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ON THE CLIMATE CRISIS

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Land Acknowledgment

The Arts & Science Undergraduate Society (ASUS) acknowledges that Queen's University is situated on Anishinaabe and Haudenosaunee territory. Acknowledging the history in which Queen's has participated and benefited from colonialism, it is necessary to recognize how Politicus has benefitted as an organization. Recognizing this ancestral land involves acknowledging its extensive history, pre-dating the formation of the earliest European colonies. It also entails recognizing the profound importance of this territory for the Indigenous Peoples who have resided on it, and who persist in their connection to the land. Their customs and spiritualities have been intertwined with the land, evolving in tandem with the territory and its current inhabitants.

At Queen's, we aspire not only to address the historical wrongs but also to recognize and celebrate the enduring beauty, resilience, and potency of Indigenous culture. Looking ahead, our goal is to establish novel traditions that resonate with the ethos of reconciliation, especially as we delve into academic theory and debate. Politicus is dedicated to fostering the amplification of equity-seeking voices within our academic sphere and beyond. While academia may have the potential to oppress, create divisions, and perpetuate colonial dynamics, it also serves as a platform of empowerment—a space to explore uncharted possibilities, the unknown, and the contentious. Politicus aims to address historical grievances by offering a forum for the expression of diverse voices. Our commitment extends to fostering a non-partisan platform where all political perspectives can find expression. Acknowledging our status as a colonial institution, we understand that gaining insights into these histories is a privilege, and we encourage you to explore additional sources to further enrich your learning journey.

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Foreword

Dear Valued Readers,

This time of year always creeps up on us here at Politicus. After months of dedication and an collaboration with the Queen's Backing Action on the Climate Crisis team, we are delighted to publish five pieces exploring the connections between sustainability and global and domestic politics in an ever-changing world. As young adults, our conceptions of our future, planet, environment, and impact as human beings are more important than ever to conceptualize and examine. As Editors, we had the joy of opening up the discussion to the broader Queens community. We were subsequently delighted to see the conversation touch every facet of the political realm and incorporate the voices typically excluded from discussions about sustainability. We are thrilled by the quality and calibre of the submissions we have received for this Special Issue and would love to thank all our contributors. Julia Farkash, Aaliyah Mansuri, Tatyana Leduc, Maya Luke, and Katelin Boles: thank you so much for sharing your knowledge and interests.

We would also like to sincerely thank our dedicated team on both the editorial and management sides. Our editorial board consistently delivered quality feedback, made difficult decisions, and were at their best throughout the year. Our wonderful copyeditors met intense deadlines even during the exam season and put their heart and soul into every article. Without their hard work, this journal would not exist. Our management team moved mountains to ensure the best turnout, events, and promotion possible, and we are forever grateful. Special considerations to our assistant editor, archiving director, and lower-year interns, who have done their parts to flesh out the journal and our incredible team. Our Equity, Diversity, Inclusion, and Indigeneity Directors demonstrated an ongoing commitment to building the core tenants of EDII into all of the Politicus events and publications and ensuring all feel welcome and valued. Lastly, we would like to thank the incredible team at ASUS, especially our Journal Deputy Reagan Felds, who went above and beyond to assist Politicus every month.

We would also like to sincerely thank our outstanding professor reviewers: Dr. Taylor, Dr. Córdoba, Dr. Caron, Dr. Moore, and Dr. Goebel. It is an honour to see the wisdom and academic knowledge passed down through the vessel of Politicus.

Looking toward the future is simultaneously exhilarating and scary, and sustainability politics offer hope and caution in these times. As students and scholars of Political Science, sustainability's environmental, political, social, and economic aspects teach us to be global citizens and expand our horizons. Due to this, the Politics and Sustainability Special Edition is dedicated to our incredible team and their effort in spreading this knowledge and making this edition of Politicus a reality. Happy reading, everyone!

With our warmest regards,
Emily Poltorac and Fallon Gervais
Politicus Co-Editors-In-Chief, 2023-2024

It's a Boy? It's a Girl? It's a Conservative: How Childlessness In the Age of Climate Crisis Rocks the Political Cradle

Aaliyah Mansuri

Introduction

A novel approach to environmental conservation has found its way into the personal sphere — the bedroom, for that matter. This approach examines the new age of family planning (or lack thereof) and environmental consciousness. Many on the left wing have adopted childlessness as an eco-conscious practice, motivated by concerns about overpopulation and a desire to reduce their carbon footprints by a significant 60 metric tons.¹ This raises questions about what radical sacrifices are necessary for the sake of morality, and whether parents bear the burden of their child's carbon footprint. As climate change continues to intensify, it's not only the natural climate that will change — a political climate change is also underway. There will undoubtedly be consequences if a significant number of left-leaning individuals forgo parenthood due to environmentally conscious behaviour. This ironic eco-political twist will give rise to a future where left-wingers find themselves significantly outnumbered by those on the right.

The intersection of environmental suitability and political ideology is a central theme in this paper. This review maintains a focus on personal choices, and how they wield unexpected power in the environmental context, where even the most intimate decisions can have far-reaching implications for our planet. The question of how far individuals are willing to go in the name of environmental responsibility is a key factor in this unconventional trend. These are personal choices that raise ethical dilemmas and challenge traditional thinking about sustainability. This paper also probes the political implications of the eco-conscious childlessness movement, particularly among left-leaning individuals. The overlooked intersection of personal choices, environmental responsibility, and political ideology is thoroughly explored, along with a future where right-wing demographics significantly

outnumber those on the left. In examining how intimate decisions can influence the environment and the political landscape, this paper seeks out the complex interplay between bedrooms and ballots.

Where Do Environmental Sustainability and Political Ideology Meet?

Sustainability refers to maintaining an ecological balance while deterring a complete depletion of natural resources.² In this sense, it is inextricably linked to political ideologies that shape how societies perceive and respond to environmental challenges. In other words, the state of environmental progress is heavily contingent on the specific ideological stances of governments.

Typically, parties on the right of the political spectrum favour limited government intervention in the economy, rooted in the theoretical self-regulating nature of the free market. As such, there is widespread skepticism of environmental regulations and concerns about the economic impact of environmental policies.³ Left-wing ideologies tend to advocate for government intervention in addressing environmental issues, by promoting sustainable practices and social justice. Proponents of this ideology typically push for stricter regulations, international cooperation on climate change, and stronger protection of biodiversity, especially for marginalized communities.⁴

Researcher Vincent Tawiah offers a diffusion between political stances and their eco-frameworks, specifically in terms of environmental policy stringency. This study, spanning over two decades and encompassing numerous OECD countries, builds upon the notion that governments' responses to environmental issues are significantly shaped by their political beliefs. It reveals a substantial connection between a government's political ideology and the rigour of its environmental policies.⁵ Surprisingly, leftist govern-

1 Shannon Osaka, "Should You Not Have Kids Because of Climate Change? It's Complicated," Washington Post, December 2, 2022, <https://www.washingtonpost.com/climate-environment/2022/12/02/climate-kids/>.

2 Thea Gregersen et al., "Political Orientation Moderates the Relationship Between Climate Change Beliefs and Worry About Climate Change," *Frontiers in Psychology* 11 (2020): 1573

3 Gregersen et al., 1573

4 Gregersen et al., 1573

5 Gregersen et al., 1573

ments are found to be negatively associated with policy stringency, challenging the common perception that such governments are inherently pro-environment.⁶ This warns that excessive policy stringency may jeopardize jobs and the welfare of lower-income groups.⁷ Tawiah's contributions to environmental politics literature are substantial, shifting the focus from environmental quality to the scrutiny of policy stringency.

The Power of Personal Choices: Individual Decisions in the Environmental Context

A multitude of daily choices made by individuals holds the potential to reshape our environmental landscape. This manifests through actions such as cleaner selections of transportation, a conscientious adoption of energy-efficient appliances, responsible water use practices, the reduction of meat consumption, and waste reduction through recycling.

However, leading an environmentally conscious lifestyle has undergone a shocking development: the avoidance of procreation altogether. One in four childless adults says climate change has factored into their reproductive decisions.⁸ As population growth directly impacts the demand for natural resources, including food, water, energy, and land, unsustainable growth exacerbates resource consumption and can lead to overconsumption and resource depletion. It also has a direct impact on carbon emissions, with a larger population contributing to higher emissions and consequently climate change. Each individual's ecological footprint is linked to their lifestyle, and reproductive choices now play a pivotal role in determining the size of this footprint. Larger families typically necessitate greater resources, leading to a larger ecological footprint. Essentially, reproductive choices are not isolated from broader environmental

concerns.

Trevor Hedberg analyzes this rather recent phenomenon that climate-conscious left-wingers have adopted in "The Duty to Reduce Greenhouse Gas Emissions and the Limits of Permissible Procreation."⁹ In the context of global climate change, the severe consequences that denouncing procreation holds for both present and future generations, as well as nonhuman species, have changed the debate over individual responsibilities.⁹ The argument at hand is that individuals must reduce their carbon footprints to mitigate climate change.¹⁰ But to what extent does that obligation exist?

The answer is grounded in both consequentialist and non-consequentialist reasoning. Many philosophers argue that individuals have a duty to minimize their greenhouse gas emissions as part of their broader moral responsibility to protect the environment and future generations.¹¹ Research reveals that having one fewer child can have a more substantial impact on one's carbon footprint than any other individual action.¹² This effect is particularly pronounced in developed countries, where per capita emissions are considerably higher. Naturally, this raises resistance concerning procreative rights. For example, China's one-child policy is notorious in the West, where threat to freedom (in any form) is refuted immediately.¹³ It is in the name of these freedoms that a substantial amount of the planet's degradation can be credited to. The one-child policy famously controls China's population growth, and raises valid questions in relation to child quantity and child quality, actually advocating for more investment per child, but not necessarily contributing to sustainability by that merit.¹⁴ It is important to note that having a right to procreate does not inherently negate the moral duty to limit procreation.¹⁵

6 Vincent Tawiah, "Does Political Ideology Affect the Stringency of Environmental Policy?," *Politics & Policy* (Statesboro, Ga.) 50, no. 3 (2022): 633

7 Tawiah, 643

8 Lisa M. Jenkins, "1 in 4 Childless Adults Say Climate Change Has Factored Into Their Reproductive Decisions," *Morning Consult*, September 28, 2020, <https://pro.morningconsult.com/articles/adults-children-climate-change-polling>

9 Trevor Hedberg, "The Duty to Reduce Greenhouse Gas Emissions and the Limits of Permissible Procreation," *Essays in Philosophy* 20, no. 1 (2019): 2

10 Hedberg, 3

11 Hedberg, 3

12 Hedberg, 5

13 Bingjing Li and Hongliang Zhang, "Does Population Control Lead to Better Child Quality? Evidence from China's One-Child Policy Enforcement," *Journal of Comparative Economics* 45, no. 2 (2017): 246.

14 Li et al., 247

15 Hedberg, 7

The environmental benefits of having children are also considered, with some arguing that a larger population can lead to more innovative solutions for addressing climate change.¹⁶ However, a growing population does not guarantee better solutions and may lead to moral corruption by prioritizing economic growth over environmental concerns — another Bezos, Musk, or worse. Urgency in addressing climate change has a shrinking window, and thus exacerbating the problem through population growth in the short term is an unacceptable risk.¹⁷

In light of the childlessness as a large carbon footprint reducer compared to other activities, Hedberg stresses the importance of fulfilling the duty to limit family size. To this end, one must evaluate if they genuinely desire children, and if not, should refrain from procreation.¹⁸ If children are desired, exploring adoption as an environmentally responsible option is encouraged.¹⁹ Accordingly, when thinking of expanding one's family, one should consider adoption as their first option before defaulting to procreation, to avoid actively contributing to population growth and associated carbon emissions.²⁰

Therefore, while procreative choices are private decisions; they also carry public and environmental implications that warrant careful consideration. This duty should encourage individuals to contemplate adoption as an alternative to having multiple biological children and to restrict family size to the replacement fertility rate or lower.²¹ The conflation between public and private, the individual and the collective, is now more contentious than ever, existing in every facet of human life and infiltrating reproduction.

