan and transnational state, corporate, and consultancy actors at every step of the operation (Granovsky-Larsen, 2023). This case demonstrates the growing complexity and scale of the hegemony which enables the same gendered settler colonial practices to persist for centuries.

Counter-hegemony: Mayan Cultural Resistance

When we stepped into the Spanish Language School in Xela, the first thing K, my Spanish teacher, did was to point at my earrings and exclaim, "¡Que bonito!" ("how nice!"). It took me a moment to realise that a masculine-presenting person in earrings may not have been a common sight for her. This launched us into a conversation about gender roles, dress codes, her emo tomboy daughter, controlling boyfriends, and men with painted nails. As the week progressed, we delved into topics like the stigma surrounding teenage parenthood, and I witnessed her joking with another teacher about not wanting a husband or boyfriend. This painted an unexpected picture of gendered Guatemalan society, giving me a glimpse into ideas of gender outside of hegemonic ones. Although Gramsci (1929-36/2017) presents hegemony as a powerful instrument of control, he also argues that the hegemonic project is never complete, due to the critical consciousness of the masses and infighting within the ruling class. In this section, I explore counter-hegemony in the form of Mayan conceptions of gender, which act as alternatives to colonial-capitalist logics and gender discourses. Though Mayan gender complementarity may still uphold patriarchal structures, this can be resisted through crossings of racial and gender boundaries.

Contemporary Mayan communities deviate from dominant gender structures in that their worldview emphasises gender complementarity–the idea that men and women have separate but interrelated and asymmetrical roles (Luna-Sánchez et al., 2022). Although still enforcing a sexual division of labour expecting women to do reproductive work, this contrasts with hegemonic views that normalise the domination of men over women. Notably, the Popul Wuj (Mayan creation text) emphasises gender equality, where "unlike the Christian Bible, men and women are formed at the same time from the same material" (Nelson, 1999, p. 164). Women are vital to the Mayan cosmovision, where women, pregnancy, and femininity are of great spiritual importance–related to the moon, land, and cycle of corn[2]. The fact that women bear the markers of Mayan culture–language and dress–is considered a point of pride and empowerment, rather than a symbol of marginality (Nelson, 1999; Smith, 1995). Traditionally, Mayan women have a higher level of social and economic autonomy than *ladino* women, as they have their own land, income, and community protection (Carey, 2008; Smith, 1995). Additionally, unlike colonial ideologies which privilege reason and rationality, Mayan cosmovision focuses on emotion and connection as well, reducing the pressure on men to emulate machismo[3]. *Caballerismo*, an alternative masculinity focusing on emotional connectedness, protecting and providing for family, could then be attributed to

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[2] Roney Alvarado's lectures

[3] Roney Alvarado lectures

Mayan men (Luna-Sánchez et al., 2022). All this serves the counter-hegemonic function of maintaining alternatives to dominant gender ideals established by settler colonialism, as well as challenging the individualism that underpins so much of colonial-capitalist ideology.

Despite this, Mayan communities are still generally considered patriarchal, as Mayan women have little freedom in terms of mobility, sexual freedom, and they carry much of the burden of cultural continuity. This reflects how "subaltern groups are always subject to the activity of ruling groups" (Gramsci, 1929-36/2003, p. 192). Many Mayan ideas of gender have been substantially altered by cultural hegemony through conquest, evangelisation, and *ladinoisation*, leading to the adoption of patriarchal elements such as purity culture and strict divisions of labour (Carey, 2008; Smith, 1995). Additionally, Nelson (1999) discusses the tension between the Mayan cultural movement and women's autonomy—Mayan women face a "double bind" (p. 163) between their rights as women and as Mayans, while Mayan ethnic identity relies on the stable image of the *mujer maya*. Nelson analyses how *mujer maya* places pressure on Mayan women to act as enduring links to land, "tradition", and history, which naturalises their home-boundness and restricts their ability to transgress boundaries as Mayan men do. This image risks perpetuating hegemonic structures and is often co-opted by the state towards colonial-capitalist nation-building (Nelson, 1999). Of course, this can be overcome—the work of an increasing number of Mayan women activists demonstrate resistance to patriarchy and the *mujer maya* as they cross boundaries of gender and race. Notably, by being a well-spoken, international figure clad in *traje* (Mayan traditional dress), Rigoberta Menchú challenges the solidity of the essentialised gender and race categories Guatemala has been built upon, representing a radical challenge to hegemony and presenting a possibility for a reconfiguration of the nation-state (Nelson, 1999). Along with the increasing acceptance of gender nonconformity that K and I discussed, it is clear that hegemonic power in Guatemala does not at all go uncontested. Resistance against colonial-capitalist patriarchy has always existed and will always exist.

Concluding Thoughts

My experiences in Guatemala were revealing in the intersections between settler colonialism, gender and capitalism—encountering hegemonic gender norms that have reinforced political power and social relations through their creation and reproduction. Gramsci's (1929-36/2003) theory of hegemony sheds light on the importance of ideas, culture, and civil society that reinforces the dominance of ruling groups. Yet, Mayan resistance and conceptions of gender offer compelling alternative narratives of counter-hegemony that continue to resist these norms. In this paper, I have emphasised not only the importance of ideological rule in the consolidation and justification of power and violence, but the construction and imposition of categories such as race and gender. Gendered roles and ideas are

highly influenced by colonial and capitalist relationships of power, and are deeply entangled with race, ethnicity, and nationality. To deconstruct and challenge these relations of power, we must pay more attention to how gendered roles and ideas enable and justify systemic domination.

Finally, although this paper focuses exclusively on the role of ideas and culture, I do not wish to minimise the role of material violence or imply that cultural manifestations of power are more important than economic relationships, legal structures, or physical force. On the contrary, these aspects of power are interconnected and cannot be meaningfully separated. Likewise, resistance to hegemony in Guatemala is much more than what is presented here–other crucial expressions of Mayan survivance, resilience, and agency include demonstrations, armed resistance, networks of support, and social sharing. Importantly, the perspectives of these communities are missing in this paper, even as I discuss the violence against them–especially the voices of rural Mayan women at the intersection of race, class, and gender. Ultimately, by trying to represent and "translate" Guatemalan experiences through my own standpoint and that of Western theorists, this paper can only offer a partial analysis of these contexts. We must move forward by finding and practicing solidarity in other tangible, committed ways that are cognizant of one's own role and position in colonial-capitalism systems.

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The Neoliberal Production of Urban Space and Urban Subjects in India and Bolivia

Joshua Bransford

This paper explores the nuances of processes of neoliberalization in two empirical contexts in the present-day urban Global South: an international initiative to reterritorialize the urban periphery of Bangalore into an environment suitable for foreign investment, and the spatial economy of an informal market in Cochabamba, Bolivia. Through an analysis that ranges from the material-structural to the discursive, the paper critically interrogates the assumed universal applicability of 'neoliberalism' as an analytic to describe and explain contemporary urbanization processes beyond the paradigmatic Euro-American post-industrial city. The two cases analyzed here demonstrate the necessity for a conceptualization of neoliberalism cognizant of the local contingencies of its imposition and reproduction, as well as its subjective dimensions. Neoliberal subjects play complex yet meaningful roles in instantiating the dynamic, multidimensional processes of social, spatial, and economic transformation involved in producing neoliberal space.

Introduction

Global capitalism, specifically its neoliberal variety, appears inseparable from the contemporary urban. Everything from the physical built environment of the city, to the socio-spatial relations that occur within and are produced by that environment, to the generation of urban spatial forms via development and construction are implicated—in one way or another—in the material and ideological apparatuses of global neoliberal capitalism (Soja & Kanai, 2014). Realizing a holistic understanding of neoliberal globalization *vis-à-vis* the urban, however, is hindered by an epistemic overemphasis on cities of the Global North as sites of theory production, which largely stems from the monopoly the Global North still maintains over

knowledge production in the post-colonial age. This produces a problematic wherein theories that originate within and describe northern urbanization processes (Brenner & Schmid, 2014; Castells, 1996; Harvey, 1985, 1989, 1996; Lefebvre, 1970/2003; Scott & Storper, 2015) are intended to be applicable universally. Through its empirical basis in the purportedly-paradigmatic trajectory of northern urbanizations, such northern theory ontologically defines itself against a represented southern 'non-universal.' That is, in contrast to the northern 'global city,' cities in the Global South are reduced to located case studies—'megacities,' rendered deviant (Sassen, 1994) and even apocalyptic (Davis, 2005). Scholars within the 'southern critique' (cf. Lawhon & Truelove, 2020; Robinson, 2002, 2006; Roy, 2014; Vegliò, 2021) problematize this imagined (neo)colonial dichotomy of urban

geographies by deparochializing and *dis-locating* southern urbanizations, arguing for the productive generation of what Roy (2009) calls "new geographies of urban theory" (p. 821) through mapping networks across and beyond the south. To understand the production of urban spatial forms under what is a genuinely hegemonic neoliberal capitalism may then be to conceive of "processes of neoliberalization" as "inescapably embedded and context-contingent phenomena" (Peck et al., 2009, p. 52). In this paper, I am interested in exploring the subjective emergence of those 'embedded' neoliberalizations across simultaneously located and multidimensionally globalized geographical contexts. I examine two empirical cases that I argue demonstrate how global neoliberalism interacts with, produces, and is (re)produced by urban space and urban subjects at local scales. I argue that these examples fortify an analytic of neoliberalism; revealing how neoliberalism, as a hegemonic, multiscalar, and highly mutable paradigm of global governance, intersects with local realities and subjectivities to reproduce itself globally as a guiding organizational framework for contemporary urban spatial production.

I begin by showing how the neoliberal 'global city' paradigm, with its constituent discourses of normative, teleological 'modernity' and 'development' (Escobar, 1995; Goldman, 2011, 2014; Robinson, 2006) together with David Harvey's (1982, 1985) theory

of "spatial fix," respectively provide comprehensive discursive and material explanations of market-oriented reterritorialization and urban transformation in the urban peripheries of Bangalore. Through an exploration of Louis Althusser's (1971) concepts of "Ideological State Apparatus" (ISA) and "interpellation," I argue that the 'global city' paradigm interpellates Indian citizens as subjects via internalization (also see Robbins & Sharp, 2006). Following this, I turn to La Cancha market in Cochabamba, Bolivia to historicize the expansion of the spatial economy of informality through examining the political economy of neoliberalization in Latin America. At the same time as this neoliberalism from outside/above effects localized spatialities and social formations, I interrogate how "neoliberalism from below" (Gago, 2017, p. 1) manifests in La Cancha via normative ideals of entrepreneurship, property, and security. With this example, I show how spaces like La Cancha—whose nonpropertied existence seems to contest neoliberalism—are themselves enmeshed in the mutative dynamism of neoliberalism's subjective production.

Global-city subjects and spatial fix in Bangalore

Bangalore has been undergoing a program of massive spatial redevelopment in pursuit of reaching 'global city' status. A paradigm shift in popular conceptions and discursive framings of Bangalore's social purpose is accompanying and motivating this reterritorialization. This paradigm shift is top-down, promoted from the outside by international financial institutions (IFIs)

like the International Monetary Fund (Goretti et al., 2019) and imbued with a highly neoliberal/pro-market ideology that advocates for "ditching the slowchurning and much-maligned Indian state bureaucracy" in order to "[blend] efficiency with good governance" (Deb et al., 2020; Goldman, 2011, p. 562). The 'global city' discourse that underlies it is, according to Jennifer Robinson (2006) and Arturo Escobar (1995), part of a wider neoliberal, neo-colonial paradigm whereby the West/Global North wields its colonially-granted epistemological power to universalize itself. Western civilization is thus portrayed as the 'standard' for civilizations, the final inevitable stage of development that every society must attempt to reach. However, across India—and in Bangalore specifically—the call for a global city has been taken up by large sections of Indian society itself (Bangalore Development Authority, 2019). This paraphrased speech from a Jaipur city official exemplifies this favourable attitude towards the 'global city':

> When I look out from Jaipur's main railway station, I can see makeshift huts with women cleaning dishes and children playing and grazing their animals, the dhobis washing clothing, the small food carts setting up for the day, people meeting the call of nature. I have always seen this as a typical city scene in India, the way it has been and will always be. But why couldn't we build right along the station a line of nice hotels, corporate centers and shopping malls? Now I can imagine that Jaipur too can become a world city that can generate jobs and money and bring in tourists and make the city and its people much more productive. From this view, our cities are full of untapped value

and potential, making them a very exciting place to be. (Goldman, 2011, pp. 559-60)

Here it becomes apparent that the global city paradigm has interpellated individuals within the sectors of society that support it—namely urban business elites, figures within the software industry, Indians living abroad, and employees of IFIs and aid agencies—as its subjects. The collection of institutions implicated in Bangalore's global-city making constitute what Althusser (1971) calls an ISA: a regime that "function[s] massively and predominantly by ideology" (p. 145). In the context of Bangalore, such institutions include IFIs, NGOs, aid agencies, and the non-state or parastatal organizations to which democracy is outsourced for the sake of 'efficiency'. The ideology it embodies and operationalizes is that of the global city, espousing the totalizing virtuousness of 'modernity' and 'development'. Those subscribed to the global city paradigm "work all right 'all by themselves', i.e. by ideology (whose concrete forms are realized in the Ideological State Apparatuses), and are thus inserted into practices governed by the rituals of the ISAs" (Althusser, 1971, p. 181). This externally-imposed, yet internally-adopted normative ideal of Indian society as 'modern' and 'developed' has facilitated Bangalore's developmentalist reterritorialization and, as I will show, served to justify the violent dispossession inherent to it.

In order to produce 'global city' space in the urban environment of Bangalore and its periphery, certain 'global' infrastructures must be constructed. This necessitates the dispossession of farmers already living

there. To meaningfully respond to this pragmatic concern, 'global city' discourses veer from depoliticized, normative understandings of 'modernity' and take on a darker, decidedly settler-colonial tone. International real estate developers seeking to engage in speculative investment in Bangalore portray land on the city's outskirts under the stewardship of farmers as 'below its full potential' (Raman & Denis, 2025). Developers assert, to the government and the public, that granting them the power of management over the land would enable it to be used to its 'maximum efficiency' (Goldman, 2011). Peasants, like the land, are also viewed as not having reached their 'fullest potential,' something which the 'global city' initiative would solve by "nurtur[ing] freedom of investment and the entrepreneurial spirit amongst the whole population, right down to the ready-to-be-unleashed 'poor'" (p. 560). In other words, the vanguards of the global city reterritorialization initiative characterize peasants *themselves* as embodied obstacles to urbanization-as-progress, deeming their livelihoods static, backwards, and of the past, and discursively framing peasant bodies and practices as sites of intervention.

The reterritorialization of Bangalore's urban periphery exemplifies a neoliberal style of creative destruction, in which socio-spatial forms deemed structurally inefficient for capital accumulation are targeted and physically destroyed to make way for new forms that are better suited to that moment's surplus-value-generation needs. In Bangalore, a set of 'global city' discourses manufacture consent within the population for creative destruction via reterritorialization.

Harvey's (1982, 1985) theory of spatial fix provides a clearer view of the economic motivations underlying the creative destruction and dispossession in Bangalore. A spatial fix is a built-environment solution for over-accumulated surplus capital. The capitalist mode of production periodically generates a problematic level of surplus that, if allowed to over-accumulate, leads to socio-economic crisis: capital endlessly in circulation cannot reproduce itself; cannot alone generate the potentiality of continual surplus-value appropriation on the part of the bourgeoisie (Gilmore, 2007; Harvey, 1982, 1985). It must be "fixed": converted into physical infrastructure with the capacity to combine labour-power with other factors of production to produce surplus-value. In other words, the balance between fixed capital (capital realized in a material form that is conducive to the production of surplus value) and capital in circulation (money or commodities for consumption) should be maintained at an even ratio. Overaccumulated circulating capital is wasted capital.

One solution for this crisis of overaccumulation is to invest capital into the "secondary circuit" (Harvey, 1982, p. 236): built forms in the urban environment that do not need labour to produce surplus-value (Beauregard, 1994; Christophers, 2011; Harvey, 1985). Built-environment structures of surplus absorption are able to

generate surplus-value over a longer, more manageable time period compared to fixed capital for commodity production on the "primary circuit" (Ward, 2020; Zou, 2022). The "urban," through the lens of spatial fix, is thus both the outcome of capital investments and an agglomeration of architectures for further profit making.

Examples of spatial fixes include:
- Sites where individual consumers can recirculate their money via goods and services consumption (i.e., malls).
- Infrastructures that increase productive capacity in more indirect ways, for example by facilitating the movement of labour to its place of exploitation (i.e., roads, railways, highways).
- Physical collections of assets that form the material basis for accumulation based on speculative investment (i.e., real estate developments).

The lens of spatial fix clarifies the economic motives of developers and the Indian state to redevelop Bangalore. Spatial fix generates more demand for housing units and opens up more physical space to private developers to increase the housing supply, which in turn leads to increased urbanization and the expansion of the built environment into the periphery. Such processes of spatial transformation are part and parcel of the larger effort to produce the normative geography of Bangalore as a 'global city'.

'Neoliberalism from below' in Bolivia

However, the theory of spatial fix is not a universally applicable explanation of why and how urban development occurs across the world, especially in Global South contexts. Centering spatial fix as the most salient mode by which the urban is produced also problematically universalizes a theory of urbanization that originates from and is mostly applicable to the Global North. This is not to say that in the Global South, state-sanctioned processes of spatial fixing do *not* produce urban space, but rather that space is also made in a diversity of other ways. Through "peripheral urbanization" (Caldeira, 2017), or the direct construction (autoconstruction) of the urban by individuals and communities, for example, people create their own urban spaces outside of dominant state and market logics (Narayan, 2023). "Peripheral" in this sense refers to being on the periphery of official regulatory and governance regimes. People thus become their own agents of incremental urbanization, enabled through transversal, paralegal relationships with the state.

However, this does not imply that one can accurately circumscribe the Global North, neoliberalism, and spatial fix into one conceptual-ontological territory and the Global South, autoconstruction, and peripheral urbanization into another. Rather, the informality that defines both peripheral urbanization and other forms of socio-spatial organization in the Global South is also implicated in the dispersal of hegemonic neoliberal ideology in subtler ways. For Verónica Gago (2017, 2019), these internalized, subjectivized dispersals

comprise "neoliberalism from below": a neoliberalism defined as much by its antithesis in the agentic subjectivity of resistance to it (and the ensuing spatial resistances, individual and collective, that to which said subjectivity contributes) as by its imposition by 'usual suspect' institutions. 'Neoliberalism from below' is not when individuals subscribe to neoliberal logics of their own accord. Rather, it refers to the complex, dialectical, and negotiated interactions between resistances to neoliberalism and the experienced constraints of living under neoliberal regimes. I am interested in the implications that "neoliberalism from below," as the quotidian embodied practice of "a new collective affectivity and rationality" (Gago, 2017, p. 6), has for the social production of space. To explore such implications I now turn to the informal market of 'La Cancha' in Cochabamba, Bolivia, and the multidimensional sociospatial interactions between 'above' and 'below' that organize this non-propertied space.

In order to situate the neoliberal dimensions of La Cancha 'from below', it is useful to understand neoliberalism in Latin America 'from above.' In the 1970s, Latin American governments accepted large quantities of loans from international banking institutions, which boosted their foreign exchange reserves, allowing the state to access more low-interest credit (Kehoe et al., 2019). The fiscal policies of Latin American governments in this period centred around spending this credit on public works. As the decade pressed on, though,

the prices of Latin American commodities began to decline relative to national import income, leading to a balance-of-payments crisis that diminished Bolivia's favourable status in the eyes of foreign lenders (Arellano-Lopez, 1997). Said lenders began imposing punitive repayment conditions on Latin American states, which plunged their current account balances further into the negative. As a result, by 1988, 35% of the region's yearly domestic export earnings were transferred into the hands of international creditors (Roddick, 1988). These three co-occurring crises—stymied flows of foreign credit, harsh demands for foreign debt repayment, and a declining balance-of-payments ratio—caused a massive public debt crisis.

In Bolivia, this crisis caused a decline in real household incomes by an average of 28.5% from 1980 to 1985 and a reduction in the size of the formal urban wage-labour force by 6% (Arellano-Lopez, 1997). It also led to the Bolivian government slashing public expenditure and enacting massive cuts to social programs—for example, Bolivian healthcare spending was reduced by 77.7% from 1980 to 1984 (Roddick, 1988). This generated two new, mutually-reinforcing national crises of 'stagflation' and informalization, whereby Bolivia's real GDP declined as its currency depreciated relative to its foreign reserves (Antelo, 2000). Massive neoliberal reforms imposed in 1985 in conjunction with the IMF were some of the most intense and far-reaching in Latin America; dispossessing the Bolivian state of its capacity. This led to the privatization of the banking system, resource extraction firms, and the

electricity, water, and telecommunications sectors (Galindo, 2006; Kaup, 2012). Price stabilization aimed at reducing fiscal deficit successfully mitigated hyperinflation (Clavijo, 1992), but at the cost of generating unprecedented popular precarity, which manifested (partially) in massive expansion in the informal sector. By 1986, 40% of domestic transactions occurred outside the control of Bolivia's Central Bank and 80% of Bolivia's dollar reserves were sourced from drug trafficking income (Medina, 1986). By 2006, informal employment constituted 75.1% of all non-agricultural work in Bolivia (ILO Department of Statistics, 2011). This rapid growth of the informal sector coincided with a rise in urbanization as those dispossessed from rural livelihoods under neoliberalization flocked to Bolivia's cities in droves, often finding work in markets like La Cancha.

Located in central Cochabamba, La Cancha has existed since the 19th century. Beginning in the 1950s, though, rising urbanization due to reduced rural capacities for self-sufficiency led to the growth of informal vending among internal rural-urban Bolivian migrants. These trends gradually increased throughout the 1960s and into the 1970s, resulting in the spatial expansion of La Cancha into other parts of Cochabamba and the rise in importance of the urban informal sector in general. It was not until the post-structural adjustment era though that the informal economy in Cochabamba experienced truly meteoric growth, representing 44% of all employed adults in the city by 1992 (Instituto Nacional de Estadística, 1992) and 49% by 2001 (Instituto Nacional de Estadística, 2001).

La Cancha exists on public land that has not been captured for formal investment or been subject to land titling. Just as in other informal markets in Latin America (Gago, 2017; Toro, 2010), transversal, paralegal relationships with the state allow the vendors to sustain their livelihoods. La Cancha vendors are routinely subjected to "police raids, extortion, confiscation, and harassment" (Goldstein, 2016, p. 105) by security forces—agents of the neoliberal state. It thus seems on the surface as though the space of La Cancha and the people who inhabit it are exclusively objects of neoliberal aggression, whose very existence contests hegemonic neoliberalism.

To a large extent, this is empirically true. La Cancha is a public space. The socioeconomic relations that its vendors engage in reflect a communal assignment of use value to the space over exchange value. Vendors resist efforts by the state to formalize the neoliberalization of their space, to privatize La Cancha into exchangeable property. However, I argue that, a.though this is the case, viewing the informal market as a space forcefully produced by and inherently resistant to top-down 'neoliberalism from above'— that neoliberalism imposed by the Bolivian state in conjunction with international financial institutions— elides two important aspects of how it is socially produced by the relational dynamics of its vendors. For one, this top-down perspective does not take into

account how understandings of property (and approximations of property) that are contingent upon normative, neoliberally-informed understandings of individualism and entrepreneurship are embedded within vendors' social practices—in La Cancha (Goldstein, 2016), and other Latin American informal markets (Gago, 2017; Toro, 2010). Correspondingly, a top-down perspective ignores how the quotidian practicalities of these understandings—or "spatial practices," following Lefebvre (1974/1991)—socially produce the space of the market 'from below.' This is to say that La Cancha is also a *subjectively* produced space in a way that is not entirely incompatible with neoliberal logics. Conceiving of Latin American informal markets (like La Cancha) as spaces defined exclusively by *resistance* to neoliberalism, where its presence is imposed *only* by the state falling in line with the Washington Consensus, annuls neoliberalism's fragmented—yet meaningful—subjectivities. This perspective generates an inaccurate and overly simplistic understanding of how its subjects experience, understand, and are interpellated by its imposition.

Comerciantes fijos, with fixed stalls (*puestos fijos*), have a more stable socio-spatial position within the social space of La Cancha relative to *comerciantes ambulantes*—vendors without stalls that roam the market. *Fijos* also tend to see themselves as more worthy of security and stability than the *ambulantes* based on their relatively greater proximity to the state and their possession of something approximating formal property. *Puestos fijos* are thus essential infrastructures of livelihood on a material *and* symbolic level: they are spatial manifestations of the *fijos'* "insistence that the market is a product of their own work and investment" (Goldstein, 2016, p. 111). *Ambulantes*, correspondingly, view the *fijos* as threats because of the *fijos'* perceived relative proximity to the property-protecting security forces of the state; forces which routinely subject *ambulantes* to abuse. Here, normative ideas of property, security, hard work, and entrepreneurship define—to an admittedly incomplete yet significant extent—the relationships between *ambulantes* and *fijos*.

Although the *fijos* are much more materially disadvantaged and marginalized than, for example, residents of gated communities in São Paulo (Caldeira, 1996), or high-caste residents of Indian cities (Ranganathan, 2022), they share similar fears of encroachment. The *fijos'* fears of the *ambulantes* threatening their space and privileged positions resemble the discourses the other two groups employ to discursively frame themselves in opposition to the urban poor and justify increased urban securitization based on their perceived 'encroachment' into middle-class or upper class communities (Botello, 2013). This hierarchical relation is a byproduct of the neoliberal production of La Cancha, internalized and reproduced within the neoliberal regime's informal subjects. The assemblage of relations comprising and producing La Cancha therefore constitute what Gago (2017) calls a "baroque economy:" a territory in which "the

persistence of and confrontation with the neoliberal dynamic from above and from below are simultaneously negotiated" (p. 3). The iterative reproduction of this hierarchical relationship through social interaction in the spatial economic context of La Cancha thus produces the market as a space of subjective 'neoliberalism from below.'

Conclusion

Neoliberalism is a hegemonic organizing framework that meaningfully delimits contemporary urbanizations globally. The lenses of neoliberalism (entity) and neoliberalization (process) together constitute a useful analytic because their effects are felt globally—in diverse and geographically contingent ways—and because such geographical contingencies can in turn generate new epistemologies of neoliberalism. Such subjective neoliberalisms do not so much disrupt as complicate. Neoliberal production of space occurs in 'top-down' ways—via the Ideological State Apparatus underlying the global city paradigm in Bangalore—and also to a certain extent 'from below,' from within the subject itself. The *fijos* and *ambulantes* of La Cancha demonstrate how neoliberal logics of entrepreneurship and individualism can be simultaneously, subjectively transmuted and reproduced in the non-propertied, seemingly non-neoliberal space of La Cancha. As such, neoliberalism and neoliberalization, as frameworks with which to examine urbanizations in the North and South, provide flexible and context-specific approaches to understanding the constant dynamism of our global urban environments.

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Making Better Sense:
Remote Sensing and Indigenous Embodied Epistemology in the Deep Sea and Outer Space

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While often considered distinct, the deep sea and outer space function similarly under the technical and philosophical underpinnings of normative Eurowestern science and politics. Contemporary remote sensing and emergent Internet of Things (IoT) technologies often map terrestrial frameworks of territory and distance onto conceptual and physical understandings of the deep sea and outer space. However, remote sensing systems, characterized by their very remoteness, largely do not yet account for lived, embodied experience in producing knowledge of these spaces. This paper extends Indigenous epistemologies, as embodied and relational ways of knowing and being, to remote sensing and IoT infrastructures, offering a perspective of being-in-space that resists the settler-colonial aspirations of contemporary scientific and political practices in the deep sea and outer space. Ultimately, I conclude by considering the need to work with and within multiple paradigms to understand the complexities of extraterrestrial space in more just ways, with bearings on how we might refigure landed, spatial configurations of power in our current moment.

Introduction

In February of 2024, ERS-2, a dead European remote sensing satellite, returned to Earth, marking the final act of a career of sensing work collecting data on ocean-surface temperatures and oceanic winds (Josh, 2024). While objects like ERS-2 re-enter Earth's atmosphere almost weekly, Doubek and Peters' (2024) headline of the event for the NPR reflects more popular spatial concerns over the uncontrolled re-entry: "A dead satellite crashed back to Earth. No worries, it landed in the Pacific."