Conceiving Sustainability: Reproductive Choices Driven by Eco-Motivations

The decision to forgo parenthood in response to growing environmental concerns is not a widely

adopted practice. As mentioned, left-leaning ideological parties bear the burden of the environment in ways that centrist or right-wing individuals do not. This decision stems from a desire to reduce their carbon footprint and lessen the strain on the planet's already fragile ecosystems.²² Since the left also favours more government intervention, it is understandable that these individuals are more accepting of childlessness as an eco-positive practice. By refraining from having children, they align their personal choices with their broader commitment to sustainability and climate-conscious living. This deliberate act of family planning exemplifies how environmental considerations are influencing not only lifestyle choices but also the very notion of parenthood itself among certain segments of the population.

The reference to the left is not meant to imply that this choice is exclusive to those on the left of the political spectrum. People from various political backgrounds may choose not to have children for environmental reasons. However, the left is simply a description of a particular group of individuals who have been notable in their adoption of this stance, due to their emphasis on social and environmental justice.²³ Environmental concerns and decisions regarding parenthood are made by individuals across the political spectrum, but the extent of obligation felt on the spectrum varies.

The Washington Post details this growing concern about the environmental impact of bringing children into the world, and how it has led individuals like Meera Sanghani-Jorgensen and her husband to make difficult decisions. In their case, they opted for just one child to minimize their carbon footprint.²⁴ While some research suggests that forgoing parenthood can reduce emissions by up to 60 metric tons annually, there is an ongoing debate about the validity of these findings and whether parents should bear

16 Hedberg, 9

17 Hedberg, 10

18 Hedberg, 17

19 Hedberg, 18

20 Hedberg, 18

21 Hedberg, 14

22 Eric Neumayer, "The Environment, Left-Wing Political Orientation and Ecological Economics," *Ecological Economics* 51, no. 3 (2004): 168

23 Neumayer, 168

24 Shannon Osaka, "Should You Not Have Kids Because of Climate Change? It's Complicated," *Washington Post*, December 2, 2022, <https://www.washingtonpost.com/climate-environment/2022/12/02/climate-kids/>.

responsibility for their children's carbon emissions.²⁵ Climate experts are increasingly shifting their focus from what children might do to the climate, to what the climate will do to them.²⁶ While having fewer children may not single-handedly solve climate change, it is seen as an ethically sound choice by some who wish to contribute to a sustainable future. Concerns about the future well-being of children in a rapidly changing climate are becoming increasingly complex to untangle as the impact of climate change becomes more evident through wildfires, floods, and heatwaves.²⁷ Of course, this dilemma has deeply personal consequences, including relationship strains and, in some cases, divorce when couples disagree on bringing children into a climate-altered world.²⁸

Kalle Grill goes further in "Procreation vs. Consumption: Harms and Benefits," on the intricate subject of procreation's environmental implications, primarily from the perspective of procreative limitarians.²⁹ A procreative limitarian advocates for restraint in procreation due to concerns about its potential harm to the environment, particularly the negative consequences of population growth.³⁰ They draw parallels between procreation and consumption, viewing both as lifestyle choices with environmental consequences. Grill contends that procreation can have a more substantial, long-term impact on the environment than individual choices such as driving or recycling.³¹ Another parallel to be drawn is the critique of consumption methods under contemporary capitalism, and how that aligns with Western leftist ideology. Procreative limitarianism primarily targets the wealthiest segments of the population, recognizing their significant contributions to the global environmental impact. The harms associated with procreation are dissected from three perspectives: harm to the procreated, harm to procre-

ators, and harm to third parties, emphasizing the harm inflicted on human beings through environmental impacts.³² Concrete harms include disease, undernourishment, wars, and mass migration, all resulting from environmental degradation.³³

As the global environment deteriorates due to human activity and population growth exacerbates these issues (with a projected 30% population increase by 2100), the impact of population size on various environmental problems is undeniable.³⁴ A valid argument to avoid contributing any further is fared with whether individual acts of procreation directly contribute to harm or merely make harm more likely.³⁵ Some adopt a common-sense approach, arguing that even small contributions to a large problem should be avoided.³⁶ Others express skepticism regarding the impact of individual actions on global environmental issues, yet they still argue for moral reasons to limit procreation based on systemic harm contributions.³⁷

However, there are beneficial roles of procreation and consumption that we must acknowledge when evaluating these actions from a cost-benefit perspective. While some procreative limitarians adopt a non-consequentialist harm-avoidance approach, others recognize that the potential harm of procreation is intricately linked to the harm of future consumption, necessitating the consideration of benefits — both direct and indirect. For procreation, this often results in meaningful experiences, especially from parenting, by adding valuable life content, including deep personal relations and accomplishments.³⁸ It also can contribute to collective well-being, through economic activity, culture, innovation, demographics, and the regeneration of society. The complexity of the procreation-consumption comparison often challenges the one-sided viewpoint presented by procreative limitarians, while

25 Osaka, Washington Post, December 2, 2022

26 Osaka, Washington Post, December 2, 2022

27 Osaka, Washington Post, December 2, 2022

28 Osaka, Washington Post, December 2, 2022

29 Kalle Grill, "Procreation Vs. Consumption: Harms and Benefits," *Environmental Ethics* 45, no. 3 (2023): 266

30 Grill, 266

31 Grill, 266

32 Grill, 267

33 Grill, 267

34 Grill, 268

35 Grill, 267

36 Grill, 269

37 Grill, 269

38 Grill, 271

outlining which individuals generally share these viewpoints in society (left-leaners.)³⁹

The motivations and environmental consciousness of the left do not lack validity though. The sheer impact that overpopulation has and will continue to have on the environment is presenting itself in the weekly wildfires and lower air quality around us. Hedberg's book, "The Environmental Impact of Overpopulation: The Ethics of Procreation" commends those who forgo children with these factors in mind. As mentioned before, the interplay between population size and the rate of environmental degradation per person is a critical factor in environmental problems. Left-wing individuals tend to prioritize environmental sustainability and are more likely to internalize the idea that bringing fewer people into existence is an ethical way to reduce human numbers.⁴⁰ While lower fertility rates are proposed as a means to reduce overpopulation, it is acknowledged that this may not produce quick results.⁴¹ Left-wing individuals, who are often conscious of consumption patterns and sustainable living, may be more inclined to focus on reducing their family size rather than increasing their consumption.

There are also ethical and policy dimensions of advocating for population reduction. The left is often driven by motivations concerning social and environmental responsibility, and they may feel a moral obligation to support policies and actions that contribute to ecological preservation.⁴² This is especially important in terms of population reduction efforts in the developed world, where individuals tend to have the largest ecological footprint per person. In terms of population policy approaches, Hedberg distances from coercive policies and instead advocates for preference adjustment and incentivization. There is also a higher likelihood from this side of the spectrum to support non-coercive methods for achieving population reduc-

tion, such as cultural interventions to promote smaller families and policies like tax schemes to encourage fewer children without coercion.⁴³ Objectively, the left sees these approaches as more aligned with individual freedoms and human rights.

Left Without Heirs: The Political Leanings of the Childless

In Maja Bodin and Jenny Björklund's "Can I Take Responsibility for Bringing a Person to This World Who Will Be Part of the Apocalypse?: Ideological Dilemmas and Concerns for Future Well-Being When Bringing the Climate Crisis into Reproductive Decision-Making," their research suggests that having one less child is one of the most effective lifestyle changes for reducing greenhouse gas emissions in developed countries.⁴⁴ It connects the act of bringing a new person into the world to direct and long-term carbon emissions, effectively linking reproductive choices with environmental politics and public health. Ethicists like Travis Rieder argue that limiting reproduction is necessary to avoid significant harm and injustice due to climate change, particularly in high-income countries.⁴⁵ However, some critics argue that the focus on individual choices can obscure more substantial structural issues related to climate change.⁴⁶

Individuals, especially those on the political left, consider reproductive decisions in the context of climate change as well as a majority of their other personal freedoms. While most people desire to have children, factors like economic stability, relationship readiness, and individual well-being influence reproductive decision-making.⁴⁷ Studies suggest that those with pre-existing environmental concerns are more likely to alter their reproductive behaviour, however, parenthood can also increase environmental concerns, creating another complex dynamic in left-wing ideology.⁴⁸

39 Grill, 281

40 Trevor Hedberg, *The Environmental Impact of Overpopulation: The Ethics of Procreation* (London: Routledge, 2021), 21

41 Hedberg, 39

42 Neumayer, 169

43 Hedberg, 186

44 Maja Bodin et al., "Can I Take Responsibility for Bringing a Person to This World Who Will Be Part of the Apocalypse!?: Ideological Dilemmas and Concerns for Future Well-Being When Bringing the Climate Crisis into Reproductive Decision-Making," *Social Science & Medicine* (1982) 302 (2022): 2

45 Bodin et al., 1

46 Bodin et al., 1

47 Bodin et al., 1

48 Bodin et al., 4

Many participants in the study expressed concerns about climate change's impact on reproduction and suffered from "climate anxiety."⁴⁹ They faced an ideological dilemma, balancing the negative environmental impact of having children with their desire for parenthood.⁵⁰ This awareness of climate issues had limited impact on the ultimate decision to have children, as the desire for parenthood often outweighed concerns about climate change.⁵¹ This leads to the perception of reproduction as a political and moral issue. If reproduction is seen as having broader societal and environmental implications, and some view having children as a selfish act given the climate impact, then the onus is on women, in particular.⁵² They often face societal pressure to become mothers, and those choosing not to are sometimes criticized.⁵³

Participants in the study framed actions related to climate change as economic assets and debts, so not having children was seen as an environmentally friendly choice, reducing one's "environmental debt."⁵⁴ Some individuals believed that having children provided a reason to engage in environmental efforts and practice responsible family planning, such as having fewer children or adopting.⁵⁵ On the other hand, participants argued that reproduction and climate change are fundamentally unrelated.⁵⁶ They believed that their personal reproductive decisions should not be linked to climate concerns, and other aspects of life, such as transportation choices, are more relevant to their environmental impact.⁵⁷ Debates arose about whether the focus should be local or global when considering the impact of reproduction on climate change, with some participants emphasizing the importance of local

environmental efforts, while others highlighted the role of high consumption in the Global North as a significant contributor to climate change.⁵⁸ Ultimately, the participants emphasized the strength of their desire to reproduce, often outweighing concerns about climate change and overpopulation. As well, they discussed various ways to justify reproduction ethically and politically, drawing from different moral requirements and societal norms.⁵⁹

Does this create a fertility gap, then, politically? Growing more conservative with age seems to be a trend, but a study conducted by The Guardian in "Having Children May Make You More Conservative," suggests that the decision to have or not have children might be a contributing factor in shaping one's political ideology, as well.⁶⁰

The research, led by Dr. Nick Kerry and colleagues at the University of Pennsylvania, investigates how childlessness influences political leanings. They conducted an experiment where university students in the U.S. were divided into two groups: one focused on children and the other on household objects.⁶¹ Both groups were then surveyed on various social and political issues, such as abortion and traditional marriage.⁶² The most interesting finding was that participants who imagined themselves in a caregiving role for a child tended to provide more socially conservative responses, particularly among those deeply engaged in the exercise.⁶³ This experiment's results were further reinforced by a broader survey across 10 countries, which revealed that individuals with a strong motivation to care for children were more likely to hold socially conservative views.⁶⁴ Additionally, parents, as

49 Bodin et al., 3

50 Bodin et al., 4

51 Bodin et al., 4

52 Bodin et al., 4

53 Bodin et al., 4

54 Bodin et al., 4

55 Bodin et al., 7

56 Bodin et al., 7

57 Bodin et al., 7

58 Bodin et al., 5

59 Bodin et al., 3

60 Nicola Davis, "Having Children May Make You More Conservative, Study Finds," The Guardian, September 7, 2022. <https://www.theguardian.com/lifeandstyle/2022/sep/07/having-children-may-make-you-more-conservative-study-finds>

61 Davis, The Guardian, September 7, 2022.

62 Davis, The Guardian, September 7, 2022.

63 Davis, The Guardian, September 7, 2022.

64 Davis, The Guardian, September 7, 2022.

opposed to those who were childless, tended to exhibit more socially conservative attitudes.⁶⁵

The traditional structure of a family is also changing, outside the context of climate change, which could also pave the way for a childless future. As LGBTQ+ members navigate the intricacies of family planning, one must also note the exclusionary logic that exists behind such terms, which is why many queer people lean left in their political affiliations.⁶⁶ “Never After? Queer Temporalities and the Politics of Non-Reproduction” by Eleanor Wilkinson investigates just that.