The crash of ERS-2 into the North Pacific between Hawai'i and Alaska demonstrates the linkages between outer-spatial remote sensing and oceanic knowledge-making — between two spatial extents commonly considered vastly different, yet increasingly posed in tandem with one another (Whitt, 2024). These sea-sky connections are operationalized through contemporary Internets of Things (Ashton, 2009), or networks of semi-autonomous sensors, transmitters, and receivers of digitized information. Environmental Humanities scholars like Katarina Damjanov (2023) and Julie Patarin-Jossec (2023) have studied these sea-sky connections of material infrastructure, yet reflections on embodied epistemologies, especially from Indigenous peoples, remain largely absent from critical work in sensing science. In thinking through Indigenous embodied epistemologies, I turn to scholars like Karin

Ingersoll (Kānaka Maoli), who writes that the being-within nature of ocean-based knowledges offer "cultural awareness and affirmation within the reality of colonial history and of neocolonial systems," with the goal of "speaking to an ethical experience of movement through the world and life" (2016, p. 2).

I address this lacuna of the political and cultural contours of remote sensing praxis by focusing on the interface between sea-space Internets of Things and Kānaka Maoli (Native Hawai'ian) seafaring as co-contemporary epistemologies that approach knowledge-production from vastly different vantage points. My concerns with the situated nature of *Hoʻokele* ("navigation") and the extractive politics of networked remote sensing draws on work in the Blue Humanities, which, among other priorities, often interrogates oceanic spaces from the perspective of embodied human experiences (Alaimo, 2019; Ferwerda, 2024). This reasoning responds to Critical GIS studies that consider the practical and legal realities of data sovereignty and spatial jurisdiction, centering the human as an actor and target of Internets of Things systems (Davret et al., 2024; Warren et al., 2023). Ultimately, I am interested in offering a decolonial approach to conceptualizing sea-space Internets of Things as an abstracted form of Indigenous relational ontologies, which in turn call for increased scientific and community collaboration and engagement with knowledges outside of current neocolonial sensing practices.

Internets of Things

Internets of Things (IoT) are still relatively new phenomena, having only truly been realized within the scope of the twenty-first century. In their most expansive sense, Internets of Things are networks of interrelated, semi-autonomous, physical technologies that transmit and exchange data with one another. These networks underpin contemporary geospatial data collection and transmission as an interdependent network of various private, public, and academic entities (Qiu et al., 2020). Thus, the technical operations of seafaring ships, spacecraft, satellites, underwater sensors, and land-based receivers are interlinked with one another in mutual exchanges of data (Wei et al., 2021).

An emergent Underwater Internet of Things (UIoT) marks a series of transformative leaps in geodata technologies that seek to explore, map, and understand marine spaces via digitized networks of knowledge (Mary et al., 2021; Mohsan et al., 2023). This general optimism is reliant on effective sea-sky-land IoTs, bringing multiple spatial, temporal, and political registers into conversation with one another. However, the networked intersections of IoTs demand a distinct set of sensibilities toward the aquatic, the terrestrial, and the extraterrestrial as spaces of overlapping ontological and epistemological frameworks. To the extent that these spaces are interconnected, I am interested in the operation of IoTs enabling

the technologies that allow remote sensing to be a method for producing knowledge about oceanic spaces.

Tellingly, remote sensing's method is precisely its remoteness, acquiring data from phenomena at a distance, or a "view from nowhere," drawing from Donna Haraway's (1988) work on critical feminist situated knowledges. Those following Haraway's intervention are apt to critique the faux-Archimedean vantage point, or the idealized God's-eye view from above, that remote sensing relies on (Bennett et al., 2022). Remoteness, then, informs a settler-colonial motif of emptiness, which renders space legible by its ability to be mapped, generalized, and territorialized rather than experienced. Remote sensing's often planar projection of human vision onto phenomena imbues a normative view of spatial science which privileges decontextualized sight as the foremost epistemological method for interrogating spaces.

Satellite-based remote sensing has also allowed for a heightened ability to extract the data necessary to produce systems like Google Maps that many often rely on for navigation in daily life (Kamilaris and Ostermann, 2018). Recently, sensing has also been deployed in novel bathymetric endeavors to map the deep sea, such as the InVADER project, which uses laser spectroscopy to study seafloor geochemistry in the equatorial Pacific (Yanchilina et al., 2024; Warren et al., 2023). While scholars in Media Studies and Science and Technology Studies have attended to

the ramifications on energy consumption, infrastructural consolidation, and racialized mattering of digitizing the oceans (Mukherjee, 2021; Han, 2021), these endeavors to study the deep ocean continue to be pushed for by scientists, institutions, and governments that are keen to document oceanic space as it relates the extraction of raw resources (Childs, 2020).

That remote sensing is a pervasive part of our terrestrial everyday experiences and scientific outlook demonstrate the importance of the view from nowhere in advancing a global cartographic catalogue of the Earth's surface, including spaces that are non-humanly inhabited or difficult-to-access parts of the world's terrestrial surface, from afar.

The Views from Above and Below

The political and cultural dimensions of remote sensing of land and sea are increasingly interconnected and complex. Remote sensing of land and underwater spaces function similarly in their codification of data, the privileging of normative science and exclusion of Indigenous ways of knowing, and tendency to allow for neocolonial interpretations and utilizations of space.

Philip Steinberg and Kimberly Peters complicate the erroneously considered omniscient planar view from above, proposing a "wet ontology" that considers "the sea as a space of volume" (2015, p. 252). By considering the voluminous nature of oceanic space, which is by nature in a constant state of turbulence and churning, Steinberg and Peters note the need to consider oceanic geopolitics in multiple

dimensions at once, from surfaces to depths, in a way that pushes beyond terrestrial thinking of space as static and easily divisible. These geophysical considerations of a materiality that is constantly in flux lend itself to thinking about space in terms of flows, circulations, and, critically, "dynamic assemblage[s], in which mobile human and nonhuman elements and affects" are "imagined, encountered, and produced" (Steinberg and Peters, 2015, p. 256).

Thinking of networks as fluid assemblages with both expanse and depth offers a critical vantage point from which to analyze remote sensing IoT, extending ontologically planar networks (Latour, 1996) into a third dimension of flux–a volumetric space. Oceanic thinking considers the various actors of an interconnected network in terms of depth and fluidity, emphasizing the simultaneous mobility of relationships between actors as embedded in certain power relations and sociopolitical positions within the world.

In a literal sense, the physical characteristics of underwater IoT infrastructure necessarily operates voluminously and inter-spatially, insofar as satellites in Earth's orbit liaise with sensors submerged beneath the ocean surface and terrestrial receivers. Each actor within the IoT functions in different spatial arenas that cannot be mapped as congruent or neatly bordering each other. The data and subsequent knowledge gathered and transmitted about oceanic spaces in this way, then, resist a simple, linear materiality that can be contained to thinking of space in a single way. Rather, like how IoT confounds disparate physical spaces, we must attend to the interweaving of different ways of knowing and being within the world that resist the easy exploration of space through extractive, normative science.

Warren et al. (2023, p. 555) discuss remote sensing of oceanic spaces with an implicit critique of normative categorical thinking, expressing a new approach that considers the ontological needs of marine environments away from "classification systems developed to represent terrestrial anthromes." Their discussion highlights the multivariate nature of marine datasets that cannot easily be pinned to a specific point in three-dimensional space given the constantly slippery, incessantly fluid state of water. Consequently, they are wary of current approaches toward oceanic space within marine industries that treat the oceans as another form of land, especially as it comes to a fixation of discovery narratives surrounding the mapping of the ocean floor as a "local frontier" (Yanchilina, 2024), as opposed to considering the human and more-than-human factors and shifting currents of the voluminous deep sea.

From a technical perspective, knowledge-production of oceanic space widely begins with the pragmatic, which in normative Eurowestern science, means delineating the extent of oceanic space from the perspective of territory. For example, Media Studies scholar Nicole Starosielski (2015, p. 204) attends to data transmission in the form of underwater sea cables as material connections within a global internet. She asserts that "the extension of cables not only helped map the ocean's depths, but it also contributed to charting

its surface" and the different forms of life and culture below and above the sea's surface. This "charting," however, is produced in the specific context of connecting terrestrial spaces to one another and is therefore limited by its unconcern with the complex temperamentality of oceanic biodiversity and sites of cultural heritage for many peoples through which undersea cables traverse.

That oceanic enterprise privileges a terrestrial-minded approach to territorialization is precisely what Brian Russel Roberts (2021) argues in his work on the *archipiélado*, or the archipelago as a space in which the sea forms a distinct *lado* or "side" — "a space to be from, a place of existence" as opposed to "simply a medium by which one may transit" from landed space to other landed space (p. 123). Roberts' primary concern, then, regards the fluid political definitions of oceanic space, a concern that he shares with Monteiro and Parmiggiani's investigation of the IoT politics. Monteiro and Parmiggiani respond to the digitization of oceanic data as used to quantify or calibrate claims to oceanic space as fundamentally disregarding the "broad consensus" that knowing is both material and entangled (2019, p. 169).

Adapting remote sensing IoT to underwater environments, then, involves a concerning routing of information systems through terrestrial political thinking which confuses oceanic depth as space to be traversed rather than space to be within, selecting end goals that attempt to map the ocean floor as a quasi-territory, or merely focus on the connective affordances of oceans for terrestrial spaces. To see oceanic space as relational, as "seeking genealogical and cultural sources and tributaries" (Somerville, 2012, p. 58), calls to attention the ways in which identities and ways of beings are fluid and ever-evolving.

Responding to these critiques from a Cultural Studies register, Melody Jue offers diving as a generative method of interrogating aquatic spaces. Jue's attention to an embodied experience of diving as method informs her thinking about the ocean as a space that demands of her "constant movement and negotiation, an awareness of finding myself," and indeed, a "sharing a sense of the vulnerability and fragility" (Jue, 2020, p. 152). Such oceanic thinking stands in opposition to the ontological character of remote sensing, which only considers the view from above. Being within oceanic spaces and viewing them in situ affords a sensitivity to the constant flux and ephemerality of space, demanding a consideration of affect, movement, and change at an embodied level, providing a form of oceanic knowledge that disembodied actors in remote sensing IoT do not.

Sensing as Settler-Colonial Science

The Archimedean perspective and methods that undergird remote sensing produce infrastructural and epistemological conditions that are freighted with colonial logics, particularly when the normative remote sensing encounters Indigenous peoples and epistemologies. Hawai'i offers a particularly salient space in which these tensions between dominant science and Indigenous ways of knowing are at work in

tangible, spatialized ways. These tensions are fundamentally territorial under the imposition of the United States' geopolitical and juridical operations, principally in the role of space science infrastructure on the archipelago. Long have sky and space sciences been attracted to Hawai'i for its lunar-esque volcanic geology, its climate, and its use as a naval base by the United States, and long have Indigenous Kānaka Maoli protested the appropriation of cultural lands for use as semi-militarized sites of production for normative space science (Howell et al., 2007; Matson and Nunn, 2017).

Sammler and Lynch (2021) call attention to the Thirty Meter Telescope (TMT) and the Hawai'i Space Exploration Analog and Simulation (HI-SEAS) as two space science infrastructures that necessarily co-produce a normative science predicated on remote observation and colonial occupation. The two identify the role of the scientific apparatus — technologies, sensors, and built environments — as part of processes of ongoing colonization that obfuscate the relationships between sites of study, tools of study, and bodies. The two note that remoteness is precisely the method and spatial organization through which normative science "iteratively constitutes relations of objectivity and subjectivity" (2021, p. 961). In this, their criticism of the tangible contours of territorialization interweave with epistemological concerns over settler space science.

Their criticism is part of a much larger array of voices concerned with the directions in which remote sensing's colonial logics set a terrestrial precedent for the yet-to-be-fully-encountered spaces of the deep sea and outer space. The extractive politics of spatial appropriation are already fast at work in the dually-operative discourses of deep sea and extraterrestrial mining, for which governing frameworks have not yet been established or actualized (Childs, 2020; Fox, 2022). Ojibwe scholar Niiyokamigaabaw Deondre Smiles (2020) warns against current settler-colonial approaches to space exploration that are characterized by a lack of critical attention to the more-than-human, the non-terrestrial, and the lack of regulation that yields the (dis)possession of territory and absence of collaboration with communities. This lack of collaborative community engagement is of paramount concern for Indigenous peoples who understand the skies and outer space as culturally and religiously significant. As Finnegan (2022) notes, these interferences are only further exemplified in how the deregulated spaces of low- and medium-Earth orbit have enabled satellites to clutter the skies, blocking access to the stars that traditional Polynesian wayfinding is reliant on.

The disruption and occupation of astrological space with satellites is likewise present in the deep sea. Hawai'i is also a popular site for space exploration because of its location at the near-center of the Pacific Ocean, which allows for a base of operations that can coordinate the reentry of spacecraft into the Pacific, retrieve returning human or instrument cargo, and, critically, ditch incinerated spacecraft in the middle of the ocean (De Lucia and Iavicoli, 2019). Critically, Hawai'i's continental

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remoteness forces a reinterpretation of being at what Alice Te Punga Somerville (2012, p. 41) describes as "the edge" of an ocean, which in turn recasts Hawai'i as oceanically central as "the presence of the ocean as an entity produces a sense of an oceanic identity."

A simultaneous occupation of terrestrial, extraterrestrial, and oceanic space in the Pacific exemplifies the dominant scientific discourse of territory as delineated space, drawing attention to the ways in which such neocolonial articulations of space are embedded in normative scientific traditions. Consequently, these occupations inform the way knowledge is produced within normative science, which ignores the role of the human and more-than-human body at the same time as Eurowestern science marginalizes the synergetic relationships between sea, sky, and land.

The View from Within

To the extent that a voluminous approach offers more accurate and expansive inquiries into outer-spatial and oceanic spaces, it is significant that normative science has yet to fully integrate other ways of knowing that account for the profound inter-relationships that constitute oceanic space and oceanic epistemologies. These epistemologies necessarily contest the terrestrial-territorial imaginations of space that normative Eurowestern science espouses and imposes, particularly on and often against the people who have existed within those spaces since long before the rise of a "modern" scientific method.

Ingersoll (2016) posits an alternative in the form of a "seascape epistemology" that privileges human sensorial and more-than-sensorial aspects of being-within oceanic space. Ingersoll's call for oceanic literacy, or the "complex assembling of the ocean with the body," is informed by the embodied practice of "ke kai: seeing, smelling, and hearing" the ocean and the skies (p. 133). These relationships between the human body, the sea, and the skies constitute Indigenous ways of knowing that normative science and remote sensing does not yet account for. Manulani Aluli Meyer (2001) more broadly reflects on the relationship between "senses" that "rely heavily on the fact on logic of our bodies" and Hawai'ian epistemology, suggesting that Hawai'ian empiricism involves an active "linking of experience with awareness" (p. 130, 133). In this, seascape epistemologies become relationships with the material and nonmaterial world as centered within specifically Kānaka Maoli bodies and cultural contexts.

These embodied relational perspectives provide a view from within extraterrestrial space — a way of knowing that directly attends to the interwoven logics of the deep sea and outer space. As Opsakwayak Cree scholar Shawn Wilson asserts, "[w]e can extend this thinking — of viewing objects as the relationships we share with them — on how we see concepts and ideas" (2008, p. 74). Viewing remote sensing Internets of Things as relational objects, connecting the sea and sky together, from the perspective of an Indigenous seascape epistemology, uplifts embodied experiences and cultural

knowledge into a new, more just scientific framework.

The work of realizing these relationships is already underway, from contesting colonial occupation of port cities (Hofmeyr, 2020) to engaging traditional mapping practices (Fujikane, 2021). However, further collaboration between settler-colonial and Indigenous scientists is essential to strengthening the human, material, and conceptual relationships that undergird extraterrestrial exploration. As Tony Milligan notes, Indigenous appeals to "belonging" in extraterrestrial space frame both explorative futurities in ways that are "typically Earthly, but also more than Earthly" (2021, p. 7). Smiles corroborates, arguing that in addition to "helping settler society practice self-reflexivity," the stakes involved from an Anishinaabe perspective are manifold, for humans "are bound by webs of relations" that "extend to the stars themselves" and the seas as well (2023, p. 257, 259). Allowing space for Indigenous scientists to meaningfully engage with the deep sea and outer space is paramount to developing fuller knowledges and more ethical approaches to studying those spaces — approaches that are sensitive to human and more-than-human bodies.

From the perspective of Indigenous epistemologies, remote sensing IoT are, themselves, relationships. Consequently, the infrastructural relations that constitute normative science must be attended to. The potentials involved in highlighting, understanding, and strengthening relationships within the scientific community are myriad, especially in discussions over how to regulate the deep sea and outer space from political and legal perspectives (Collis, 2012; George and Wiebe, 2020). Working in concert with one another, different institutions, agencies, and communities can imagine and bring into operation new modes of extraterrestrial knowing and being that resist colonial urges to dominate and extract space (Treviño, 2023). And indeed, insofar as considering the extraterrestrial offers new views above and below, relational epistemologies offer a new sense of how to engage in those same issues on Earth.

Conclusion

To think of remote sensing Internets of Things as relationships is to recognize the ways in which normative sensing science can and must produce knowledge. It is to recenter the role of human and more-than-human experiences by strengthening the way we conceptualize sea, sky, earth, and outer space as related. It is to assert that to produce accurate, relevant, and useful knowledge, our methods must appreciate and be sustained by the relations that constitute them. This work must be inherently collaborative and engaged with finding ways to respectfully presence non-Eurowestern and especially Indigenous ways of knowing outside of colonial scientific frameworks—to think beyond, imagine, and interrogate beyond the knowledge we can acquire from remotely sensing phenomena.

To the extent that different spaces of existence can be synergistically known by

the material and non-material relationships between them, so too can productive synergies be made between remote sensing and Indigenous ways of knowing and being in the world. Rather than inherit colonial disconnections and remoteness that frames our narratives of discovery, territorialization, and extraction, we must strive to move beyond the terrestrial, both as physical and philosophical spaces and modes of inquiry, as we continue to navigate the yet-to-be-fully-known spaces of our planet and beyond.

Acknowledgements

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Postcolonialisms in Post-Apocalyptic Landscapes: Colonially-Driven Environmental Degradation and Coloniality in Hayao Miyazaki's *Nausicaä of the Valley of the Wind*

Hannah Swearingen, Fu Otani, Sara Siddiqui, Ekem Dhesi

This paper builds on postcolonial and Indigenous climate change studies' understanding of environmental degradation as a mode of colonial domination. We argue that a parallel can be drawn between the subjugation of Indigenous peoples under settler colonialism and that of both wajin – the dominant group – and Indigenous peoples (Ainu, Uchinanchu) of Japan under US imperialism. These groups' similar experiences of inferiorization and subjugation under Eurocentric coloniality has generated a rich literary tradition of liberational futurities, expressed in Indigenous science fiction and Japanese apocalyptic science fiction. Through an analysis of Hayao Miyasaki's (1984) film Nausicaä of the Valley of the Wind, we argue for the subversion of colonial discourses as a powerful and necessary action in order to combat contemporary colonial oppression and environmental degradation.

Hayao Miyazaki's (1984) film *Nausicaä of the Valley of the Wind* explores the aftermath of a colonially-driven ecological apocalypse, envisioning an alternative future where coloniality is resisted and ultimately dismantled. Drawing from Indigenous scholarship on climate change and postcolonial studies, we examine *Nausicaä* as an example of a *futurity of liberation*, a term we propose to encompass the alternative futures envisioned in Indigenous and Japanese apocalyptic science fiction (sf).

Coloniality and the Environment

The formal colonial period, explains Quijano (2007), produced a colonial matrix of power – coloniality – which persists to this day. While this structure is far-reaching across political, economic, and social domains, in this paper we will focus on the coloniality of knowledge. Colonization began with the systematic repression and supplantation of diverse modes of knowing and their associated practices with one glorified Eurocentric cultural and epistemological pattern. This singularity was then equated with power and prestige, rendering its adoption seductive, and its non-adoption ruinous.

It is through this colonial matrix of power that colonized peoples are dominated. Coloniality as a tool of subordination and social control equated the Eurocentric model as superior to all other modes. Beyond formal colonization, the subject/object relation of colonial knowledge persisted, as today "the large majority of the exploited, the dominated, the discriminated against, are precisely the members of the 'races', 'ethnies', or 'nations' into which the colonized populations, were categorized in the

formative process of that world power, from the conquest of America and onward" (Quijano, 2007, p. 169).

One such exploited population is that of Indigenous peoples, whose knowledges and existences are erased and formulated as backwards. Davis and Todd (2017) argue that the widely-adopted term *Anthropocene*, referring to contemporary domination of human activities on the planet, is an example of such erasure. Setting the start date of the Anthropocene as the Industrial Revolution, the authors explain, neglects an analysis of the spatial variation and power dynamics of environmental degradation. Centering Indigenous rather than colonial experience reveals colonization as the beginning of a "world-ending violence" on Indigenous communities and the environment (p. 773). Corroborating this perspective, Kyle Whyte (2017) argues that anthropogenic climate change is an intensification of environmental change imposed on Indigenous peoples by colonization (p. 153). Furthermore, Indigenous peoples' survival and resistance to settler colonization and environmental change is degraded through forced immobility (e.g., by the reservation system) and ongoing exploitation by colonial-capitalist institutions (Whyte, 2018). The degradation of the environment is thus intimately entangled with coloniality and the oppression of Indigenous peoples.

It is with this understanding that ending environmental exploitation necessitates liberation from colonial structures. There is no liberation for the environment without liberation of Indigenous peoples from settler colonialism. With deconstruction of colonial epistemologies as a path towards liberation, academic and popular discourse is a fundamental battlefront for decolonization. One such domain being is that of sf.

Futurities of Liberation: Indigenous and Apocalyptic Futurisms in Science Fiction

Science fiction written by Indigenous authors – *Indigenous sf* – diverges from tales of new frontiers, space colonies, and take-over by 'aliens,' in imagining futures beyond and without colonial relations. In this vision, Indigenous peoples are depicted as *Sovereign Others*. This idea, eloquently compacted by Brown Spiers (2021) from a rich body of Indigenous theorization, reclaims the designation of Indigenous peoples as *others*. In his work in the Algerian colonial context, Franz Fanon (1963) reveals how colonial ontologies transform the colonial subject to *object*. Through this degradation, the colonizer degrades, annihilates, and necessitates the subjugation of the colonized. Not only is the colonized inferior, he is inhuman, hostile to – *other* to – the colonizer's world. In the settler colonial context, the othering of Indigenous peoples takes the form of their dispossession, assimilation, and annihilation. Contemporary Indigenous activism increasingly rejects collaboration with the settler colonial state in the pursuit of recognition politics, refusing assimilation to the settler political economy (Gergan & Curley, 2023). Following this principle, Indigenous

peoples assert their existence as *Other* – outside of and resistant to settler colonial structures – and *Sovereign* – entitled to and fully capable of self-determination (Brown Spiers, 2021, p. xiii-xiv). The self-determination of Indigenous peoples extends far beyond the bounds of political organization, as Indigenous peoples exert sovereignty of nutrition, education, technologies, literature, and more. As one such domain, Indigenous sf articulates a future by Indigenous peoples for Indigenous peoples.

Tanaka (2014) details *Japanese apocalyptic sf* as rooted in the collective ongoing experience of apocalypse from the catastrophic atomic bombing of Hiroshima and Nagasaki, the disaster of the Fukushima Daiichi nuclear power plant, and the Great Hanshin-Awaji (Kobe) Earthquake. Although rooted in an altogether different context than that of Indigenous futurism, a parallel can be drawn between the Japanese experience of trauma with the generational trauma of Indigenous peoples who have "already survived an apocalypse" (Alter, 2020). With imperialism as a continuity of colonial structures of domination (Quijano, 2007), the subjugation and violence experienced by the Japanese population under US imperialism is rooted in the same destruction and discounting of knowledge systems as experienced by Indigenous peoples under settler colonialism. This is not to mistakenly equate the experience of Yamato peoples (*wajin*), the dominant ethnic group of Japan, with Indigenous experiences. However it is also important to recognize deviations from the dominant and institutionalized Western concept of Indigeneity, and how coloniality as a global project of domination is manifested across contexts.

Wajin, while not Indigenous, are still subject to similar discourses as Indigenous peoples in the Americas as the dominant culture's Shintoism, Buddhism, and Confucianism is largely viewed as backwards by the Eurocentric mode. Japan is additionally home to two Indigenous populations – the Ainu of Ezochi (presently Hokkaido) and the Uchinanchu of Okinawa (Jimura, 2021). Ainu peoples have been subject to policies of assimilation and labor exploitation by the Japanese government, and despite recognition as Indigenous peoples, do not have recognized rights (Jimura, 2021). For the Uchinanchu, settler colonialism and imperialism as sources of subjugation coincide, necessitating resistance movements against both US military presence and Japanese post-colonial policies (Nishiyama, 2023; Jimura, 2021). Indigeneity in Japan has therefore been informed by both sources of oppression, and we can investigate the cultural experience of Japanese oppression with an understanding of the sustained discourses employed by colonialism and imperialism.

Similar to Indigenous sf, apocalyptic sf provides a platform in Japanese media to process and explore alternative futures which emphasize survival and perseverance through apocalypse. Indigenous and Japanese apocalyptic sf are platforms through which a future of community resilience can be actualized beyond present oppression and trauma. These stories emphasize collective

agency and the capacity for prosperity in the future – in short, *futurities of liberation*.

Nausicaä of the Valley of the Wind

Set a thousand years after the devastating war, the Seven Days of Fire, *Nausicaä of the Valley of the Wind* unfolds in a world where human civilization has been devastated, leaving only sparse settlements surrounded by the Toxic Jungle, a hazardous region infested with poisonous plants and large insects. The Valley of the Wind, sheltered by constant ocean breezes that keep toxic spores at bay, is home to a small, peaceful community. Nausicaä, the empathetic and curious princess of the Valley, dedicates herself to understanding the jungle and its creatures, particularly the protective Ohmu, massive insect-like guardians of the jungle. The peace of the Valley is shattered when the Tolmekian Empire, led by Princess Kushana, invades in pursuit of a dormant Giant Warrior, an ancient, bioengineered weapon from the Seven Days of Fire. The Tolmekians aim to use this weapon to destroy the Toxic Jungle and reestablish human dominance over nature. A competing kingdom, the Pejites, attempt to destroy the Tolmekian army by injuring a baby Ohmu and using it as bait to send the enraged Ohmu stampeding into the Valley. Nausicaä risks her life to save the baby. This act of compassion calms the enraged Ohmu and they heal her wounds, showing their kindness.

Mechanisms of Apocalypse: Colonialisms and Coloniality

The Anthropocene, as understood by Davis and Todd (2017), is a time of 'climate crisis' not because climate change has reached an unprecedented scale, but because the impacts of environmental degradation for the first time are impacting the colonial elite. For Indigenous peoples, colonial annihilation of communities and environments is a familiar experience. The present shock of environmental damage for settlers is therefore a new rather than ongoing experience. *Nausicaä* depicts this differential impact on colonizers versus colonized peoples as separate experiences of 'apocalypse.' While the Tolmekians fight to overcome the Toxic Jungle, the Valley residents resist their subjugation at the hands of the Tolmekians.

In the film's opening scene the Toxic Jungle is featured: a forest with strange, bulbous spored plants overlapping with one another. The Tolmekians perceive its expansion as a threat that must be violently eradicated (Miyazaki, 1984, 4:20). However, the film reveals the Jungle to be not inherently destructive but part of a process of ecological regeneration. In this way *Nausicaä* demonstrates the source of apocalypse for the domineering Tolmekians to be held in unfamiliar landscapes and the need to subdue them to serve the colonial empire. Their militaristic approach of settlement and extractive capitalism, driven by inherent beliefs of ownership, aligns with the destructive practices of colonial capitalism

(Césaire, 1950). The Tolmekians' disregard for ecological practices as settlers is deeply rooted in colonial capitalist ideology, where they devastate the land to exploit the very resources required to sustain their domination over landscapes (Miyazaki, 1984; Whyte, 2018). Thus, the insertion of Tolmekian presence in the jungle serves as a metaphor that represents the ecological injustices exerted by colonial powers.