This sociological research recommends moving away from a narrow focus on the traditional family and the heterosexual couple.⁶⁷ Instead, a shift towards the geographies of intimacy is proposed, which recognizes and validates diverse forms of intimate attachments.⁶⁸ This shift challenges procreational norms, which underpin idealized notions of nuclear family life, heterosexuality, and procreation.⁶⁹ Left-leaning individuals, including many queer people, advocate for the dismantling of procreational norms, as they shape societal expectations around family and intimate relationships and often lead to the exclusion and marginalization of those not adhering to the ‘ideal family’ model.⁷⁰

Queer individuals often face unique challenges and societal pressures that can influence their decisions not to have children. The procreational norms that exist in idealized notions of family life, heterosexuality, and procreation can create a sense of exclusion and marginalization for queer individuals. These norms may perpetuate the belief that reproduction is central to personal fulfillment and social acceptance, which can be particularly challenging for those who don’t conform to heteronormative expectations.⁷¹ The stigmatization and exclusion experienced by single and childfree queer individuals, who may already navigate a world that frequently marginalizes them, can further deter them from pursuing parenthood.⁷² Additionally, the broader left-leaning perspective often embraced by

many LGBTQ+ members advocates for diverse forms of intimate attachments and challenges traditional family structures, providing an additional layer of reasoning for their choice to forgo parenthood.⁷³

Undeniably, the growing shift towards childlessness by the left has a multifaceted influence on left-wing politics, although it’s vital to recognize that these impacts are far from uniform and can vary widely depending on individual choices and broader societal trends. One obvious significant effect is demographic shifts. A decline in birth rates among liberals might reduce the proportion of left-leaning voters in the population and future generations. Such shifts could impact electoral outcomes and the overall balance of political power in a given society, completely altering the political landscape. The policy priorities of childless left-leaning individuals also play a noteworthy role, as those who decide not to have children may prioritize different policies than parents, often placing a stronger emphasis on environmental and social issues. This can significantly influence the political agenda and the priorities of left-wing parties, as they may find themselves advocating more ardently for policies aligned with these concerns. Childless left-leaners may demonstrate increased support for social welfare and family policies that benefit society as a whole, such as universal healthcare, education, and social welfare. The choice not to have children can also be viewed as an affirmation of personal freedoms and autonomy, aligning with left-wing values that emphasize individual rights and personal self-determination. In this way, childlessness can serve as a reinforcement of these values within the broader left-wing context.

The Right-Wing Baby Boom: Fertility Rates by Ideology

Travis Rieder, a commonly known limitarian, in “Challenges to Procreative Obligation” addresses the challenges associated with the idea that individuals have an obligation to make procreative choices

65 Davis, The Guardian, September 7, 2022.

66 Eleanor Wilkinson, “Never after? Queer Temporalities and the Politics of Non-Reproduction,” *Gender, Place and Culture: A Journal of Feminist Geography* 27, no. 5 (2020): 660

67 Wilkinson, 660

68 Wilkinson, 661

69 Wilkinson, 662

70 Wilkinson, 663

71 Wilkinson, 664

72 Wilkinson, 664

73 Wilkinson, 664

limited by concerns about overpopulation and climate change. It raises questions about whether individuals should consider having no children, only one child, or at most two children, depending on their principles.⁷⁴ These discussions around procreative obligations have significant implications for those who adhere to right-wing ideologies. One issue is the intrusion of morality into private decisions, especially those related to family planning. Many people, including those with right-wing political beliefs, may resist the idea of outside moral considerations impacting their choices about the size of their family.⁷⁵ For right-wingers, this may evoke concerns about personal freedom and autonomy in family planning.

The demanding objection, often associated with utilitarian arguments, raises questions about whether individuals can be expected to make radical sacrifices for the sake of morality.⁷⁶ It emphasizes the need for moral principles to align with the nature of imperfect humans and not require excessive sacrifices, a point that generally resonates with the right.⁷⁷ For these individuals, the concept of procreative liberty is essential to consider. Procreative liberty emphasizes the idea that individuals have the basic human right to determine the number and spacing of their children.⁷⁸ The distinction between legal rights and moral rights highlights that having a legal right does not necessarily equate to moral rightness. This distinction, in particular, can be relevant for those who may argue for individual rights, even when those rights may lead to actions perceived as morally wrong by others.

A study conducted by Martin Fieder and Susanne Huberin further analyzes the intriguing relationship between political attitudes and the number of children people have through potential genetic

underpinnings and evolutionary implications for these attitudes. In “Political Attitude and Fertility: Is There a Selection for the Political Extreme?” the researchers acknowledge the growing body of evidence pointing to a genetic component in human ideology and political beliefs, which paves the way for investigating their connection with reproduction.⁷⁹

One of the key hypotheses is that both left (liberal) and right (conservative) political attitudes may have conferred reproductive advantages throughout human evolutionary history.⁸⁰ To substantiate this, the study analyzed data from three diverse sources: the World Value Survey (WVS), the Survey of Health, Ageing and Retirement in Europe (SHARE), and the General Social Survey (GSS) in the United States.⁸¹ The findings from these datasets revealed a nuanced picture of the association between political attitudes and the number of children.⁸² In the WVS dataset, a “U-shaped” relationship emerged, suggesting that individuals at the extreme ends of the political spectrum, both left and right, tended to have a higher average number of children compared to those with more moderate political attitudes.⁸³ Notably, right-oriented individuals exhibited the highest average number of children.⁸⁴

In contrast, the SHARE dataset demonstrated a more linear relationship, where left-leaning individuals had fewer children on average.⁸⁵ The GSS data from the United States further complicated the picture by revealing a temporal shift. In the 1970s and 1980s, individuals at both political extremes enjoyed a reproductive advantage, but this advantage disappeared for left-wing individuals in the 1990s.⁸⁶

The observation that individuals with right-wing political attitudes tend to have higher birth rates

74 Travis Rieder, “Challenges to Procreative Obligation,” in *Toward a Small Family Ethic How Overpopulation and Climate Change Are Affecting the Morality of Procreation* (New York: Springer, 2016), 44

75 Rieder, 43

76 Rieder, 44

77 Rieder, 44

78 Rieder, 48-49

79 Martin Fieder et al., “Political Attitude and Fertility: Is There a Selection for the Political Extreme?,” *Frontiers in Psychology* 9 (2018): 2343

80 Fieder et al., 2343

81 Fieder et al., 2343

82 Fieder et al., 2343

83 Fieder et al., 2343

84 Fieder et al., 2343

85 Fieder et al., 2343

86 Fieder et al., 2343

is a multifaceted phenomenon with several potential contributing factors. One significant factor is the embrace of traditional values within right-wing ideologies, which may include a preference for traditional family structures and values that encourage larger families. Religiosity also plays a crucial role in this trend, as more right-leaning individuals adhere to religious standards and promotion of family values and family sizes. Strong social and cultural norms may exist that promote larger families, and these norms can significantly influence individual choices. Economically, right-wing individuals may hold more conservative views on economic policies, which can lead to greater financial stability and a greater willingness to have larger families. Access to healthcare is another factor to consider, as right-wing political positions may be associated with policies that provide better access to healthcare depending on the country. This is a huge determinant in child-rearing.

Furthermore, the “fertility gap” is another notable phenomenon in this case. Studies suggest that right-leaners have a significant advantage, with a 41 percent higher birth rate than left-leaners.⁸⁷ Data from the General Social Survey further supports this, showing that 100 unrelated liberal adults have 147 children, while 100 unrelated conservatives have 208 kids.⁸⁸ Since people can align their political preferences with those of their parents—depending on their upbringing—this difference in birth rates may lead to more conservatives in the future.⁸⁹ Various factors contribute to this disparity in birth rates; conservative opposition to birth control plays a role, as does the tendency for urban residents, who are more likely to be liberal and have smaller families.⁹⁰

However, we must now more thoroughly

examine if political ideologies are truly transmitted to the offspring. Becoming a parent can shift one’s motivations, goals, and priorities, shedding light on the roots of differences in political beliefs.⁹¹ Interestingly, while social conservatism generally increases with age, this pattern changes when parenthood enters the picture.⁹² Data spanning 88 countries and 40 years from the World Values Survey suggests that having more children tends to make parents more socially conservative.⁹³ It is important to note that this trend doesn’t apply universally, with exceptions like India and Pakistan, stressing that parenthood is just one of many factors shaping social values.⁹⁴

Another study on intergenerational transmission of political values and the role of parenting styles provides insightful findings on the nature of right-wing households and family planning. It recognizes parents as influential agents of political socialization, acknowledging that political beliefs, including party identification and political ideology, can often be inherited across generations.⁹⁵ This research shows how individual differences in parenting styles contribute to this transmission.

Parenting styles, characterized by their control and affectivity, are key factors in this study, which identifies three primary styles: authoritative, authoritarian, and permissive.⁹⁶ The study argues that authoritative parenting, with its balance of control and positive affectivity, plays a pivotal role in shaping children’s political attitudes, making them more open to adopting their parents’ political values.⁹⁷ Additionally, authoritative parenting is most commonly found in right-leaning households.⁹⁸ The research formulates two hypotheses, positing that parenting style moderates the transmission of political ideology and partisan

87 “The Political Fertility Gap,” ABC News, August 22, 2006, <https://abcnews.go.com/GMA/Politics/story?id=2344929&page=1>

88 ABC News, August 22, 2006

89 ABC News, August 22, 2006

90 ABC News, August 22, 2006

91 Nicola Davis, “Having Children May Make You More Conservative, Study Finds,” *The Guardian*, September 7, 2022. <https://www.theguardian.com/lifeandstyle/2022/sep/07/having-children-may-make-you-more-conservative-study-finds>

92 Davis, *The Guardian*, September 7, 2022

93 Davis, *The Guardian*, September 7, 2022

94 Davis, *The Guardian*, September 7, 2022

95 Gregg R. Murray et al., “Parenting Styles, Socialization, and the Transmission of Political Ideology and Partisanship: Parenting Style, Socialization, and Political Values,” *Politics & Policy (Statesboro, Ga.)* 40, no. 6 (2012): 1107

96 Murray et al., 1111

97 Murray et al., 1109

98 Murray et al., 1109

identification from mother to offspring.⁹⁹ It uses original data collected from mother-offspring pairs, mainly through the Parental Authority Questionnaire to assess parenting styles and measure political and partisan identification.¹⁰⁰

The key findings suggest that differences in parenting styles, particularly authoritative parenting, influence children's adoption of their parents' political values, and emphasize the reciprocal nature of political values' transmission within the parent-child relationship.¹⁰¹ Authoritative parenting fosters greater receptivity in children to parental political values, potentially because it allows children to feel more autonomous in their political choices.¹⁰²

A Political Climate Change

In considering the way right-wing households typically procreate, and the way left-wingers do not, there must be a transitional effect in the political sphere. While some argue that limiting population growth can contribute to resource conservation and environmental sustainability, this, in turn, can shape political discourse and policy direction toward greener initiatives like renewable energy, conservation, and carbon reduction. However, this eco-conscious practice will undoubtedly conflict with right-wing ideologies, which emphasize family values and may be less inclined to embrace childlessness for environmental reasons. Consequently, these differences in family planning approaches can contribute to political polarization between left and right-wing factions on environmental and family-related issues, influencing the direction of political debates and strategies.

Right-wing families typically adopt the authoritative parenting style that is more dominant in political ideology transmission to their offspring.¹⁰³ In considering this, a lack of left-wing households and children, and therefore peers, will create a dynamic demographic ideological shift towards the right. This public discourse would play a significant role in shaping perceptions of reproductive choices and their environmental implications. A rise in the right, with a decline in the left would completely change the nature of our institutions, populations, and societal treatment.

Of course, this holds various policy implica-

tions. It can exert influence on government policies related to family planning, contraception, and environmental regulations, thereby shaping the political landscape. The long-term consequences of demographic shifts may result in changes in the political climate as younger generations, influenced by their parents' environmental concerns, come of age and become voters. While it's not a prediction of the complete eradication of leftist politics, it does raise concerns about potential challenges on the horizon and emphasizes the need for continued exploration of the intricate relationship between environmental consciousness, family planning, and political ideologies.

In terms of environmental policy, the dominance of authoritative parenting in right-wing households may foster conservative values and a preference for economic growth and individual liberties over environmental regulation among their children. As this demographic shift towards right-wing values occurs, political representation may be swayed towards officials less inclined to support strong environmental regulations. The influence of media outlets on right-wing households, often promoting skepticism about climate change, in line with other social issues can further shape public opinion. Further, it can potentially lead to weaker environmental regulations and less investment in renewable energy. This could also have detrimental effects on marginalized communities through reduced social safety nets, increased economic inequality, discriminatory policies, stricter immigration measures, civil rights erosion, limited healthcare access, harsher criminal justice policies, neglect of environmental concerns, decreased education funding, and heightened social polarization, with rising hate crimes and discrimination.