Rather than the natural environment, the film portrays colonization as the apocalypse experienced by Nausicaä and her community. Tolmekian occupation encroaches upon Nausicaä and her community's way of life and knowledge systems, dismissing Indigenous sovereignty, culture, and identity (Davis & Todd, 2017). Thus, the collective continuance – community-derived adaptive capacity – of the Valley's residents is undermined through the imposition of militarized and exploitative colonial knowledge systems (Whyte, 2018). Mirroring the violent apocalypse faced by Indigenous peoples, wherein all that is familiar to the community, such as land, culture, language, and ways of life, are lost (Davis & Todd, 2017, p. 764), Tolmekian domination and destruction of the Valley's adaptation to the Toxic Jungle is shown as deliberate colonial oppression. The dismissal of Valley residents and their ability to sustainably and effectively manage the Jungle illustrates the erasure of generations of Indigenous knowledge. Césaire (1950, p. 173) explains that this phenomenon "degrade[s] [colonized communities]... by applying violence and moral relativism," replacing Indigeneity with coloniality which prioritizes exploitation and violence. In its dual presentation of apocalypses, *Nausicaä* illustrates environmental collapse and cultural erasure as intertwined under colonization.

From Binary to Plurality: Human-Technology-Nature Relations

Fundamental to coloniality is the creation and maintenance of binary divisions. Knowledge, information and relations to all beings and materials, are sorted into a "radical dualism: divine reason and nature. [Where t]he 'subject' is bearer of 'reason', while the 'object', is not only external to it, but different nature. In fact, it is 'nature'" (Quijano, 2007, p.172-173). Providing a framework for critiquing colonial Othering, apocalyptic sf aims to reveal "contradictions and confrontations between binary ideas, make them clash in the apocalypse catastrophe, then reunite them after the crisis" (Tanaka, 2014, p. 92). Indigenous sf additionally critiques what it means to be othered from a colonial culture, depicting Indigenous peoples as Sovereign Others – communities rendered outsiders to settler colonialism who nonetheless want to stay that way but while demanding respect and self-determination in all aspects of their livelihoods (Brown Spiers, 2021). Indigenous sf also embraces alter-humanisms to problematize colonial relationalities, as the concept of Indigenous Otherness provides a mechanism for pluralizing thinking and attitudes when binary divisions are dismantled post-crisis (Attebery, 2020).

Thereby through sf, including in *Nausicaä,* there is a path to the critique and ultimate destruction of colonial binarity.

In *Nausicaä,* the Tolmekians are portrayed as technologically advanced, facilitating development in this region through the introduction of industrialization, commodification, and the militarization of ecological systems. Princess Kushana's arrogant and uppity assistant is a caricature of colonial nationalist pride as his belief in his own 'superior rationality' is laughable. Under this colonial paradigm of modernity, egalitarian knowledge systems are excluded, and relationships with the natural environment are denied as nature is portrayed as a separate entity, one that needs to be controlled, territorialized, and exploited for its sustainable use. Echoing Quijano's (2007) understanding of colonization as "the process of Eurocentrification of the new world power, [which occurs while systematically erasing] and muting knowledge systems in favour of Eurocentric modernity" (p. 171), the film shows the flaws of modernity and critiques its consequences.

Through contrasting the Tolmekians' failed domination with Nausicaä's gentle success, the film emphasizes the flaws produced by colonial knowledge and presents alternative knowledge systems rooted in environmental stewardship and ecological care. Similar to Nausicaa, Indigenous traditions such as those of the Anishinaabe state that humans do not hold superiority over nature and nonhuman beings, but rather have the capacity to learn from them (Whyte, 2018). The Tolmekians, representative of a colonial empire, view the natural world as a threat to humanity and advocate for burning it away to enable further land development and ensure the safety of the people. This in turn justifies the use of horrifying military violence via the Warrior to dominate nature and the Indigenous people of the Valley. *Nausicaä* therefore traces the domination of "sub-human" nature and people as the result of a colonial logic which fabricates and reinforces a hierarchical order of the world.

As we trace the idea of human, technological, and natural hierarchies in *Nausicaä,* we can see how the belief in human superiority to justify technological conquering of nature is dismantled as the Warrior fails. The wise woman of the Valley, Obaba, rejects the Warrior's unnaturalness, instead embracing Nausicaä's relationality with nature. Rejection of colonial hierarchization and domination in the film, therefore, shows how apocalyptic sf shares concepts with Indigenous sf, thus revealing how they can work together to target colonial (re)productions of knowledge which are often present in sf media.

Generational Trauma and Ongoing Apocalypse

As opposed to Euro-American sentiments of an imminent but distanced end, Tanaka (2014) describes the Japanese experience of already having endured apocalypse, similar to the experience of Indigenous peoples with settler colonialism. Therefore survival through catastrophe defines both

Japanese apocalyptic and Indigenous sf genres. In *Nausicaä,* this is shown as the Valley residents' *survivance* – survival and resistance (Attebery, 2020) – responds to both ongoing environmental degradation and colonial occupation.

While the Valley residents have learned to adapt and adjust their lifestyles to match the ecological degradation they face, the Tolmekians have not. It can be said, therefore, that while the imminent crisis faced by the dominant empire is that of environmental degradation, local populations are facing apocalyptic colonial occupation and the destruction of their culture and community. This narrative mirrors the real-world positionality and experience of Japanese *hibakusha,* who witnessed and survived the nuclear bombings of Hiroshima and Nagasaki, whose "experience of apocalypse never ends" (Tanaka, 2014, p.42). From *Nausicaä,* we can learn that the generational trauma and ongoing apocalypse faced by populations reveals an extreme adaptive capacity of these peoples to events such as environmental degradation, but that are stunted by colonial oppression. This parallel between the experience of catastrophe in Japan under US imperialism with the experience of Indigenous peoples in the Americas suggests that it is these disadvantaged populations that hold the most potential to provide solutions in today's environmentally damaged postcolonial world.

Post-Apocalyptic Futurisms: How do we deal with After?

One key feature of sf is that it offers an exploration of the future. It asks what happens if our choices – or lack thereof – produce a catastrophic result and suggests responses. Tanaka (2014) explains that 1970s-1980s Japanese apocalyptic media explored popular "long[ing] for the complete destruction of the existing order rather than reform and adjustment" (p. 47). With the colonial world order as the 'apocalypse' at hand, this echoes Fanon's (1963, p. 35) call for a "total, complete, and absolute" break from colonization. Thereby, in analyzing the end of *Nausicaä*, we can understand the dual exits from environmental degradation and colonial occupation which the film suggests, and the alter-humanist perspective adopted to care and value for landscapes 'tainted' by these processes.

Nausicaä demonstrates the necessity of dismantling the dominant Western colonial worldview through Obaba's pronouncements and (re)embracing of alternative knowledge at the end of the film. Obaba rejects the Tolmekian's militaristic domination of people and nature by proclaiming that there is "no reason to live if [their] lives depend on a monster like [the Warrior]" (Miyazaki, 1984, 1:48:22). By revealing the colonial violence with which the Tolmekian empire interacts with the world and having the protagonists reject its logic, *Nausicaä* shows that the path to true peace and justice requires decolonization of thought and the undermining of colonial hierarchization. This is furthered as the film's happy ending depicts the Tolmekian warships leaving and the Valley residents returning to their traditional

practices. Therefore, *Nausicaä* underscores that decolonization requires a dual dismantling of oppressive systems and a restorying of Indigenous worldviews and practices.

Nausicaä additionally challenges the abandonment of tarnished landscapes as the film shows an alter-human connection and fostering of postcolonial landscapes despite their irreversible damage. Despite the toxicity of the Jungle, the end credits scene shows it as a place of wonder which must be cared for. As more people enter the Jungle, and a non-toxic tree is shown to begin to grow under the forest cover, the film presents the landscape as a redeemable and resilient space. *Nausicaä* is a hopeful film which shows the potential for a future beyond colonialism and environmental degradation, where local knowledge is valued and landscapes are cherished.

Through its resolution of catastrophe, *Nausicaä* shows the intertwined nature of colonialism and environmental degradation, demonstrating that both systems must be resisted and dismantled simultaneously. In addition, the film addresses the landscapes which will continue to be 'tainted' by these systems beyond their formal destruction and argues that they must be cared for regardless. This vision, therefore, can be understood as a *futurity of liberation* where the film utilizes the subversion of the sf genre as a mechanism to advocate for the actualization of decolonization. Therefore despite the film's 1984 release, the message of *Nausicaä* resonates with the issues of today's postcolonial world, reflecting on the challenges imposed by unclear breaks from colonialism, and proposing a holistic reconstruction of knowledge as imperative for decolonization.

Conclusion

Hayao Miyazaki's *Nausicaä of the Valley of the Wind* provides a powerful critique of settler colonialism and environmental degradation while offering a vision for decolonial futures. The film elucidates to the viewer that the destruction of nature is closely tied to systems of colonial domination. By drawing parallels between the experience of apocalyptic destruction and Indigenous survivance, *Nausicaä* emphasizes the importance of resisting systems that cause environmental and cultural harm. The ontological violence enacted by colonial systems highlights the importance of environmental stewardship and Indigenous knowledge systems within ideations of space. Thus, the film's resolution rejects colonial occupation and instead envisions a liberated future, challenging colonial knowledge and offering an alternative to destructive ideologies of extraction and exploitation. Additionally, the film does not shy away from the ongoing trauma of damaged landscapes, suggesting that even in the aftermath of ecological collapse, these environments must be nurtured and valued rather than abandoned. Ultimately, *Nausicaä* illustrates that resisting environmental degradation requires resistance to colonization in all its complex intertwined forms.

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Between Borders and Histories: Refugee Settlerhood, Forced Migration, and Decolonized Belonging

Ambihai Akilan

This paper explores the complexities of refugee settlerhood, examining the intersection of forced migration, settler colonialism, and the implications for Indigenous communities. Through the lens of personal experiences as a Tamil-Canadian, the tension between being both a product of colonization and a participant in the settler colonial project comes into focus, highlighting the differential experiences of migration that shape varying degrees of complicity. Using the insights of scholars like Xavier (2022), Wiegel et al. (2019), and Ellerman & O'Heran (2021), the paper critiques the commodification of citizenship and belonging in settler states and examines how refugees and migrants, despite fleeing violence and persecution, contribute to the ongoing dispossession of Indigenous peoples. The paper argues that understanding settler complicity requires a shift away from binary notions of guilt and innocence, advocating instead for a framework of decolonized belonging. In this framework, belonging is redefined through Indigenous sovereignty, relational accountability, and active engagement in dismantling settler colonial structures. Ultimately, confronting colonial legacies and working toward transformative justice for Indigenous communities necessitates a collective responsibility, with refugee settlers playing a critical role in this process.

I have an accent in every language I speak. My tongue stumbles over the 'zh's in Tamil and trips over the 'r's in English. Being Tamil-Canadian is almost a contradiction in itself: the colonized and the colonizer, stuck together begrudgingly, using a hyphen for sello-tape.

From Tamil Eelam to Turtle Island, the war raging in my home(s) started long before I arrived on Earth – families displaced and scattered years before I took my first breaths. My existence in this country is both the product and the means of violence; an existence dressed in complicity to a genocidal state and drenched in the hand-me-down memories of my homeland.

What is it called when you occupy someone else's home after being exiled from yours? Is it still 'refugee'? Is it still 'asylum-seeker'? Is it still 'migrant'? My personal experiences designate me as a child of the colonizers as much as I am a child of the colonized, a living paradox caught between the legacy of displacement and the unsteady ground of a settler's existence.

This understanding of my identity has forced uncomfortable questions and challenges, chief among them being how the experience of forced migration contributes to the complexities of refugee settlerhood

and the implications for Indigenous communities. While immigration is often perceived as being characterized by agency and choice, that choice is frequently constrained by the structural legacies of colonialism and neocolonialism. Adverse material conditions in the Global South, shaped by histories of exploitation and ongoing geopolitical inequities, create circumstances where migration becomes less of a true choice and more of necessity. Refugee settlerhood, on the other hand, emerges from the overtly involuntary nature of displacement, driven by war, persecution, and immediate threats to survival. Though both remain deeply implicated in the project of the settler colonial state, this distinction is critical, as it challenges dominant narratives of migration, belonging, and integration within a decolonized framework. To fully unpack this in this paper, the causes and consequences of forced migration will be fleshed out, along with its subsequent implications for the varying degrees of settler complicity, which will set the stage for a reimagined, decolonized belonging that confronts these tensions head on.

Causes and Consequences of Migration

Wiegel et. al's (2019) mobilities approach introduces a nuanced perspective on forced migration, emphasizing the relational and differential nature of mobilities and immobilities, especially relevant in the context of migration pressures induced by environmental change (p. 5). Wiegel et. al (2019) ask,

"when and why do people decide to move—or not to move—in response to environmental changes? How do they cope with migration pressures? Where do they move, under what conditions, and who can or must stay behind?" (p. 1). This approach, influenced by Cresswell and Sheller's (2018) conceptualization, views mobilities and immobilities as inseparable and co-dependent, underscoring the diversity and unevenness in people's abilities and aspirations to move or remain stationary, considering the "when, how, and under what circumstances" of these choices (p. 51, cited in Wiegel et. al, 2019, p. 5). This approach challenges the often rigid distinction between forced and voluntary migration by illustrating how choices around movement are deeply shaped by structural conditions. Economic hardship, environmental pressures, and political instability, often rooted in colonialism and neocolonialism, create circumstances where the line between choosing to migrate and being forced to do so becomes increasingly blurred.

However, this is not to conflate the two. Becker and Ferrara (2019) present forced migration as an important and distinct trajectory from voluntary migration, one that is marked by life-altering experiences (p. 2). Forced migration extends beyond a mere change in geographical location (Becker and Ferrara, 2019, p. 2). It is an experience characterized by the loss of possessions, physical and emotional threats endured at origin, en-route, and usually even at the destination of "safety," and a transformation that transcends the act of "changing places" (Castles, 2000, p. 3).