In addition, these dynamics have important implications for environmental advocacy. Controversial cases of left-wing individuals choosing childlessness for environmental reasons can polarize public opinion and challenge environmental advocates' efforts to build broad coalitions. To bridge ideological gaps, advocates may need to diversify their messaging to resonate with conservative and right-wing perspectives, framing environmental issues in terms of economic benefits, national security, or moral values. Moreover,

99 Murray et al., 1110

100 Murray et al., 1111

101 Murray et al., 1109

102 Murray et al., 1108

103 Murray et al., 1109

recognizing the long-term impact of parenting styles and intergenerational transmission of political ideologies, environmental advocates should consider strategies targeting youth and education to shape future political leaders and public opinion more favourably towards environmental concerns.

Right-wing concerns about the environment are generally shaped by their attitude towards consumerism, usually weaponizing the environment for profit. Eco-fascism, as political researcher Alex Amend asserts, is “the devaluing of human life—particularly of populations seen as inferior—to protect the environment viewed as essential to White identity.”¹⁰⁴ Deutsche Welle investigates this alarming emergence of eco-fascism, an ideology within far-right circles that attempts to justify extremist views and actions through environmental concerns.¹⁰⁵ Eco-fascism has garnered attention due to recent far-right massacres allegedly perpetrated by adherents of this ideology, which grotesquely links environmental conservation with racist and hateful beliefs.¹⁰⁶ These incidents include the Buffalo shooting, where the perpetrator connected mass migration with environmental degradation as a rationale for violence. As well, the Christchurch killer, who identified as an “ethno-nationalist eco-fascist” and associated climate change with overpopulation by non-Europeans.¹⁰⁷ Eco-fascism blends far-right or fascist politics with environmental anxieties, framing climate change as a civilizational threat due to environmental degradation. This ideology often incorporates racist theories, linking environmental decline to cultural and racial erosion. Eco-fascism appeals to disillusioned youth who perceive government inaction on climate change, offering a sense of purpose and an outlet for their frustration.¹⁰⁸ These ideas spread across both fringe and mainstream online platforms.¹⁰⁹ In the case of a future demographic and political shift to the right, by nature of left-wing childlessness, eco-fascism has a place to breed and grow. Notably, contemporary eco-fascist motivations align with historical drivers, including concerns about urbanization, environmental degradation, and the displacement of rural populations.¹¹⁰

104 Deutsche Welle. “Eco-Facism: The Greenwashing of the Far Right,” *The Business Standard*, May 21, 2022, <https://www.tbsnews.net/features/panorama/eco-fascism-greenwashing-far-right-424014>

105 Welle, *The Business Standard*, May 21, 2022

106 Welle, *The Business Standard*, May 21, 2022

107 Welle, *The Business Standard*, May 21, 2022

108 Welle, *The Business Standard*, May 21, 2022

109 Welle, *The Business Standard*, May 21, 2022

110 Welle, *The Business Standard*, May 21, 2022

Conclusion

From the intimacy of family planning to the vast arena of global politics, demonstrating the profound interconnectedness of these seemingly disparate domains leaves the real climax as uncertain. The focus has also been shifted from what children might do to the climate, to what the climate will do to them, and while eco-consciousness and political leanings have an increasingly interconnected relationship, this discourse remains crucial. Through analyzing the power of personal choice, the motivations behind childlessness from the left, and the higher fertility rates of the right-wing, there is an evident shift in the political scale. In the pursuit of sustainability, there lie even more grave consequences, exemplified by the danger of eco-fascism. Does pursuing a cleaner form of transportation remove the onus of the declining climate off one’s back? Who gets to have kids, and who sacrifices parenthood and the pleasures that come with it? Reproductive decisions hold immense power, in both the individual and collective context. Therefore, in affirming “my body, my choice,” we must not forget it is our planet and our climate.

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A Growth Fetish: Rostow's Modernization, Environmental Degradation, and Degrowth

Tatyana Leduc

The desire for more economic growth, more technology, and more innovation is a common theme found throughout contemporary policy making. In particular, *Rostow's Stages of Economic Development* has played a significant role in the creation of the development agendas pushed by the Global North. This influence has contributed to the fetish woven throughout western policy that asserts the need for infinite growth. In this essay, I will explore Rostow's Stages theory and criticize its view of modernization – specifically the expansion of production and consumption, as a positive change. Throughout his analysis, Rostow argues traditional society is “limited in production functions,”¹ thus needing to increase its consumption habits along a linear path to create better life opportunities for all. However, Rostow's fundamental idea of modernization as development has decreased the quality of life for marginalized populations in the Global South and enabled the Global North to hinder the Global South through its promotion of fossil fuels. Using the perspectives of Gandhi, environmental and Indigenous scholars, I argue that Rostow's fundamental idea of modernization downplays traditional values and ideas which support environmental sustainability, instead perpetuating the CO2 emissions leading to climate change. While I do not suggest a complete reversal to traditional society, I propose that degrowth theories, which support Indigenous practices and the intrinsic value of the environment, should be considered as an alternative to limitless economic modernization.

Theoretical Background

Modernization theory was born in the context of the Cold War. As the USSR and the United States sought to gain ideological control of newly decolonized states, finding new ways to gain the upper hand over one another became a matter of necessity. This sense of moral duty to shape the future outcomes of the world's population is exemplified in Harry Tru-

man's inaugural address, where he states:

“More than half the people of the world are living in conditions approaching misery... Their economic life is primitive and stagnant... We should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life... Greater production is the key to prosperity and peace.”²

With this, scholars began to generate their own theories about the development of emerging new nations in the global economy. One of these scholars was Walt Whitman Rostow, an economic historian who in the 1960's became a senior national security advisor for the Kennedy and Johnson government in the U.S.³ Similarly to Truman, Rostow pushes for western capitalist production, and more specifically modernization, in underdeveloped nations, with the goal of bringing them out of their impoverished state. For Rostow, all societies must strive to move away from their primitive ways of being by following a pre-established path into a more technologically and economically evolved future.

Countering the ideas of Karl Marx predicting communism arising in developing countries, in 1959 Rostow published the *Stages of Economic Growth*.⁴ The theory he puts forward is an intentional delegitimization of communism, describing a necessary evolution towards high production and consumption capitalism. Centering the United States as an exemplary society, Rostow describes the predestined, linear path that each society will take towards the ultimate goal of the age of mass consumption. The core of his argument is that for development to occur, modernization must evolve alongside it.

Five different stages are outlined by Rostow as the pathway to modernization. The first two stages, *Traditional Society* and the *Preconditions for Take Off* focus on criticizing traditional society, situating the need to evolve from backwards ways of life into mod-

1 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto* (Cambridge University Press, New York, 1960), 4.

2 Harry S Truman, 1949. *Inaugural Address*, (Washington, DC, January 20th).

3 Guy Ortolano. “The typicalities of the English? Walt Rostow, the Stages of Economic Growth, and Modern British History,” *Modern Intellectual History* 12, no. 3 (2015): 657-684, <https://doi.org/10.1017/S1479244314000626>.

4 Katie Willis. “Development as Modernisation: Rostow's The Stages of Economic Growth,” *Geography* 108, no. 1 (January 2023): 33-37, <https://doi.org/10.1080/00167487.2023.2170073>.

ern ideas, innovations, and institutions that are necessary for economic and technological progression.⁵ In the *Take Off* and *Drive to Maturity* stages, Rostow builds his argument about the benefits of development. More specifically, he declares that economic and political investment will trigger the rapid expansion of entrepreneurs and growth of new industries, later creating more complex technology and goods.⁶ Finally, the *Age of High Mass Consumption* is described as a shift towards increased urban populations, skilled and office jobs, investment towards social welfare and security, and production that seeks to meet the desires of a “consumer.”⁷ Here, the values of care and community are erased, with Rostow depicting the consumerist society as the ideal for humanity.

Today, Rostow’s theory continues to resonate in modern policy and development goals. More recently, large scale initiatives like the UN’s Sustainable Development Goals (SDGs) have incorporated some of Rostow’s ideas. Just as the SDGs were created as markers to analyze progression towards development,⁸ Rostow’s work also identifies specific markers of a modern society. This demonstrates Rostow’s assumptions of a universal progression of economic and technological growth has evolved into core values of development work on a global scale. For this reason, it is important to recognize Rostow’s theory as a relevant theoretical contribution, understanding its traces in current policymaking and ideology.

Modernization as Development, Emissions and Climate Change

With the end of the cold war, Climate Change has emerged as a new global threat. This refers to the consequential changing of climate measures like

temperature, precipitation, and wind patterns due to the combination of natural and human based activities, such as carbon emissions.⁹ Capitalism has been identified by scholars like Moore¹⁰ as the root cause for the increase in climate disaster, as it has led to the abuse of the natural world by generating the separation of society and nature. According to Moore, nature has been cheapened in order to rationalize its manipulation and exploitation for human production. Rostow’s Stages theory is a strong example of this ideology of capitalism, as he argues the development of production above all else is an essential part of societies development. Throughout his analysis, he often criticizes the inability of society to expand its productive forces and bring attention to the importance of increased consumption. For instance, he states the *Traditional Society* stage is “limited in production functions.”¹¹ Again, in the *Take Off Stage*, Rostow identifies society as being characterized by “traditional low productivity methods.”¹² Doing so, Rostow frames the development of production and consumption as a positive thing, claiming it will eventually provide the means through which countries can progress along the path to mass consumption. Overall, this creates an infinite growth paradigm woven throughout his theory, communicating the belief that it is the destiny of every society to infinitely grow their productive capacities.

The climate crisis demonstrates that this paradigm of infinite growth has enabled the Global North to hinder the Global South through climate devastation. Hickel¹³ describes that in 2015, 92% of excess emissions being emitted into the atmosphere were generated by the Global North. These included activities such as the burning of fossil fuels, deforestation and the use of automobiles, all of which are charac-

5 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 4-7.

6 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 7-11.

7 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 11-12.

8 Willis, “Development as Modernisation: Rostow’s The Stages of Economic Growth,” 33-37.

9 Selemon Thomas Fakana, “Causes of climate change,” *Global Journal of Science Frontier Research* 20, no. 2 (2020): 7-12. https://www.researchgate.net/profile/Selemon-Fakana/publication/342452772_Causes_of_Climate_Change_Review_Article/links/5ef4ff-3092851c52d6fdb650/Causes-of-Climate-Change-Review-Article.pdf.

10 Jason W. Moore, “The Capitalocene, Part I: on the nature and origins of our ecological crisis,” *The Journal of Peasant Studies* 44, no. 3 (March 2017): 594-630. <https://doi.org/10.1080/03066150.2016.1235036>.

11 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 4.

12 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 4.

13 Jason Hickel, “Quantifying national responsibility for climate breakdown: an equality-based attribution approach for carbon dioxide emissions in excess of the planetary boundary,” *The Lancet Planetary Health* 4, no. 9 (September 2020). [https://doi.org/10.1016/S2542-5196\(20\)30196-0](https://doi.org/10.1016/S2542-5196(20)30196-0).

terizing features of the highly industrialized Global North.¹⁴ Similarly, other studies¹⁵ have indicated that although in the last 30 years almost half of cumulative carbon emissions can be traced to developing nations, the per capita rates of emissions in these regions are four times less than those in countries considered as developed. Stoddard¹⁶ also reports that the richest 1% (primarily made up of those from the Global North) emit more than two times the amount of emissions of the poorest 50% of the population on earth. These findings indicate a significant imbalance between the Global North and the Global South in terms of overall CO₂ emitting practices. Thus, because of the linkage of carbon emissions as a cause for climate change and the sheer amount of carbon the Global North is emitting, there is a disproportionate distribution of environmental harms by the Global North toward those in the Global South.

Furthermore, the climate crisis has highlighted that not everyone has benefited the paradigm of infinite growth promoted by Rostow's work. Inequalities between the Global South and the Global North have been showcased by intensification of climate change caused by levels of CO₂ emissions admitted by the richest. Although the Global North is also facing adverse effects on their populations due to the rapidly changing climate, the disproportionate amount of CO₂ they emit has more so significantly and unjustly exacerbated existing social, economic and environmental vulnerabilities in the Global South.¹⁷ This is demonstrated in cities like Dhaka that have large numbers of poor populations concentrated in low-income neighborhoods, where increased temperatures and flooding caused by climate change have placed these households at even more risk.¹⁸ Despite their responsibility in generating these circumstances, the Global North has continued to follow the growth par-

14 Md Kamal Uddin, "Climate change and global environmental politics: North-South Divide," *Environmental Policy and Law* 47 (2017): 106-114. DOI: 10.3233/EPL-170022.

15 Isak Stoddard et al., "Three decades of climate mitigation: why haven't we bent the global emissions curve?," *Annual Review of Environment and Resources* 46 (October 2021): 653-689. <https://doi.org/10.1146/annurev-environ-012220-011104>.

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19 Usha Natarajan, "Environmental justice in the Global South," *The Cambridge Handbook of Environmental Justice and Sustainable Development* (2021): 39-57. <https://doi.org/10.1017/9781108555791>.

20 Komali Yenneti, Rosie Day, and Oleg Golubchikov, "Spatial justice and the land politics of renewables: Dispossessing vulnerable communities through solar energy mega-projects," *Geoforum* 76 (November 2016): 90-99. <https://doi.org/10.1016/j.geoforum.2016.09.004>.

adigm described by Rostow, expanding its productive capacities in order to meet the desires of its "consumers." Furthermore, the path of industrialization laid out by Rostow, continues to be an idealized standard for states in the Global North or those whom Rostow considers in lower stages of development. Specifically, the need to develop has been used as a justification for states in the Global South to increase their carbon output and fossil fuel-based activities, so that they may have a fair opportunity to "catch up" to states in the Global North.¹⁹

Even when the concept of industrialization is imagined through the lens of greener energy sources, the poorest populations in the Global South continue to suffer. In the case of India, small farmers in the state of Gujarat have been displaced from common land by the government to create space for the construction of solar farms as an alternative to fossil fuels.²⁰ Now dispossessed of their land and livelihoods, this population has been left without the means to successfully adapt to the economic development which Rostow promotes. In the push to keep up with the energy demands required by modernization and infinite growth, these farmers have been situated in worse positions than before the industrialization invaded their spaces. Thus, the problem isn't the usage of dirty or clean energy. Rather, the idea that economic growth should be achieved at any cost fundamentally undermines those who are marginalized. Equally, it creates injustices and capitalizes on power both between the Global North and Global South, but as well as between marginalized populations and the state.

Traditional Society Problematicized

A central problem of Rostow's theory is his conceptualization of traditional societies, their sustainable practices and relationships to the natural world.

Drawing on Orientalist ideology, Rostow uses the negative stereotyping of traditional societies juxtaposed against the supposed sophistication of the West to justify modernization.²¹ This is evident in the way Rostow praises the United States *Age of High Mass Consumption*, advocating it as the goal for every society. Meanwhile, he represents traditional societies from a very critical and negative lens, arguing it is linearly backwards. More specifically, commenting on the failure of traditional societies to adopt modernization, Rostow states that the “limitations of technology decreed a ceiling beyond which they could not penetrate” and that they lacked a systematic understanding of their physical environment.”²² In using vocabulary such as lacking and limiting to depict traditional society, Rostow paints the image that they are inferior, uncivilized, and unresourceful compared to the West due to their intimate connection with the natural world. This representation of traditional societies are problematic, as it misconstrues the reasons for which some traditional societies choose not to modernize. Furthermore, it overlooks the idea of modernization as though it is universally desired.

From Rostow’s perspective, the transmission of modern and technological knowledge is essential as he believes it will make those who are further behind in the stages of development realize the choices available to them, creating better futures for them and their children.²³ On the other hand, Gandhi’s representation of traditional society challenges this framework, as it proposes traditional society is not lacking or limited by their technologically “backwards” approaches. Gandhi argues that the lack of technological advancement in rural and traditional civilization is not due to an incapability to evolve or because they do not understand the benefits of such transformation. Rather, it is often an intentional choice to return to civilization

and avoid becoming slaves to greed.²⁴ Moreover, they suggested that modernization is something that comes at the cost of a happy life.²⁵ In sum, Gandhi states that although technological innovations and increased production may bring ease to society in some ways, they may also be dangerous for their ability to promote selfishness and drive inequality. Therefore, traditional society is not backwards like Rostow suggests, but rather an emotionally beneficial solution to detrimental capitalist greed.

Degrowth as an Alternative to Modernization

Similarly, Indigenous populations have long recognized the importance of traditional practices in ensuring the overall health of society and their immediate environment. Specifically, they have emphasized how modernization and the processes of colonialism have only exacerbated issues of inequality and environmental degradation globally, as they represent the earth only as something to be exploited.²⁶ For this reason, some contemporary Indigenous and environmentalist scholars have proposed degrowth as an alternative framework. This defined by Nirmal and Rocheleau²⁷ as the willing reduction of consumption habits to mitigate the social and ecological destruction caused by economic growth and capitalism in the Global North. Similar to Gandhi, this perspective believes that human beings have the capacity to simplify their lives from excess to necessity. However, unlike Gandhi, this definition of degrowth expands their scope beyond a return to civilization. Instead, it places emphasis on the restoration of environments.

As Whyte and Cuomo²⁸ describe, Indigenous peoples nurture their natural world through principles of care, such as reciprocity and stewardship. They generally acknowledge their interdependency with nature and their moral responsibility towards all

21 Edward W. Said, “Orientalism,” *The Georgia Review* 31, no. 1 (Spring 1977): 162-206. <https://www.jstor.org/stable/41397448>.

22 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 4.

23 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 5.

24 Mahatma Gandhi, *Gandhi: ‘Hind Swaraj’ and Other Writings* (Cambridge: University Press, 2010), 51.

25 Mahatma Gandhi, *Gandhi: ‘Hind Swaraj’ and Other Writings* (Cambridge: University Press, 2010), 7.

26 Deborah McGregor, Steven Whitaker, and Mahisha Sritharan, “Indigenous environmental justice and sustainability,” *Current Opinion in Environmental Sustainability* 43 (April 2020): 35-40. <https://doi.org/10.1016/j.cosust.2020.01.007>.

27 Padini Nirmal, and Dianne Rocheleau, “Decolonizing degrowth in the post-development convergence: Questions, experiences, and proposals from two Indigenous territories,” *Environment and Planning E: Nature and Space* 2, no. 3 (May 2019): 465-492. <https://doi.org/10.1177/2514848618819478>.

28 Kyle Powys Whyte et al., “Ethics of caring in environmental ethics,” *The Oxford Handbook of Environmental Ethics* (2016) : 234-247. https://ocul-qu.primo.exlibrisgroup.com/permalink/01OCUL_QU/r9dor2/alma9952484691005158.

living beings.²⁹ However, because the capitalist regime is dependent on the destruction and exploitation of nature and human beings, it is inherently built to see care, reciprocity and stewardship as something that is not profitable or compatible with the goals of capital accumulation. According to Rostow's vision, a tree is never just a tree. It is something to be logged, transformed, and sold into a commodifiable object for the "consumer." In this model of modernization, human beings are also presented as something commodifiable, with their labour being continuously cheapened to meet "consumer" demands for product. The infinite growth paradigm relies on these representations that centre consumerism at any cost. Thus, by protecting living beings instead of exploiting them for profit, the infinite growth paradigm is threatened. Still, as Indigenous communities present, care is needed to maintain a sustainable and responsible relationship between human and more-than-human beings.³⁰ Without appreciating the value of the environment and human beings as something more than for consumption, the emissions that fuel climate change will continue unproblematised. Therefore, it is imperative that instead of privatizing and exploiting the environment as a resource, efforts are made to repair our connections to nature. This requires a shift in the narrative of modernization, where the duty of care is no longer exchanged for "domination" of the natural world.

The disconnected relationship between human and nature is evident in mainstream solutions proposed to resolve the climate crisis. Some scholars illustrate that the type of technical modernization that Rostow suggests has the potential to lead to more sustainable futures for countries around the world. For instance, the *Ecomodernist Manifesto*,³¹ describes that the continued development of technology, in addition to the urbanization that Rostow describes, has the potential to improve the quality of human life. They argue this is because simultaneously increased technology provides the potential to decouple from the deconstruction of nature. However, given the current condition of the environment, it is likely that the process of decoupling will not happen quickly enough to recover from the

existing damages happening to the environment due to current consumption habits in the Global North.³² This presents a problem, because if society theoretically continues to follow the path which is set out by Rostow and Ecomodernists, it is unlikely that there will be enough resources left in order for all societies to flourish equally or fairly.

Overall, what is missed in Rostow's paradigm of infinite growth is the understanding that nature is dependent on us to protect it, and equally we rely on nature to sustain us. Without care, all who are a part of this interdependent relationship suffer. For example, if carbon emission targets set out by the United Nations Framework Convention on Climate Change are not met, it is likely that future needs such food, water and overall environmental security will be at risk.³³ As made evident by this alarming reality, despite nature's intrinsic value, human beings continue to see nature as something to dominate and harness. Carbon emissions are present at high levels because of the devaluation of climate stewardship in favour of the modernization Rostow proposes. This is why, while complicated in practice, the core arguments of degrowth and restoration present a convincing reason to move away from a constant desire to strive for more modernization. Instead, societies around the world, and the Global North in particular, should seek to evaluate the consumption habits that have become the norm. This will be necessary if the economic causes behind the climate crisis are to be tackled effectively. However, as long as the interconnectedness between the body and the environment is consistently ignored, this possibility will remain only in the imagination.

Modernization, Settler Colonialism and Degrowth

The concept of technological modernization also fails to address the settler colonial structures in place, which marginalize and exploit Indigenous communities so that the Global North maintains its domination of resources. Acknowledgement of Indigenous sovereignty and traditions is missing from Rostow's work, as well as similar contemporary theories like Ecomodernism, resulting in a framework that is

29 Kyle Powys Whyte et al., "Ethics of caring in environmental ethics."

30 Kyle Powys Whyte et al., "Ethics of caring in environmental ethics."

31 J. L. Asafu-Adjaye et al., "An Ecomodernist Manifesto," *The Breakthrough Institute* (2015). DOI: 10.13140RG.2.1.1974.0646.

32 Jeremy Caradonna et al., "A degrowth response to an ecomodernist manifesto," *Resilience Stanford University*, May 19th, 2015. <https://mahb.stanford.edu/blog/degrowth-response-ecomodernist-manifesto/>.

33 Milena Büchs, and Max Koch, "Challenges for the degrowth transition: The debate about wellbeing," *Futures* 105 (January 2019): 155-165. <https://doi.org/10.1016/j.futures.2018.09.002>.

narrow and whitewashed.³⁴ Instead, Rostow's work affirms the colonial transfer of knowledge and erasure of traditional practices as a legitimate mechanism of modernization, and thus development. For example, Rostow describes that without the colonization by those in more "advance stages," the speed at which modernization has taken place in traditional society would have been exponentially slower.³⁵ In doing so, Rostow's confirms that the elimination of traditional knowledge and practices of Native and Indigenous peoples globally has been a fundamental component of development as modernization. This has allowed settlers to build futures which would benefit their own goals of economic growth. Therefore, continuing to work within this framework of limitless growth will likely not have effective outcomes for Indigenous groups.

Rostow presents a narrative of economic growth that is inevitable and supposedly universally accepted, a key strategy used in the propagation of settler colonialism.³⁶ This ideology discredits the experiences and rights of Indigenous peoples to exist and live out their culture and in relationship with the land. Expanding on the impact of Rostow's growth paradigm on Indigenous peoples, a current example has been the Dakota Access Pipeline (DAP). In the age of high mass consumption, the desire of the "consumer" has been achieved at any cost. In the case of the DAP, this has included the destruction and commodification of ancestral lands of Indigenous peoples to build a pipeline for non-Indigenous communities.³⁷ In turn, this type of action supports the increasing production of structural discrimination, where settler society continues to build their entire communities around the elimination of Indigenous culture. Embracing degrowth can be an effective means for decolonization to occur because these values are intrinsically tied to traditional Indigenous practices. Indigenous peoples have long presented an alternative path to the capitalist paradigm presented by Rostow, challenging the need for infinite growth.³⁸ Continuing to follow

the same blueprints established by Rostow will neither contribute to effective solutions to Indigenous marginalization, nor help to resolve the current strains being placed on the environment due to the Global North's obsession with consumption.