Gibney (2018) writes that "refugees are people who have been displaced from the communities, associations, relationships, and cultural context that have shaped their identity and around which their life plan has hitherto been organised" (p. 6). As a result, forced migration is not just the movement of people, but a transformation of an individual's entire world.

Carens (2013) writes that the moral right to a safe place to live is "not a moral entitlement to choose where that will be" (p. 216). This distinction is paramount in the analysis of refugee settlerhood, where individuals who have no choice but to flee also have no choice but to be complicit in the settler colonial projects of their destination countries. The above insights form the groundwork for understanding the intricacies of displacement, complicity, and belonging inherent to the narrative of refugee settlerhood, but does this lack of agency absolve refugees of any culpability?

Settler Complicity and the Question of Differential Settlerhood

Furthering the insights provided by the above scholarship, economic disparities, forced migration, and settler complicity help create a more nuanced understanding of immigrant settlerhood. Within the context of settler complicity, Xavier's (2022) insights offer an understanding of the dynamics of integration and its inherent ties to settler colonial norms (p. 2). Integration, as Xavier (2022) posits, is predicated on

adherence to Canadian norms, a process linked to the settler colonial impetus (p. 2). This assimilative journey is not only about adopting cultural practices but also involves a more insidious facet: acting white. The performance of whiteness, rooted in methodological nationalism, becomes a tool of erasure against Indigenous peoples (Xavier, 2022, p. 16). This erasure is ingrained in the settler colonial impetus, where fidelity to the racial settler state necessitates conformity to norms that, intentionally or not, contribute to the elimination of Indigenous cultures and histories. As Stanley et. al (2014) write:

> We need to remember that the need, the anxiety, and the desire to belong in a racist society may lead on the part of racialized immigrants to gestures of assimilation and support for dominant structures and ideologies of settler society … The play of xenophobia and xenophilia in nationalist discourses may, through the anxiety it produces, often ensure conformity into the dominant order on the part of immigrants (2014).

Ellerman and O'Heran's (2021) historical lens reveal the treatment of citizenship in settler colonial states, presenting citizenship not as a universal entitlement but as a selectively extended privilege (p. 27). The historical perspective exposes a pattern of conditional citizenship, particularly concerning Indigenous people. In settler colonial states such as the United States, Australia, and Canada, citizenship

has historically been wielded as a tool for assimilation (Castles, 2000, p. 280). The Gradual Civilization Act of 1857 in Canada, highlighted by Ellerman and O'Heran (2021), exemplifies a deliberate attempt to encourage the assimilation of "educated Indians" into settler society (p. 27). The conditional extension of citizenship came at a high price: the surrender of legal Indian status, tribal membership, and the right to live on reserve lands, echoing Xavier's (2022) caution against the erasure of Indigenous peoples through assimilative practices (p. 16). Even in cases of Indigenous refusal, the colonial state responded with amendments to the Indian Act, enforcing the compulsory enfranchisement of specific groups (Ellermann & O'Heran, 2021, p. 27). This historical treatment of citizenship not only mirrors persistent efforts to erode Indigenous identities and sovereignty but also sets the stage for a larger examination of settler complicity and the implications of this enfranchisement. What does it mean that the benefits of citizenship are so differential? That the promise of "safety" comes packaged in the granting of citizenship to migrants and refugees, while the same status is one that effectively strips Indigenous peoples of their cultural and territorial rights?

Xavier's (2022) call to bring attention to the material realities of lands that refugees settle opens a window into the hidden dimensions of resettlement. As refugees seek asylum and build new lives, they become participants in a narrative deeply entwined with settler complicity.

The link between settler complicity and the dispossession of Indigenous peoples becomes evident in the very act of establishing new homes, labour that supports exploitative industries, or even the consumption of goods produced through this system, highlighting the connections between choices that might seem individually unintentional and broader structural injustices.

Wiegel et. al (2019) mobilites approach and Becker and Ferrara (2019) bring a crucial context to this discussion of settler complicity. The consequences of forced migration, with its lack of agency, can become a lens through which we scrutinize settler complicity. Does this hierarchization of harm as a result of agency/choice embedded in the different experiences of migration correlate to an equal amount of culpability? Does a discussion of culpability even matter? Whether settlers' contributions are forced or voluntary, their settlement on contested lands and financial contributions to the state intertwine them in the ongoing settler colonial project (Becker and Ferrara, 2019, p. 647). Institutions like police forces, prisons, and child welfare systems within the settler colonial state remain beneficiaries of settlers' contributions (Chatterjee, 2019, p. 645; Ellermann & O'Heran, 2021, p. 30). It also takes more overt forms than just existence on stolen lands, including the admittance of the refugee settlers into parliaments, into the seats of power that control resources and decision-making structures, creating structural barriers that limit Indigenous access to land and impede the exercise of self-governance. Thus,

understanding settler complicity and the act of resettlement, even when driven by the legitimate pursuit of safety, becomes a fraught endeavour with implications for Indigenous communities (Xavier, 2022, p. 15; Chatterjee, 2019, p. 645).

McAdam and Xavier's (2021) appeal to acknowledging settler complicity in the ongoing genocide of Indigenous people forces confrontation with uncomfortable truths (p. 71). Settlers, regardless of race/ethnicity, are deeply implicated in the processes that perpetuate the White supremacist nation-state. The plea is especially poignant for refugee settlers, who, despite being forced to flee their homelands, remain beneficiaries of the settler colonial project while simultaneously being victims of a greater imperial project (McAdam & Xavier, 2021, p. 73).

Understanding settler complicity and the differential experiences of settlerhood reveals the ways in which refugee settlers, despite their own histories of displacement and marginalization, become entangled in the settler colonial project. This entanglement is not merely symbolic; it has material consequences that sustain structures of Indigenous dispossession. While the examination of settler complicity forces an acknowledgment of these uncomfortable truths, it also necessitates a shift in perspective, one that moves beyond the binary of guilt and innocence toward a commitment to transformative justice. This shift leads to the question of how settlers, particularly those who are themselves displaced, can meaningfully engage with the responsibilities that come with living on stolen land. The answer lies in reimagining belonging itself. Rather than being measured by the extent of assimilation into the settler state, belonging must be redefined within a decolonial framework, one that centers Indigenous sovereignty, relational accountability, and the active dismantling of settler colonial structures.

Decolonized Belonging

Ellerman and O'Heran (2021) write that:

> As long as settler colonialism persists, newcomers – whether racialized or white, forced or voluntary – by virtue of their settlement on contested lands and their tax payments to the state are implicated in the settler colonial project which remains premised on the denial of Indigenous sovereignty and self-determination. Recognizing the shared complicity of long-established settlers and newcomers alike in perpetuating settler colonialism places a joint responsibility on all non-Indigenous members of society to confront these structures and commit to decolonization (p. 30).

In an effort to confront these structures, they argue for an emphasis on decolonized belonging, challenging the conventional metrics of integration, and calling for a paradigm shift that respects Indigenous sovereignty and self-determination (p. 30).

Rather than success or failure being measured by mere assimilation into settler society, it should be measured against the standard of decolonized belonging, "where settler states and settlers respect Indigenous sovereignty, laws, and legal traditions, where treaties are upheld as agreements between sovereign nations, where new treaty agreements grow out of Indigenous stories, and where relations with the land are based on shared stewardship and reciprocity" (Ellerman and O'Heran, 2021, p. 30).

The concept of decolonized belonging challenges the foundational assumptions of integration by shifting the focus from settler-defined measures of inclusion to Indigenous-led frameworks of relationality and responsibility. If settler colonialism is sustained by the continued dispossession of Indigenous lands and the erasure of Indigenous governance, then true belonging cannot exist without a commitment to reversing these processes. Decolonized belonging demands more than passive acknowledgment; it calls for active engagement in dismantling colonial power structures, upholding Indigenous legal traditions, and honoring treaties as agreements between sovereign nations. It is a paradigm that necessitates the repatriation of Indigenous land and life, rejecting the settler colonial impulse to define belonging through assimilation. There are many steps in between the recognition of refugee settlerhood and decolonized belonging, but by reframing belonging in this way, we move beyond narratives of complicity and toward a collective responsibility for decolonization, one that recognizes the obligations of all non-Indigenous peoples, including refugee settlers, in the pursuit of justice and Indigenous self-determination.

Conclusion

The narrative of my existence, along with many others, is a journey marked not only by personal displacement but by the historical legacies of violence and complicity. My presence in this country, divided between the borders that define me, is both the product and the perpetrator of ongoing injustices. The stories of refugees and Indigenous peoples do not run parallel, they intersect, tangle, and complicate. By finding home in occupied land, our presence is shaped by the same forces that sought to erase us elsewhere. The system that binds us, migrants, settlers, Indigenous peoples, is not accidental. It is deliberate and designed to sustain itself on erasure.

But acknowledging complicity is not the same as surrendering to it. If the settler colonial state thrives on our silence, then refusal must begin with reckoning, with the histories we inherit, the lands we stand on, and the futures we help shape. Decolonized belonging is the beginning of imagining a commitment to unsettling the systems that uphold violence, to learning from the nations whose sovereignty predates these borders. To acknowledge complicity is not to centre absolution; it is to start to think critically about the futures we choose to build and the legacies we choose to leave behind.

Acknowledgements

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A Criticism of Fukushima Radioactive Water Discharge in the Lens of Environmental Justice

Ellen Wu

This paper critically examines Japan's decision to discharge treated radioactive water from the Fukushima Daiichi Nuclear Power Station into the Pacific Ocean through the lens of environmental justice. Following the 2011 nuclear disaster, the discharge process, which began in August 2023, is expected to span 30 years. While scientific studies have analyzed the ecological and radiological impacts, this research highlights the ethical concerns and distributional inequalities affecting various communities. The decision disproportionately impacts local fishers, marginalized Japanese communities, and neighbouring Pacific nations, exacerbating social and economic disparities. Additionally, the discharge has heightened geopolitical tensions, particularly with China and South Korea, raising concerns about transboundary environmental harm and the responsibilities of developed nations toward vulnerable populations. By addressing the broader implications of Japan's decision, this paper underscores the need for extraterritorial environmental obligations and cooperative international governance. It argues that the Fukushima wastewater release exemplifies the global challenges of environmental justice, where the benefits and burdens of environmental policies are unequally distributed. The findings advocate for a more inclusive approach to environmental decision-making that prioritizes fairness, transparency, and the rights of affected communities. Ultimately, this study calls for stronger international collaboration to prevent similar injustices in future environmental crises.

Introduction

The Fukushima nuclear disaster of 2011 stands as another stark reminder of the catastrophic consequences of nuclear accidents as the Chernobyl disaster fades into oblivion. Japan has made multiple controversial decisions in managing the vast quantities of contaminated water accumulated at the site. Ten years after the accident, in 2021, a globally impactful decision was made to release treated radioactive water into the ocean, despite the presence of some untreated radioactive substances, raising significant concerns about its environmental and societal impacts. In August 2023, Japan began the discharge of treated wastewater, a process expected to span 30 years (CBC, 2023). While numerous studies have researched the technical aspects of the dispersal of treated radioactive water and its ecological consequences, the perspectives of those communities affected by these decisions are overlooked in research. The lens of environmental justice provides a critical framework for understanding and addressing the distributional inequalities and ethical considerations inherent in environmental decision-making processes. I argue that extraterritorial collaboration is

essential in addressing the complex environmental justice issues surrounding the Fukushima radioactive water discharge while acknowledging the disproportionate consequences of this environmental disaster. The impact of this release may appear widespread globally, but its effects are distributed unevenly, disproportionately affecting certain communities and regions, and exacerbating international tensions between Japan and its neighboring countries. This highlights the critical importance of acknowledging and addressing extraterritorial obligations in environmental matters and human rights. It also underscores the need to promote international cooperation instead of conflicts to ensure fairness and equity in environmental justice on an international scale. Through this exploration, this paper aims to contribute to a more nuanced understanding of environmental justice obligations, global environmental equity, and extraterritorial enforcements, advocating for a more just and equitable approach to addressing environmental challenges on a global scale.

Background

Nuclear energy, known for its low-carbon emissions and potential to replace fossil fuels, has provided 11–20% of global energy needs over the past two decades, despite global fears of nuclear energy after the Chernobyl disaster (Alwaeli & Mannheim, 2022). Japan, a developed country reliant on energy imports due to limited natural resources, strategically focused on nuclear power after 1973 (World Nuclear Association, n.d.). However, Japan's vulnerability to earthquakes and tsunamis poses unique challenges as an island nation. The stability of nuclear plants is thus at risk from geological hazards, compounded by limited land and resources to mitigate potential disasters and evacuate residents: the 9.0 magnitude Tōhoku earthquake of 2011 triggered a tsunami, which damaged cooling units at Fukushima Daiichi Nuclear Power Station, causing reactor meltdowns and significant radioactive material release that ultimately led to the contamination of up to 1,500 km^2 of land and the evacuation of over 160,000 residents (Hayama et al., 2013).

In response to the disaster, measures were taken immediately after the power station exploded, to prevent further meltdowns and explosions, including spraying over 1.3 million cubic meters of seawater onto the cores. This made it a challenge to manage and treat water contaminated with radionuclides due to water used for cooling the nuclear cores coming into contact and being permeated by radionuclides (Nogrady, 2023). Tokyo Electric Power Company (TEPCO) constructed thousands of stainless steel tanks on-site to store and treat wastewater, reducing its radioactive content, and the Advanced Liquid Processing System (ALPS) was developed to remove most radioactive contamination, with ongoing efforts to minimize daily contaminated water production (IAEA, 2023). However, long-term storage of an accumulation of water from the nuclear plant in tanks is costly and challenging to manage in limited spaces, posing extreme economic challenges to both

TEPCO and the Government of Japan. In 2020, TEPCO proposed vapour release and controlled sea discharges as practical options, given ALPS-treated water's safety after removing 62 radionuclides, and the plan was recognized by the International Atomic Energy Agency as "technically feasible" (IAEA, 2023). The Government of Japan announced plans for controlled discharges over 30 years, despite protests from neighbouring countries and local communities, sparking environmental justice concerns (Global Times, 2023).