Conclusion

Throughout the *5 Stages of Economic Development*, Rostow all together fails to recognize the importance of social-environmental factors in society. In the devaluation of the environment and human beings throughout the stages of modernization he presents, Rostow's ideology affirms that infinite production and consumption provide positive changes for all societies. However, as fossil fuel combustion and energy production has accelerated to meet these demands, climate change has only worsened. This has led marginalized communities within states and the Global South have been to be disproportionately disadvantaged economically and environmentally, decreasing their overall quality of life. By downplaying traditional societies and pushing economic growth along a linear path, modernization as development also underplays values which support reciprocity, and stewardship towards nature. As such, all living beings become perceived as exploitable. Although potentially complicated in practice, degrowth theories, as an alternative, provides a way to move away from the growth fetish which has plagued western society. Presenting all living things as interconnected and interdependent, the goal of appealing "consumers needs" can be exchanged to create a more equitable, environmentally sustainable world for all.

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34 Jeremy Caradonna et al., "A degrowth response to an ecomodernist manifesto."

35 Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 6.

36 Guillaume Proulx, and Nicholas Jon Crane, "'To see things in an objective light': the Dakota Access Pipeline and the ongoing construction of settler colonial landscapes," *Journal of Cultural Geography* 37, no. 1 (September 2019): 46-66. <https://doi.org/10.1080/08873631.2019.1665856>.

37 Guillaume Proulx, and Nicholas Jon Crane, "'To see things in an objective light': the Dakota Access Pipeline and the ongoing construction of settler colonial landscapes," 46-66.

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Moving from the Anthropocene to the Autopoietic: Imagining a Non-Binary World and its End

Julia Farkasch

End-of-the-world narratives offer a vision of an imagined future that prompts philosophical reflection on what our present ethical responsibilities are in the face of a possible existential threat. I will focus on how contemporary environmental challenges like climate change is centered in human interests. This focus privileges an imagined contemporary world that emphasizes human over non-human concerns, a human world as *the* world rather than *a* world. I will argue that the Anthropocene and William Connolly's climate machine metaphor is indicative of a binary that skews ethical debates in favour of human interests.¹ Connolly's politically motivated interventions must delay human imagination of the end on the basis of ecological worries by extractive capitalism (which derives profit from humankind and nature), climate denialism, white supremacy, and a combination of a limited Anthropocenic imagination with a selective understanding of the autopoietic.

The term Anthropocene is an unofficial unit of geologic time, referring to an age in which the climate and the environment are dominated by humans.² Human activities have impacted the environment at a large enough scale to constitute a distinct ecological change, and how this change is perceived impacts perspectives of how the world will end.³ An autopoietic imagination does not necessarily permit an anthropocentric imagination, but it reproduces itself such that human agency is not the defining systemic feature.⁴ Biologists, Maturana and Varela, define Autopoiesis as the constitution of the nature of living systems and the characteristics of living beings in space; this is an open-ended imagined space.⁵ Nevertheless, when expressions of the autopoietic are applied to the social

sciences some elements are selected over others to reduce the complexity of the system; this draws boundaries between the system and its outside environment. This expression will not be adopted since such selection limits the imagination of possible worlds and their demise.⁶

Combining the Anthropocene with a limited autopoietic imagination does not provide for an inclusive way of thinking about the past or the present that removes the privileging of human agency. Both philosophy and political philosophy ought to be more inclusive by embracing the possibility of imaginations that are not rooted in human agency. As an alternative, this paper will suggest a rainforest metaphor rather than an Anthropocene climate change machine that is able to recognize the complexities of climate change and the possibility of the ending of the world as it is known.

A rainforest is a complex ecosystem wherein it contains elements that cannot be known with certainty. All the elements comprising this ecosystem are almost unquantifiable with an autopoietic understanding because it recognizes the forest system's self-generating capacity such that a rainforest is more than the sum of its parts. Claiming to precisely know where and how individual ecosystem elements are impacted and how they relate to other elements in a rainforest suggests having a "pretense of knowledge."⁷ The vulnerability to bias towards measurable information without recognizing how little is known about complex ecosystem designs and the interrelation between elements points to the applicability of a rainforest metaphor rather than a machine metaphor. An open-ended autopoietic

1 Connolly, William E. "Climate Machines, Fascist Drives, and Truth." *Durham: Duke University Press* (2019). Pg. 71.

2 Yusoff, Kathryn. "Geologic Life: Prehistory, Climate, Futures in the Anthropocene." *Environment and Planning D: Society and Space* 31, no. 5 (2013): 779–95. <https://doi.org/10.1068/d1151Pg.779>.

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7 Von Hayek, Friedrich. "The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1974." NobelPrize.org, 1974. <https://www.nobelprize.org/prizes/economic-sciences/1974/hayek/lecture/>.

understanding of a rainforest recognizes its self-generating capacity which renders all of its comprising elements unquantifiable since new elements are created before older elements and can be categorized and assigned causal agency. A rainforest metaphor embraces the random and unknown nature of its elements. The interrelationships between plant and animal elements and their continuing evolution reveals our inability to observe some of these interactions, much less understand them. An imagination based on a rainforest metaphor, then, can more comprehensively inform the way in which the end of the world may come about. Indeed, a world impacted by climate change can be physiologically perceived through science, but a perception of the world is much more than physiological. Our capacity to consider the scientific aspects of climate change illustrate the fact that humans are not merely detached observers, but active participants in imagining a world of climate change. If climate science reshapes a world that is “carrying imaginaries of its own”, the Anthropocene as an imagined category expresses human imaginaries, prioritizing human agency and end-of-the-world scenarios.⁸

Kathryn Yusoff’s characterization of a human-centered Anthropocene is instructive. First, she diagnoses the Anthropocene as a geological period of time that “designates humans as beings capable of geomorphic force, shaping Earth systems on a par with inhuman forces.”⁹ Second, her categorical binary between the “human” and “inhuman” leads her to imagine a new Anthropocene humanity on the threshold of evolution and extinction. This imagined threshold does place emphasis on the possibility of world extinction, but it is ultimately focused on the impacts that extinction would have on human beings. Although Yusoff suggests that “climate change is not an exclusively human event,” she also selectively characterizes

a geological present around human participation.¹⁰ She emphasizes a binary world where humans are situated alongside Earth and extraterritorial forces such that the Anthropocene and geologic time are “folded” into human corporality. If an end-of-world scenario involves extinction then what will be extinct necessarily involves the way in which an extinction is characterized by and for human imaginations.

Environmental complexity as understood through a climate machine imagination is also mistaken. Connolly’s machine is assumed to be known and distinguishable, but its presumption is faulty because it suggests that political interventions are the solution to climate problems. Connolly’s metaphor of imagining the Anthropocene is that of an “abstract, planetary time machine”. This is an exclusive metaphor that further privileges present human concerns and a human-imagined end of the world.¹¹ Choosing a machine suggests that the “heterogenous forces and agencies that feed and fuel each other” can be known with certainty, whereas choosing a rainforest metaphor is more ideal because it recognizes that a trajectory in an anthropocentric world is *not* certain.¹² An imagined rainforest metaphor challenges the human ability to understand which forces are involved and how they interact in a way that results in a particular outcome or imagined end of the world. A machine metaphor assumes that parameters can be set, allowing Connolly to isolate agencies and forces within the climate machine like extractive capitalism, neo-fascism, and democratic constituencies. With the parameters set, he furthers his characterization of the current Anthropocene by classifying the asymmetric impact within the climate machine to region, class, race and all living beings.¹³ In other words, Connolly, the mechanic, is able to diagnose what is wrong with the climate engine, allowing him to confront how class and race

8 Lennon, Kathleen. “Re-Enchanting the World: The Role of Imagination in Perception.” *Philosophy* 85, no. 3 (2010): 375–89. <https://doi.org/10.1017/s0031819110000239>. Pg. 388.

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11 Yusoff, Kathryn. “Geologic Life: Prehistory, Climate, Futures in the Anthropocene.” *Environment and Planning D: Society and Space* 31, no. 5 (2013): 779–95. <https://doi.org/10.1068/d1151>.Pg. 781.

12 Connolly, William E. “Climate Machines, Fascist Drives, and Truth.” *Durham: Duke University Press* (2019). Pg. 6.

13 Connolly, William E. “Climate Machines, Fascist Drives, and Truth.” *Durham: Duke University Press* (2019).Pg. 50.

are intertwined with climate, fascism and truth.¹⁴ Connolly's act of identifying the impact of extractive capitalism, climate denialism and white supremacy within the climate machine is indicative of a selective, human-centered imagination. Despite his claim that there are no singular causes, Connolly's machine metaphor and the ability to precisely identify "shifts of importance" is suggestive of a selectively imagined contemporary world and future.¹⁵

Glenn Albrecht, another relevant academic, approaches the goal of "life to continue on Earth" with the act of doing something "positive".¹⁶ To delay the end of life, he calls for a non-violent revolution through the imagination of a rapid transformation of the Anthropocene into what he terms the Symbiocene. Achieving the Symbiocene requires defining the Anthropocene in human-centered, politically collective terms. In Albrecht's words "... this system will incorporate the very best of past ideas of a more inclusive form of governance including, for example, the ideas of deliberative democracy, green politics, and Deep Ecology."¹⁷ Not only does Albrecht's imagined collective center on the human, but the assumed trajectory of an ecosystem can be "identified, protected, and conserved" through agents of change like Extinction Rebellion.¹⁸ Note that how a non-democratic organization that has condoned violent tactics can bring inclusivity into climate imaginations is not explained by Albrecht.¹⁹ Changing our outlook on the Earth and halting its demise by achieving the Symbiocene allows for collective action, but a collective action that still employs binary categorization defined by human imaginations and, according to Connolly and Albrecht,

a political project as well.

A Haudenosaunee or Mohawk imagination challenges "anthropocentrically-biased cultures" in offering an alternative non-binary imagination that is less human-centric.²⁰ The Haudenosaunee imagine a world where humans and non-humans possess sentience, this is the ability to experience feelings and sensations. There is no Anthropocene trajectory since consciousness and territory are simultaneously united rather than being categorically or metaphorically separated like a machine. The "Haudenosaunee World" is generated by an "autopoietic system" where "sky, earth, water, and spirit" regeneratively interact so that time is thought of as "eternal return" rather than as an imagined end of the world. However, according to Joe Sheridan and Dan Longboat, the Haudenosaunee claim that their autopoietic system is not imaginary. To quote the authors, "[c]onsequently, there is no need to account for the imaginary because the encounter with Creation's authentic qualities embodies what is and was and what can be in a cycle that is always returning to sacred time's forever."²¹ However, I would like to point to the notion that such an expression is philosophically problematic. While the Haudenosaunee imagination is autopoietic, the author's privileging of a Haudenosaunee consciousness over other imaginations is not open-ended. Claiming to know authentic qualities and dismiss other imaginations is essentially arbitrary. What this does is reveal a privilege further reinforced by the author's accusation that, "[t]he Western imagination, lest we forget, is also the agent of evil when it thinks only with the narcissism of individualism."²²

14 Connolly, William E. "Climate Machines, Fascist Drives, and Truth." *Durham: Duke University Press* (2019).Pg. 79.

15 Connolly, William E. "Climate Machines, Fascist Drives, and Truth." *Durham: Duke University Press* (2019). Pg. 58.

16 Albrecht, Glenn A. "Negating Solastalgia: An Emotional Revolution from the Anthropocene to the Symbiocene." *American Imago* 77, no. 1 (2020): 9–30. <https://doi.org/10.1353/aim.2020.0001>. Pg. 23.

17 Albrecht, Glenn A. "Negating Solastalgia: An Emotional Revolution from the Anthropocene to the Symbiocene." *American Imago* 77, no. 1 (2020): 9–30. <https://doi.org/10.1353/aim.2020.0001>.Pg. 26.

18 Albrecht, Glenn A. "Negating Solastalgia: An Emotional Revolution from the Anthropocene to the Symbiocene." *American Imago* 77, no. 1 (2020): 9–30. <https://doi.org/10.1353/aim.2020.0001>. Pg. 28-29.

19 Shepert, Elana. "'Pipelines Blown up': Extinction Rebellion Defends David Suzuki's Controversial Comments (Video)." *Vancouver Is Awesome*, 2021. <https://www.vancouverisawesome.com/local-news/pipelines-blown-up-extinction-rebellion-defends-david-suzukis-controversial-comments-video-4794933>

20 Sheridan, Joe, and Roronhiakewen "The Haudenosaunee Imagination and the Ecology of the Sacred." *Space and Culture* 9, no. 4 (2006): 365–81. <https://doi.org/10.1177/1206331206292503>. Pg. 366.

21 Sheridan, Joe, and Roronhiakewen "The Haudenosaunee Imagination and the Ecology of the Sacred." *Space and Culture* 9, no. 4 (2006): 365–81. <https://doi.org/10.1177/1206331206292503>. Pg. 368.

22 Sheridan, Joe, and Roronhiakewen "The Haudenosaunee Imagination and the Ecology of the Sacred." *Space and Culture* 9, no. 4 (2006): 365–81. <https://doi.org/10.1177/1206331206292503>. Pg. 374.

A “Western” illustration of William Wordsworth’s ‘Yew-Trees’—conveys the idea of imagining human continuity with nature rather than alongside nature; this challenges Sheridan and Longboat’s condemnation of the “Western imagination”. Wordsworth’s poem indicates that there is a sentience in all worlds, and it is this open-ended imagining of sentience beyond human beings that allows for the presence of climate change and end of the world narratives. However, Wordsworth’s assertion that the “darkness of a world that challenges and resists our discourse” illustrates how the Anthropocene, the Symbiocene, and exclusionary autopoietic construct binaries limits the possibilities of understanding more illuminated worlds.²³ For instance, classifying the Haudenosaunee imagination as simply an imagination undermines its validity.

For these reasons, I propose a rainforest metaphor for climate change and a Haudenosaunee regenerative imagination for a world that does not solely privilege humans but recognizes the interconnectedness of all living beings and the environment. Human imaginations of a present environmental ecology still shape the end of the world through human-centered concerns and fears of an environmental apocalypse. Embracing ideas from multiple imaginations offers an alternative to a human-centric binary world and its possible end. A more inclusive imagination coupled with a rainforest metaphor that recognizes the complexity and limitations of human knowledge offers an opportunity to openly embrace the autopoietic without prejudice within and between the human and non-human.

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²³ Fulford, Tim. “Wordsworth’s ‘Yew-Trees’: Politics, Ecology, and Imagination.” *Romanticism* 1, no. 2 (1995): 272–88. <https://doi.org/10.3366/rom.1995.1.2.272>.

The Effects of Meat Industry Factory Farming on Sustainability and Ethics

Maya Luke

Growing up, children are taught that their meat and food consumption comes from farms around their country. Books such as *The Big Red Farm*, *A Day on the Farm*, *Old McDonald Had A Truck*, and *The Barnyard Dance* convince young children of this fact. These brightly coloured and lighthearted stories about cute animals happy to live on their farms create an unrealistic picture of the meat farming industry, which is intentionally meant to create ignorance towards mass food production. The factory-farming meat industry comprises of large companies with little to no regulatory efforts on how to manage the company or what they are producing. The worst part is that society knowingly supports and continues to adhere to these production practices. Meat, such as chickens, beef, and dairy cows, are kept in small, confined crates for hours just to end up as another product for human consumption. The use of Factory Farming for the mass production of food consumption is unethical, inhumane, and unsustainable. The Canadian government, as well as society becoming complacent due to its influence, is the primary reason for this. These policies and methods of farming are proven to be environmentally ignorant and unsustainable as they progress. Specifically, this is due to the political influence that governments and elected officials have on individuals. Policies and methods need to be changed by politicians and government officials first. Factory farming must implement different strategies through economical and sustainability practices, including changing the treatment of animals and the materials used in the process.

This paper will argue how unsustainable and unethical mass farming is and outline critical calls to action. It will highlight areas in which The Canadian Government can improve, including influence and regulation. It first touches upon the historical background of farming practices, mainly in North America, and then moves on to sustainability issues that mass farming affects. Primary texts supporting this section of the paper are *The National Humane Education Society*, Tony Weis's book *The Industrial Diet*, and *The World Health Organization (WHO)*. It will then focus on the

ethical concerns underlying mass farming industries, highlighting mostly Canadian cases seen within the last two decades. In 2016, *The American Veterinary Medical Association (AVMA)* published its guidelines for the humane slaughter of animals. These guidelines will be used to identify key questions and concerns within these cases. Following this, the paper will zero in on the political aspects of mass farming industries that must also be considered. *The United States Department of Agriculture (USDA)* is a Federal Agency referenced within this debate. It is important to note that since regulations and farming industries are similar between Canada and the United States, case studies and statistics from both countries will be referenced throughout the paper. Primary organizations, such as the WHO, the USDA, and the AVMA, will be used to discuss current laws, policies, and regulations identified by officials in their designated fields.

These methods of food production farming began with the release of the Agricultural Adjustment Act in 1933 by President Franklin D. Roosevelt. This bill aimed to “revitalize struggling farmers” during the Great Depression. This fuelled research towards raising livestock by spending as little money as possible while maximizing production, therefore beginning the birth of industrial agriculture.¹ Once the Great Depression ended and the world entered the Second World War, the need for mass food production and factory jobs further solidified industrial farming. Unfortunately for smaller farms, beginning in the early years of industrial farming and continuing every five years, legislators update this bill and give millions of dollars to agribusiness instead of farmers.² Agribusiness highlights the economic sectors of farming and its effects on small-scale and large-scale businesses. At the beginning of the 1990s, people started to view industrial farming for what it was becoming: a sustainably ignorant, unethical industry that was eradicating small, environmentally sustainable farms. As the industrial farming industries boomed, small, family-owned farms received the label of “free range.” As defined by *Greener Choices*, an organization that educates people on how to become more sustainable, free-range poul-

1 Kuper, Savannah. 2014. “Environmental Leadership, Action and Ethics.” Environmental Leadership Action and Ethics. <https://ed-blogs.columbia.edu/scppx3335-001-2014-1/2014/04/02/the-sham-of-meat-politics/>.

2 Savannah Kuper, “Environmental Leadership, Action and Ethics.”

try involves:

Outdoor runs and pastures offer them the opportunity to forage, which is an important natural behaviour. When given the opportunity, chickens will spend a majority of their active time foraging, which consists of pecking, scratching, harvesting seeds, and eating insects. When chickens are unable to engage in natural foraging behaviours, welfare problems such as feather pecking can arise.³

Feather pecking occurs when chickens repeatedly peck at other's feathers aggressively. It is a result of stressful, uncomfortable living environments. Factory farms provide a hot, tightly confined environment perfect for this type of aggression to develop. Small, local, free-range farming proves to be the most sustainable through its more humane practices and positive impacts on its surrounding physical environments. The benefits of small farming include healthier animals due to less antibiotic use stemming from confined spaces, reduced pesticide and fertilizer use due to healthier agriculture with more space, and more sustainable business since supporting local helps local economies. Their large land areas reduce erosion and help animals contribute to a "natural spreading of manure and carbon in the soil," which leads to increasing biodiversity. As a result, cattle-based carbon emissions are significantly reduced, and pesticide use is minimal if they are used at all.⁴ While it is commonly implied that there are few small farms left, there are still 500 million farming households worldwide, most of which are located in low-to-middle-income countries.⁵ This results in less support from local government authorities and communities, as resources are scarce in those countries, and products are typically more expensive. These small farms make up 84% of all farms across

the globe but only account for 33% of annual global food production, further proving how little space these farmers are given within the industry.⁶

Factory farming is also unsustainable due to the large amounts of animal waste pollution, including producing 400 types of harmful gases.⁷ These gases pollute local waterways and contribute to air pollution, making nearby living conditions hardly bearable for those in the area. Three-quarters of the world's antibiotics are used in farmed animals to prevent them from getting sick in small, cramped conditions. However, from the intense usage of antibiotics comes the consequence of super-bugs. These superbugs are antimicrobial-resistant bacteria, which humans then ingest. These superbugs have caused 1.27 million people to die each year, and it is estimated that by 2050, this will be the leading cause of death globally.⁸ The gross amounts of antibiotics being used in factory farms prove to be unsustainable to the environment, as well as to people.

There are several ethical dilemmas when considering factory farming and its supposed benefits. *The Humane League*, an organization focusing on humane actions nationwide, outlines optimal animal welfare philosophy and legislation, which factory farming actively defies.⁹ According to *The Humane League*, milk and beef cows are likely to live as long as 20 years. However, milk cows are slaughtered after just 4-6 years, one-quarter of their expected life span. The League also discusses the cramped conditions animals are kept in. Right after birth, veal calves are confined to "veal crates," which are "small plastic huts, each with a fenced-in area not much bigger than the calf's body."¹⁰ This does not allow veal to move more than half a metre around them, locking them in one position

3 Oscar. 2021. "What Does Free Range Really Mean?" Greener Choices. <https://www.greenerchoices.org/free-range/>.

4 Noronha, Nicholas. 2022. "Free-Range Grass-Fed Meat: Facts & Sustainability." Mountain America Jerky. <https://mountainamerica-jerky.com/free-range-grass-fed-beef/>.

5 Ramankutty, Navin. 2021. "Are Small Farms Better?" Sustainability Community. <https://sustainabilitycommunity.springernature.com/posts/are-small-farms-better>.

6 Navin Ramankutty, "Are Small Farms Better?"

7 World Animal Protection. 2022. "The Hidden Health Impacts of Factory Farming." <https://www.worldanimalprotection.ca/news/hidden-health-impacts-factory-farming>

8 World Animal Protection, "The Hidden Health Impacts of Factory Farming."

9 Levinson, Aaron. 2023. "The Factory Farming Conundrum: Is It Ethical?" The Edge: A Leader's Magazine. <https://theedgeleaders.com/the-factory-farming-conundrum-is-it-ethical/>.

10 National Humane Education Society. 2015. "Government Regulation of Factory Farms - National Humane Education Society." <https://www.nhes.org/3372-2/>.

for countless periods. Furthermore, the World Health Organization (WHO) estimates that 31 foodborne hazards caused 600 million illnesses and 420,000 deaths in 2010. Factory farms that produce these hazards are responsible for 400 dead zones in water courses worldwide due to excess nitrogen and phosphorous escaping from farms.¹¹

Tony Weis's "The Ecological Footprint: The Global Burden of Industrial Livestock" is a Canadian book outlining further ethical concerns beneath industrial farming. Weis writes, "Individual animals can be seen to be reduced to little more than fungible 'things.'"¹² Similarly, "*The Industrial Diet: The Degradation of Food and the Struggle for Healthy Eating*," written by Anthony Winston, highlights the effects of mass farming on the human diet. Winston takes a different approach, choosing instead to influence government officials to lay out specific parameters around this issue. Julie Pilson, a professor from Carleton University, reviewed Winston's work for the *Canadian Food Studies* Program and wrote: "He also examines the potential for action and the available solutions that could change our current food system. He identifies changes that could promote a food system that sustains the health of the population instead of simply the financial health of the food industry."¹³

However, this is not the only ethical violation that factory farming commits. The methods that farming industries' slaughterhouses use to kill animals include electrocution, upside-down hanging, and bleeding (killing) them using a knife that is forcefully placed in the thoracic cavity of the neck. Exsanguination is declared the "humane" method to kill farm animals. This is done by cutting large blood vessels and letting the organism bleed out. It is important to note that the Slaughterhouse Guidelines state that the animal must be unconscious before it is killed.¹⁴ How-

ever, there are several issues with this legislation. One of the methods of rendering organisms unconscious before euthanasia is by using carbon dioxide stunners. This equipment is used when several livestock are in the stun box at once. However, when the number of livestock in the chamber is too large, there is not enough carbon dioxide for all the organisms. This leads to a partially conscious death, which is inhumane.

Another way in which Slaughterhouses practice inhumane euthanasia is seen in their protocol concerning poultry. Before being "bled," poultry are hung upside down by their hock joint (ankle joint) and then dragged through a stunner water bath. This consists of a large container of electrified water. A common issue with the electric stunning of poultry is when birds do not make sufficient contact with the bath, either due to the bird's smaller size or by setting the stunner amperage too low. If the bird is unconscious when it enters the bleeder and the automatic throat cutter or backup person fails to slit its throat, it can enter the feather removal stage partially conscious. The unethical practices occur all too often in North American factory farming, leading to the unnecessary suffering of all the livestock in question.¹⁵ An example of this is Maple Lodge Farms, a food processing company in Mississauga, Ontario. CTV News released an article in 2015 outlining undercover camera footage that revealed the horrific things that occur in poultry production.¹⁶ Even though Maple Lodge Farms claims on its website that they treat birds "humanely and with respect," the birds are thrown onto a conveyor belt in crates and then hung upside down. An employee who asked not to be named, nicknamed John, told CTV News, "Each employee is expected to hang 20 birds a minute." Therefore, these birds are being suspended aggressively and violently in order to follow this strict time expectation. John then turned to Guelph University expert Profes-

11 World Health Organization. 2017. "Stop Using Antibiotics in Healthy Animals to Preserve Their Effectiveness." <https://www.who.int/news/item/07-11-2017-stop-using-antibiotics-in-healthy-animals-to-prevent-the-spread-of-antibiotic-resistance>.