The decision to discharge treated radioactive water into the ocean represents a global environmental injustice, as ocean currents ensure that its impacts will be felt by people worldwide, transcending national boundaries and disproportionately affecting vulnerable coastal communities and ecosystems. Despite ALPS treating 62 radionuclides, uncertainties remain about long-term impacts given the event's unprecedented nature. While TEPCO and Japan would benefit economically, concerns about health, food safety, and environmental degradation persist locally and internationally, leading to international tensions such as the seafood ban by Chinese authorities in response to Japan's wastewater release (CBC, 2023). The global circulation of the radionuclides via ocean currents (BBC, 2023), and the long half-life of radionuclides like tritium and carbon-14 concentrated within the food web (Nogrady, 2023), highlight potential impacts lasting thousands of years on both humans and ecosystems, signifying a unique environmental injustice case with far-reaching consequences.

Environmental Injustice to Local Humans and the Ecosystem

The impacts of releasing treated radioactive water into the ocean were particularly felt in Japan, especially in regions near Fukushima. The debate surrounding the environmental injustice of the nuclear disaster and subsequent wastewater release emerged in 2011 when the Japanese government evacuated residents from high-risk areas around Fukushima. The fallout from the nuclear accident disproportionately affects different demographics based on age, social status, economic class, and gender, a disparity that has been exacerbated by the government's handling of the crisis (Schneider, 2023). Residents, especially those near the disaster site, have faced marginalization, displacement, and hardships due to inadequate and delayed government responses, leading to a low return rate after evacuation, with mostly elderly individuals returning while younger families remain hesitant due to insufficient infrastructure and limited job opportunities in Fukushima (Buesseler et al., 2017). The situation persists with the treated radioactive water discharge, and gender has also played a significant role in this environmental injustice within the context of Japan's patriarchal society, as the political and economic elite, driven by a culture of hegemonic masculinity, downplayed the risks of radiation—portraying them as negligible for everyone—and disregarded

the valid concerns of women regarding radiation risks (Schneider, 2023). Women who expressed apprehension or refused to consume Fukushima products as a show of solidarity were often dismissed as "emotional, irrational, and uncooperative" (Schneider, 2023). Furthermore, forced evacuations and the lack of financial support have intensified social tensions and mistrust between residents and the government, while concerns over the safety of Fukushima agricultural products have widened the economic gap between urban and rural areas, exacerbating social imbalances and unrest across Japan (Polleri, 2022).

Despite the far-reaching socioeconomic consequences of the management failures following the 2011 Fukushima nuclear disaster, institutions have not learned their lesson. TEPCO and the Government of Japan's decision in 2020 to discharge treated radioactive wastewater has thus tarnished the institutions' reputations and led to widespread discontent. While TEPCO, the Government of Japan, and the International Atomic Energy Agency (IAEA) asserted that ALPS-treated water poses minimal risk to human health at low doses, local fishers in Fukushima whose livelihoods depend on the ocean remained deeply concerned, fearing that official assurances would not protect them from harmful rumours about the safety of their catch, especially in light of the seafood ban by Chinese authorities (The Guardian, 2023). In essence, the decision to discharge treated radioactive wastewater has far-reaching consequences that extend beyond the

environmental and health realms, impacting Japan's economic standing and global reputation in trade and commerce due to the lack of consumer trust in their products.

The release of radioactivity following the 2011 nuclear disaster, while estimated to be less than that of the Chernobyl incident, has left lingering uncertainties regarding its long-term impacts on humans and the ecosystem. Accumulation of contaminants within the food web can offer insights into potential effects, as evidenced by studies such as those conducted by Hayama et al. (2013). Their research revealed significantly elevated muscle radiocesium levels in Japanese monkeys residing in Fukushima's forested areas with high soil contamination. These levels persisted for at least a year post-2011, highlighting the accumulation effect of radionuclides in the food web due to organisms' metabolic processes and the slow elimination of contaminants (Hayama et al., 2013). Although dilution in seawater may reduce immediate risks for humans, concerns arise about the long-term accumulation of radionuclides throughout the food web. Radionuclides such as tritium and carbon-14, with their extended half-lives and persistence in ALPS-treated water, pose risks of bioaccumulation (Nogrady, 2013). This is particularly alarming for communities living near the ocean, as well as the country of Japan itself, as marine products comprise a significant portion of their diet. Furthermore, the impact on other marine organisms, especially those at lower trophic levels, remains a critical concern. The decision to discharge radioactive water thus raises environmental justice issues for the oceanic ecosystem and underscores the

interconnectedness of humans and the natural world, both of which face significant consequences from these actions.

International Impacts and the Geopolitical Tensions Behind the Event

The announcement of plans to discharge radioactive treated water into the ocean has sparked numerous studies examining the potential impact on global waterways. A study using a three-dimensional global model found that untreated tritium and other radionuclides from the Fukushima Daiichi Nuclear Power Plant would disperse through Japan's coastal waters and reach the Pacific coast of North America within 4–5 years, highlighting the interconnectedness of oceanic systems and the inevitable global distribution of radioactive water, regardless of its initial concentration levels (Zhao et al., 2021).

The ramifications of discharging treated radioactive water extend beyond environmental concerns, touching on international relations and economics. Neighbouring countries like China and South Korea have voiced firm opposition, citing significant risks to their coastal environments and fishing sectors. This opposition has sparked public demonstrations, intense social media backlash, and growing anti-Japanese sentiment, intensified by the unresolved trauma of Japan's imperial past in Asia, ultimately escalating regional tensions (AP News, 2023). Moreover, the coastal communities, mostly the developing countries along the Pacific Rim, heavily reliant on marine resources for their livelihoods and food security, stand to bear disproportionate economic burdens (World Bank Group, 2024). In 2022, 41% of world fisheries and aquaculture production of aquatic animals were produced in the Pacific Ocean, with Asian countries excluding China producing 34% of the total output of aquatic animals (FAO, n.d). In many developing Asian countries, the lack of economic support and infrastructure, combined with the prevalence of small-scale artisanal fishers and fish farmers make these coastal communities particularly vulnerable to changes in the Pacific Ocean. Studies focusing on economic and trade imbalances resulting from the discharge predict economic downturns in affected regions, which could exacerbate existing trade gaps between developed and developing nations, diminishing overall production values and impacting countries like Indonesia and Vietnam (Guo et al., 2022). The decision to discharge treated radioactive water carries wide-ranging consequences, from environmental impacts to economic repercussions and international relations, highlighting the complex interconnectedness of global systems and the need for cooperative solutions to address such challenges.

The United States' seemingly indifferent stance on the discharge of radioactive water has raised concerns across the Pacific Rim. The U.S. Department of State's expression of satisfaction with Japan's handling of the issue, citing safety, transparency, and science-based processes—reflects deeper

geopolitical and socio-economic dynamics at play (U.S. Department of State, 2023). A key factor shaping U.S. policy is its enduring strategic alliance with Japan, established during the Cold War and maintained partly to balance China's growing influence in Asia. This partnership contributed significantly to Japan's position as Asia's most developed economy before China's economic rise. Furthermore, environmental racism plays a pivotal role in shaping IAEA and Japan's decision and the U.S. response. As highlighted by Pulido (2017), marginalized communities and regions often serve as "sinks" for pollution and environmental hazards. In this context, developing countries in Asia that heavily rely on ocean fisheries are perceived as an acceptable "sink" for radioactive water discharge, despite the potential harm to ecosystems, human health, and, ultimately, the environment of the United States. Located on the other side of the globe, the U.S. faces minimal direct consequences, allowing it to sidestep environmental justice concerns—an implicit form of racial violence within environmental policies. The support supplied by the superpower further condoned Japan's decision and action in radioactive water discharge.

Environmental Justice Obligations and Negotiations

The Fukushima nuclear disasters have reignited discussions on the dangers associated with nuclear power development and the aftermath of such catastrophes, particularly concerning environmental impacts. The decision to discharge radioactive water into the sea following the Fukushima disaster has sparked criticism and calls for a re-evaluation of nuclear energy development. One key criticism questions the financial capacity of even developed nations to adequately address the consequences of nuclear disasters, raising concerns about the prudence of further nuclear energy development without a thorough evaluation of its risks and mitigation strategies. It also sends a troubling message, suggesting that adverse effects—potentially beyond a nuclear-generating state's treatment capacity—can be shifted onto exposed populations and the environment (Li & Lyu, 2022). This decision underscores the issue of environmental justice, where marginalized communities, developing countries and ecosystems bear the brunt of hazardous practices.

Moreover, the ongoing expansion of the nuclear energy industry and its actual contribution to reducing carbon emissions add complexity to the debate. The decision to dispose of radioactive water into the ocean could inadvertently encourage further nuclear energy development without careful consideration. Nuclear power plants are no longer exclusively present in developed countries only or in those with strong economic power and expertise to manage such resources. According to the IAEA (2025), Ghana, a West African nation currently facing an economic crisis, has completed the site selection process for its first nuclear power plant. If a developed country like Japan, is significantly strained by the immense costs of managing a nuclear leak, eventually

leading it to prioritize financial concerns over environmental protection, then the continued development of nuclear power plants should be approached with greater caution. The perceived minor sanctions for harming exposed populations and the environment may incentivize the industry to prioritize economic interests over comprehensive environmental stewardship.

The imposition of a major "sanction" in this environmental justice issue is exemplified by China's ban on seafood imports from Japan, a move that Japan has strongly criticized for significantly affecting its economic interests. Furthermore, China is actively pursuing amendments to fishery legislation to create a complete extraterritorial effect, which stems from Japan's action of discharging radioactive water, which indirectly infringes on China's rights and interests regarding marine fishing resources, based on the principle of freedom (Li, 2023). China's stance on this issue reflects its position as the world's largest fishing nation with 36% of the worldwide production, where the fishery industry provides vital marine resources while supporting its countless coastal communities' livelihoods (FAO, n.d). The decision to discharge radioactive water also poses critical harm to China's economic interests. Li (2023) advocates for changes in management standards, the establishment of comprehensive extraterritorial effects, and enhanced administrative support and monitoring of harm. These tasks are essential not only for China but also for other countries with significant fishery industries, as they grapple with the environmental injustice challenge presented by the discharge of radioactive water.

In addition to advocating for domestic law reform, China is actively seeking a legal foundation to challenge Japan's decision regarding the disposal of radioactive water. Li and Wang (2023) highlight that a country's legal responsibility to compensate for environmental damage resulting from specific activities has been consistently affirmed by the international community, forming an essential component of international customary laws. This implies that countries experiencing significant environmental challenges due to this event have a legal framework to pursue compensation if needed. However, the authors suggest that fair, antecedent bilateral negotiations between countries could prevent the escalation of environmental issues into complex political matters (Li & Wang, 2023).

From a geopolitical standpoint, it's unlikely that Japan would welcome the formation of an alliance among Pacific Asian countries united in seeking reparations from Japan regarding ecological and environmental justice concerns. This reflects the potential for diplomatic tensions and complexities arising from the fallout of Japan's actions regarding radioactive water disposal.

Limitations and Difficulties in Addressing this Environmental Justice Issue

While there is a legal foundation for seeking compensation for Japan's disposal

of radioactive water, the enforcement of environmental justice remains a challenge. Environmental justice issues are often intertwined with human rights violations, as they disproportionately affect marginalized groups and nations. The crucial intersection of environmental justice and human rights underscores the broader implications of human rights obligations, especially extraterritorial obligations in environmental affairs, as environmental injustices transcend national borders (Yu & Xu, 2023).

The complex interplay of ocean current dynamics, territorial biases in human rights, and the lack of robust extraterritorial enforcement in environmental laws creates significant challenges in addressing the environmental injustice and global consequences of releasing radioactive water into the Pacific Ocean. Furthermore, the involvement of international tensions and complex geopolitical dynamics adds a layer of political complexity to the situation, making it more than just an environmental justice matter in practice.

Conclusion

This case study discusses Japan's decision to discharge treated radioactive water from the Fukushima Daiichi Nuclear Power Station, analyzing the environmental injustice present both domestically and internationally. The discourse extends to the environmental justice responsibilities of countries and the negotiations between them, recognizing the challenges and constraints in enforcing extraterritorial environmental justice and human rights, notably due to the intricate fluid ocean currents and geopolitical dynamics inherent in this issue. The study underscores that environmental injustice, seen as state-sanctioned violence, significantly influences the complex environmental justice issues surrounding the Fukushima radioactive water release. While the impact of this discharge may appear widespread globally, its effects are unevenly distributed, disproportionately impacting specific communities and regions. This highlights the critical need to acknowledge and address extraterritorial obligations in environmental affairs and human rights to uphold fairness and equity in global environmental justice.

International cooperation is crucial for effectively addressing complex environmental challenges and upholding environmental justice on a global scale. By working together, countries can pool resources, share expertise, and coordinate efforts to tackle issues that transcend national borders. On environmental issues, it is also important to promote extraterritorial obligations, premised on non-interference in the internal affairs of other States. This entails recognizing that environmental impacts often extend beyond national boundaries, and therefore, countries have a responsibility to address these impacts even if they occur outside their territory. This approach helps ensure fairness and equity in environmental decision-making and response mechanisms.

Acknowledgements

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Trail Six Volume 19 Authors

Aidan Huang

Aidan (he/they) is a third-year Human Geography student from Singapore, doing a minor in GIS and the Climate Studies Certificate. A high school Geography class on David Harvey is what really drew him to the discipline, and now he's interested to further think about political economy, political ecology, and decolonial feminisms. He also loves hyperpop, reading (manga, theory, anything obscure), writing (who knows what), climbing and looking at rocks (unfortunately any knowledge of rock types had all gone out the window after second year).

Ambihai Akilan

Ambihai (she/her/அவள்) is a second-generation Tamil-Canadian, fourth-year student in the Science Po Paris/UBC Dual Degree from Toronto. At Sciences Po, she majored in Politics and Government with a minor in Law, at UBC, she is majoring in Human Geography with a minor in Informatics. Outside of school, she is the Editor-in-Chief of the Tamil Academic Journal and an Advocacy Officer with People for Equality and Relief in Lanka. Interested in human rights, transitional justice, and immigration, she also loves laughing, geopolitics, and a good metaphor.

Catalina Garcia

Catalina (she/her) is a recent graduate from UBC where she majored in Psychology and minored in Urban Studies. Growing up in Manila, Philippines, she has always been fascinated by how cities function, and is passionate about urban planning and building sustainable cities & communities. She currently works full-time at BC Housing, focusing on developing housing solutions in high-needs areas like Vancouver's Downtown Eastside. In her free time, she enjoys exploring new restaurants and pursuing her creative interests like graphic design, illustration, and crochet.

Ellen Wu

Ellen (she/her) is in her final term at UBC. Over the past two years, she served as an editor for Trail Six. Currently pursuing her second degree in Geography, she is majoring in Environment and Sustainability (E&S) and minoring in Geographic Information Systems (GIS). Last semester, Ellen completed a co-op term with the BC Ministry of Agriculture, where she gained valuable hands-on experience. She continues to work part-time as a contractor with the Partnership for Water Sustainability in BC. In her free time, Ellen is an avid fan of Overcooked and enjoys reading about history.

Hannah Swearingen

Hannah (she/they), is delighted to be an author for Volume 19 of Trail Six. Previously an editor for the journal (Volume 18), Hannah is a third year Geography: E&S student minoring in GIS. Co-authored by peers Fu Otani, Sara Siddiqui, and Ekem Dhesi, Hannah's contribution to this volume is a snapshot of her research interest in Indigenous posthumanisms, decolonial futurities, and their representation in media. Additionally,

she is passionate about environmental justice advocacy and climate change education. In their free time, Hannah enjoys gardening, hiking, reading, and pottery-making.

Jacob Ereshefsky

Jacob (he/him) is a recent graduate from UBC in Human Geography and Urban Studies. His academic and professional interests are in city planning, with a focus on urban environmental justice and social infrastructure. He is currently working as a Research Assistant on a climate change, migration, and pyschosocial health project with UBC's Dr. Jemima N. Baada. Outside of his work, Jacob can usually be found in the mountains backpacking, cross-country skiing, or going on another nature adventure he is underprepared for.

Joshua Bransford

Joshua (they/he) is majoring in Political Science and Human Geography at UBC. They are interested in the relationship between neoliberal globalization, the military-industrial complex, and urban (de-)development, with a particular focus on megaprojects, circulation infrastructures, and regimes of socio-spatial segregation. Joshua is also a research assistant with the Office of Regional and International Community Engagement and the Centre for Community Engaged Learning, as well as a community organizer. Other niche obsessions include 1970s German electronic music and growing plants from kitchen scraps.

Matthew Phan

Matthew (he/him) is a third-year Vietnamese-American settler studying Human Geography and English Language & Literature. His recent work has been motivated by theorizing more-than-terrestrial spaces (i.e. oceanic, atmospheric, and digital) as a means to understand and speculate beyond landed, extractive place-making practices of settler-colonial capitalism. Outside of the classroom, he can often be found on minor transit adventures or scribbling strange poems on the verso of discarded sheets of scrap paper.

Thomas Kroeker

Thomas (he/him) is a recent graduate from UBC in Human Geography with and Economics minor. His research interests center on disrupting neoliberal supply-side housing affordability ideologies, and analyzing emerging growth coalitions and their role in defending capital and gentrification in the age of technologized neoliberal globalization. He enjoys partaking in local activism in Vancouver, and in his spare time you can find him at the beach or in nature, or road tripping to as many interesting small towns and places as possible.

Daniel Blackmore

Daniel Blackmore (he/him) is a fourth-year student majoring in Urban Studies with a minor in Geographic Information Systems and Computation. Specifically, he is interested in equitable public policy, the global political economy, and the just transition. In the future, Daniel would like to pursue a career in urban planning and plans on one day pursuing a masters of community and regional planning. In his free time he takes interest in cooking, exercising, and painfully clumsy ukulele playing.

Gurleen Bhatti

Gurleen Bhatti (she/her) is a sixth-year student at UBC majoring in Environment & Sustainability, with a minor in Geographic Information Science and Geographical Computation. Passionate about the intersection of public policy and climate resilience, she aspires to pursue a career in urban planning. Throughout her time at UBC, she has gained diverse global experiences, including two co-op terms in Japan, studying geographies of migration in the Canary Islands and the Azores, and exploring planning livable cities in Singapore. Outside of academics, she enjoys travelling, reading, and spending time with her dogs.

Isabelle Riedijk

Isabelle (she/her) is a fourth-year student majoring in Geography: Environment and Sustainability and minoring in Creative Writing. She is interested in climate justice, ecology, geopolitics, and the impacts of climate change on species diversity. Last summer, Isabelle participated in a GoGlobal exchange program where she traveled to Copenhagen, Denmark and Svalbard, Norway to study Arctic Ecology. In her free time, she enjoys painting, reading and writing speculative fiction.

Jasmine Kwok

Jasmine (she/her) is pursuing a major in Environmental Sciences with a Sustainability concentration, and a minor in GIS. Her time at UBC began in 2019, but this is her first year as a Trail Six editor. She is excited to contribute to the tapestry of student work at UBC before she graduates! Her academic interests include circular economy mechanisms and waste reduction. Outside of her studies, Jasmine is an avid reader that also dabbles in writing short stories and poetry centered on eco-anxiety.

Katelyn Croy

Katelyn (she/her) is a third-year student majoring in Environment and Sustainability with a minor in Ancient Mediterranean and Near Eastern Studies. Raised in both Hong Kong and as a settler on the lands of the Tsawwassen First Nation, she is deeply invested in how capitalism and colonialism intertwine to shape people and place. Katelyn is very excited to showcase her peers' hard work in this year's edition of Trail Six in her third year as an editor.

Louise Cham

Louise Cham (she/her) is a fourth-year English Literature student with a minor in GIS & Geographical Computation. Her interdisciplinary academic interests and love of language have led her to work on the editorial boards of *Trail Six* and UBC AMNE's *Logos Journal* during her undergraduate career, as well as become a published author with *The Garden Statuary*, UBC's undergraduate English journal. Outside of her studies, she is a voracious reader who also enjoys baking and long-distance running.

Luke Stockall

Luke is a 3rd Year Urban Studies Major, particularly interested in the path towards environmentally and economically sustainable cities. Furthermore, he is passionate about planning solutions that attempt to shift cities in this direction while simultaneously mitigating displacement, gentrification, and uneven development in urban space. Outside of school, Luke enjoys rock climbing, biking, and spending time with good friends. He is excited to help contribute to this year's Trail Six Journal!

Michelle Huang

Michelle (she/her) is a third year student in the UBC and Sciences Po dual degree programme. In the previous two years of her schooling, she pursued the Economies & Societies major at Sciences Po. In the current and coming years at UBC she plans to major in Urban Studies and minor in GIS. This is her first time editing for Trail Six; she is passionate about communicating knowledge in fields of sustainability and human migration, and loves to do so via writing in general.

Michelle Liu

Michelle is a third year student in the UBC Sciences Po Dual Degree program. At Sciences Po, she studied Political Humanities and Sociology, and at UBC she is pursuing a major in Urban Studies. She is passionate about urban planning solutions that seek to mitigate social inequities and has done work in community organizing. As a member of the UBC Social Justice Centre, Michelle seeks to combine her interests in socio-political issues with topics in Human Geography and Urban Studies.

Rebecca Lyon

Rebecca (she/her) is a 5th-year Honours Human Geography student minoring in GIS at UBC. As a member of the UBC - Sciences Po Dual Degree Program, she also holds a degree in Political Humanities with a minor in European/North American Relations. Currently abroad on an international co-op term in Awaji, Japan, Rebecca is passionate about global issues such as digital geography, geopolitics and environmentalism.

Richelle Chong

Richelle (she/her) is a 2nd-year student majoring in Urban Studies. Moving from Hong Kong to Vancouver, she was inspired by the differences in resource management and place-making to pursue a career in planning. She enjoys exploring the intersections of ageing, mobility and place-making through the interdisciplinary nature of geography. Outside of academics and her work with youth, she enjoys exploring new places and catching up with her sleep.

Ryan Ng

Ryan (he/ him) is a third-year Geographical Sciences student with an interest in applying geospatial technologies in the field of environmental management. Within the department, he has developed species distribution models for the West Moberly First Nations under the Williams Lab, and analyzed the evolution of pool-riffle sequences in Carnation Creek, B.C. In his free time, Ryan loves chasing sunsets at Wreck Beach (or any beach actually), and eating good food with friends.

Sabrina Qistina

Sabrina Qistina, a first-generation Malay-Hakka settler, is in her final year of studying Human Geography. Throughout her undergraduate journey, she has conducted research on wildfire ecology in Cambodia's mosaic forests as part of the Schwartz Geospatial Ecology Lab. Beyond academics, she leads the Alliance and Solidarity Committee of Migrante BC, a grassroots migrant organization advocating for the right to decent work. Other times, you can find her exploring natural dye printing.

Shogofa A.

Shogofa (She/Her) is a fifth-year undergraduate student at the University of British Columbia, pursuing a Bachelor of Arts in Human Geography and a Bachelor of Social Work. Her academic interests center on social justice, displacement, and community advocacy. As an undergraduate student researcher with the UBC Human Rights Collective, she has contributed to projects focused on displaced and at-risk scholars, deepening her engagement with global migration and human rights issues.

With ancestral roots in Central Asia, Shogofa brings a diverse perspective to her work, combining academic interests with personal experiences. Outside of the classroom, she enjoys photography and occasionally writes blogs and book reviews, with a particular interest in postcolonial literature that explores themes of identity, migration, and displacement.

Sophia Rottman

Sophia Rottman (she/her) is a third-year Human Geography student in the UBC-Sciences Po Paris Dual Degree Program. At Sciences Po Paris, she majored in Political Humanities with a minor in International Relations. Sophia is particularly interested in the consequences of climate change and conflict, including migration, inter-group relationships, and resource management. For the past two years, she was a volunteer on the Franco-Italian border, providing humanitarian aid to migrants. Outside of school, she can be found playing intramural soccer and knitting.

Tracy Tan

Tracy Tan (she/her) is a fourth-year undergraduate student majoring in Urban Studies and Economics from the UBC-Sciences Po Dual Degree Programme. She hails from the small but mighty island of Singapore - these experiences shape her love for rain and inter-urban dynamics, with a special interest in postcolonialism and international development studies. You will find her on the water in a kayak, or on land exploring the city on foot.

Yafa Yusupov

Yafa Yusupov (she/her) is a fourth-year student studying Environment and Sustainability. She is interested in climate action and sustainable solutions, as well as conservation ecology. Throughout her studies, she has participated in archaeological and geographical fieldwork to better understand the history of our land and how to study it. Outside of the classroom, you can find her collecting interesting rocks and taking photos on her camera.

Alina Debyser

Alina (she/her) is in her fourth-year studying Human Geography and GIS, and is the Volume 19 Editor-in-Chief. She has enjoyed being a part of *Trail* Six—as a combination of editor, author, and layout designer positions—across every year of her undergraduate degree. She is interested in cartography, volumetric and oceanic geographies, and tracing the spatial flows of materials. In her free time, Alina enjoys snowboarding and taking photos of tiny cones on tree stumps in Vancouver.

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Dr. Geraldine Pratt (Department Head)

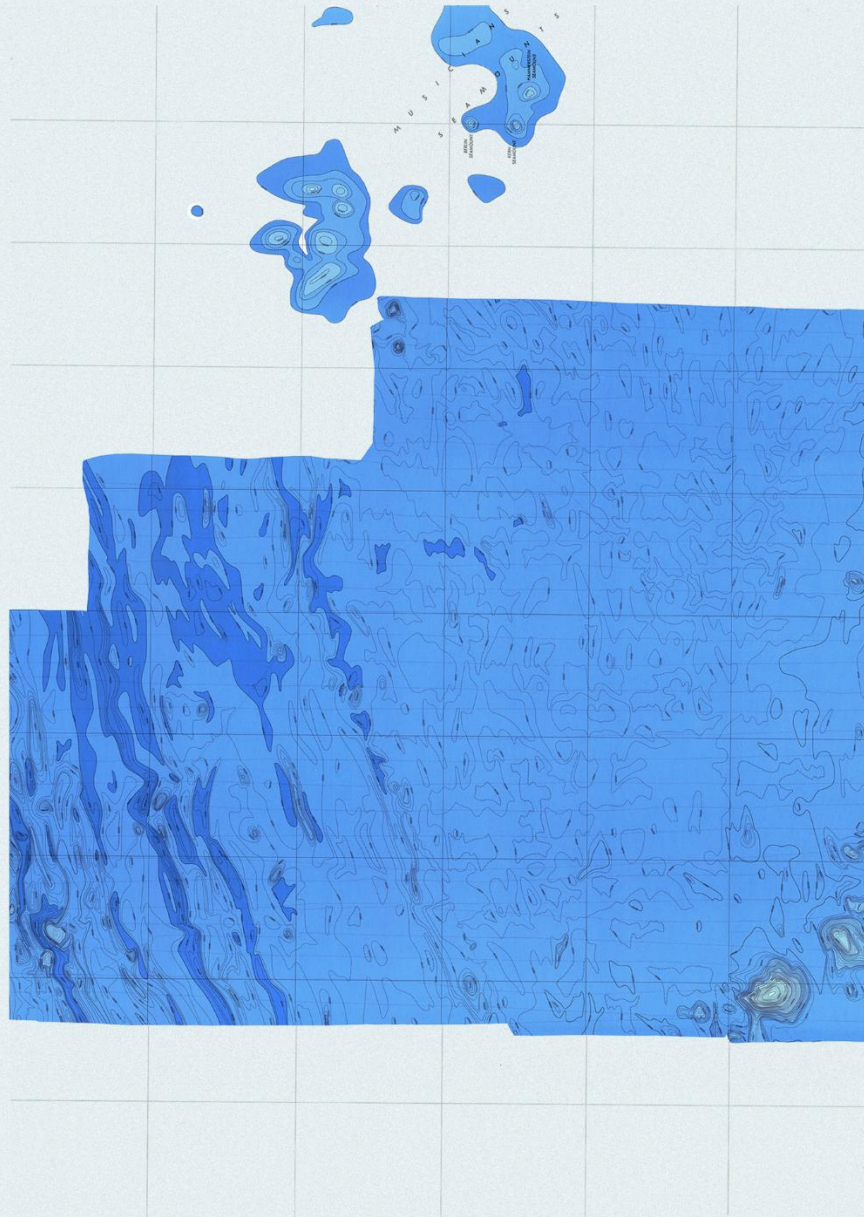Dr. Elvin Wyly

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