12 Weis, Tony. 2018. "Ghosts and Things: Agriculture and Animal Life." MIT Press. <https://direct.mit.edu/glep/article-abstract/18/2/134/14912/Ghosts-and-Things-Agriculture-and-Animal-Life?redirectedFrom=fulltext>.

13 Winson, Anthony. 2013. "View of the industrial diet." *Canadian Food Studies*, UBC Press. <https://canadianfoodstudies.uwaterloo.ca/index.php/cfs/article/view/41/18>.

14 American Veterinary Medical Association. "AVMA guidelines for the Humane Slaughter of Animals: 2016 edition." <https://www.avma.org/sites/default/files/resources/Humane-Slaughter-Guidelines.pdf>.

15 American Veterinary Medical Association, "AVMA guidelines for the Humane Slaughter of Animals."

16 CTV News. 2015. "Hidden Camera Investigation Reveals Chicken Slaughterhouse Practices." W5. <https://www.ctvnews.ca/w5/hidden-camera-investigation-reveals-chicken-slaughterhouse-practices-1.2299278#:~:text=Nearly%20half%20a%20million%20birds,birds%20humanely%20and%20with%20respect>.

sor Ian Duncan to determine if this was acceptable. Duncan states, “That’s unacceptable. It puts huge pressure on the hip joint and there’s also a danger that when it comes to where the bird is to be stunned, it won’t go into the stunning bath properly and won’t meet the knife that’s going to cut its neck.”¹⁷ In 2013, the company was fined \$100,000 for its treatment of animals. They now have Mercy for Animals Canada, the Canadian Food Inspection Agency, and the Ontario Society for the Prevention of Cruelty to Animals on their backs.

There are also political aspects of factory farming to consider. The unethical methods mentioned throughout this article are well-known by the general public to be ethical and policy-breaching practices. This begs the question of why there has been no policy change regarding these issues. The United States Department of Agriculture (USDA) is the primary federal agency that regulates animal food production in the United States. The USDA is made up of several smaller departments and oversees the Federal Agriculture Laws Act. This Federal Act covers the Humane Slaughter Act, which mandates farm animals to be unconscious prior to their slaughter, yet non-poultry birds and fish are excluded from these.¹⁸ Ag-Gag laws, which are prevalent in both the U.S. and Canada today, became relevant in the US in the 2010s. These laws were developed to silence animal advocacy groups from reporting incidents of unethical treatment and sustainable practices. The term is coined from “gag,” meaning to silence animal activists from calling out animal agriculture industries. As more people started to film and report incidents of suffering animals, Alberta formally passed its first Ag-Gag law.¹⁹ Politicians claimed, after both Ontario and Manitoba released their own Ag-Gag laws in 2020 and 2021 respectively, that “these laws were only meant to discourage people from trespassing on farms.”²⁰ Their argument stood its ground because it mandates that no person without permission can enter these farms. However, if animal activists cannot evaluate agriculture industries be-

cause they are “not allowed” to enter, then industries will face even worse accusations and pleas for more information on treatment methods. Additionally, the federal government has not provided any inspectors to monitor animal and environmental treatment on farms, showing a gap that must be fixed.

There have been several instances that led to the creation of the Ag-Gag laws. As seen in the above text, Ag-Gag laws are still prevalent in both the US and Canada, and therefore examples from both countries serve as case studies. In British Columbia, video footage from Chilliwack Cattle documented a cow being hung in the air by her neck. In Ontario, an investigation has opened into Paragon Farm, where a “whistle-blower” employee documented violent abuse of farm animals, who were suffering injections and illness without veterinary care. Also in Ontario, footage from a Kitchener facility was released in 2014 showing turkeys being beaten with shovels.

Preventing animal rights advocates and journalists from shining light on abuse and cruelty towards animals and the environment violates freedom of expression and the right to free speech. In Canada, more than 40 leading constitutional and criminal law experts have expressed concerns about how this prevention violates the Charter of Rights and Freedoms.²¹ In six American states, courts found these laws to be unconstitutional violations of the right to free speech. Another example of an Ag-Gag law would be in Alberta, where the *Trespass Statutes (Protecting Law-Abiding Property Owners) Amendment Act* prohibits entry onto agricultural property under “false pretences.” This act, more commonly known as Bill 27, was implemented to protect property owners from trespassing. The bill increased maximum fines to deter trespassing and protect farmers from harassment by protestors, with fines increasing to \$10,000 for a first offence and \$25,000 for subsequent offences and prison time for up to 6 months.²² Elizabeth Finnis, a professor at the University of Guelph in Ontario, wrote a research ar-

17 CTV News, “Hidden Camera Investigation Reveals Chicken Slaughterhouse Practices.”

18 National Humane Education Society. 2015. “Government Regulation of Factory Farms - National Humane Education Society.” <https://www.nhes.org/3372-2/>.

19 Animal Justice. 2023. “Fighting Canada’s Dangerous ‘Ag Gag’ Laws.” <https://animaljustice.ca/issues/ag-gag-laws>.

20 Animal Justice, “Fighting Canada’s Dangerous ‘Ag Gag’ Laws.”

21 Animal Justice, “Fighting Canada’s Dangerous ‘Ag Gag’ Laws.”

22 Government of Alberta. 2023. “Protecting Property Owners.” <https://www.alberta.ca/protecting-property-owners>.

title titled: “*A livelihood to feel good about: Enacting values around animals, land, and food outside of the agricultural core.*” The article studied smaller-scale farmers in the Parry Sound district, Ontario, Canada. Her findings suggest that when farmers enact their personal morals and values into their farming, it directly reflects how ethically they care for their animals and land.²³

Factory farming being used as a way of mass-producing food is unethical, inhumane, and unsustainable. The treatment of animals within this system is inhumane and breaks multiple cruelty legislations, yet the government does not take action at any level. Governments should do more by implementing laws regarding the humanity of factory farms, as Ag-Gag laws prevent farm inspections that actually work. Provincial governments, especially Alberta and Ontario, must advocate for this issue and take additional steps to refine their mandates regarding animal cruelty in factory farming. Large agri-business industries are unsustainable as they overuse resources like water and harm their surrounding environments due to a lack of biodiversity and care for the land. In order to break this negative trend that has persisted since Roosevelt’s 1933 Act, we must work towards supporting the millions of local farms across the globe.

Governments must work to make local agriculture more accessible and support small businesses struggling against factory farms. At the individual level, that often looks like eating less meat or an entirely plant-based diet, if possible. Supporting local, small, free-range farms is another way to fight against factory farming. These farms promote sustainable, humane practices and produce on a smaller scale. This ensures each animal is treated with the respect and care it deserves. Change can not be achieved if the global community does not unite to fight against practices that don’t align with our morals, ethics, and laws. We must not become complacent to the government cutting down our core values and letting ourselves ruin our bodies and our planet. Global collaboration is necessary to end factory farming and the driving factor of governmental laws. However, change starts small. Through individual actions and global outreach, we can create healthier communities, systems, and a more humane tomorrow.

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The Political Ecology of LNG Development in B.C.

Katelin Boles

Introduction

As the global climate continues to warm at an alarming rate, the need to transition away from fossil fuels is becoming more and more critical. In North America, Liquefied Natural Gas (LNG) is growing within the energy sector as a possible ‘transition fuel.’ LNG is natural gas that is cooled to a low temperature and condensed to a liquid, allowing large quantities to be stored and transported.¹ In the Canadian context, British Columbia (BC) has faced a significant push for LNG project development due to the province’s large number of natural gas reserves. This push is grounded in the assertion that LNG provides an ‘economic’ and ‘clean’ energy solution to typical fossil fuel energy sources, such as coal and oil. However, this assertion provides a greenwashed approach to the LNG industry having an environmentally friendly image while also providing market growth when the reality is that many socioenvironmental impacts are not being considered. By utilizing a political ecology framework, this paper will first delve into the context of the LNG industry, paying particular attention to the BC context and how historical legacies translate into LNG projects today. Afterwards, this paper will explore the various socio-environmental impacts of LNG project development in BC. To conclude the paper, we will establish the risks and implications of LNG development, particularly to Indigenous communities, and establish ways forward to transparency and consent within energy development decisions. Ultimately, this paper argues that while LNG is commonly framed as a low-carbon and economically beneficial energy system for climate change mitigation, the case of BC demonstrates how LNG development risks the perpetuation of ongoing settler-colonial structures through the push for a ‘clean’ energy solution. This paper asserts that proper Indigenous consultation and transparency in policy and project creation must occur to ensure that the significant risks associated with LNG production

are thoroughly considered in ongoing and future project development.

Political Ecology Framework

A political ecology framework will be utilized as the analytical basis for this essay. Political ecology is a theoretical framework that explores how human activities shape ecological processes.² According to this framework, social and ecological processes have an interdependent relationship, and if economic and technical solutions do not recognize this relationship, it can further embed ecological crises.³ Political ecology, therefore, works to understand how cultural and historical factors influence nature and must be understood in their various spatial contexts.⁴ Spatially, political ecology recognizes the impact of how the global political economy influences the environment. For example, the development of a project is not just localized—it is a result of the influence of multiple actors and networks, all working within transnational change and global political economics.⁵ This framework will be instrumental in examining how historical and cultural factors are heavily impacted by the LNG project’s environmental risks within the BC context. More specifically, this examination will focus on the impacts on Indigenous communities, demonstrating how current economic and technical solutions fail to consider the interdependent relationship between these communities and the land, creating significant socio-environmental consequences. Overall, this framework will provide a secure understanding of how the global political economy and push for economic development also play a substantial role in LNG and natural gas development in BC and North America.

LNG Industry Context

First, we must examine why the LNG industry has been a growing segment of the energy sector in North America. The rapid expansion of natural gas

1 NEB. Rep. *Liquefied Natural Gas: A Canadian Perspective*, 2009. https://publications.gc.ca/collections/collection_2009/one-neb/NE23-147-2009E.pdf, 1

2 Adkin, Laurie. *First World Petro-Politics: The Political Ecology and Governance of Alberta*. Edited by Laurie Adkin. Toronto: University of Toronto Press, 2018, 5

3 Adkin, Laurie, *First World Petro-Politics: The Political Ecology and Governance of Alberta*, 5

4 Adkin, Laurie, *First World Petro-Politics: The Political Ecology and Governance of Alberta*, 6

5 Adkin, Laurie, *First World Petro-Politics: The Political Ecology and Governance of Alberta*, 6

production is primarily attributed to the growth of natural gas production in the United States.⁶ Natural gases are viewed as a low-carbon option, marking it as a ‘transition fuel’ to a low-carbon economy.⁷ In a world increasingly advocating for the reduction of fossil fuels due to their environmental impact, natural gas presents an option that is seemingly ‘economically competitive’ and ‘cleaner’ than other forms of energy, such as coal and oil.⁸ Additionally, as natural gas has been proven to be a viable option, its stability and feasibility draw much appeal.⁹

In the Canadian context, the LNG sector has been pushed as a frontrunner to transition Canada from its dependence on non-renewable resources. According to the National Energy Board, “Canada ranks third globally in proven oil reserves and is the world’s fifth largest producer and exporter of natural gas”.¹⁰ LNG is expected to become a primary driver of Canada’s energy sector, working on transitioning the industry from its heavy reliance on fossil fuels and meeting commitments for climate change mitigation.¹¹ However, LNG’s framing as a low-carbon solution fails to account for its possible adverse impacts on both the land and people. These risks will be further explored through the case of BC.

British Columbia Context

BC represents an area where LNG development is being pushed to capitalize on the existing natural gas reserves. However, we must delve into the settler-colonial history, which underlines the basis of resource

extraction in Canada. Settler colonialism is inherently facilitated through land dispossession, separating Indigenous communities from the lands and waters they have lived on for thousands of years. Ultimately, the goal of this forced assimilation was “to remove Indigenous people from their land so that Europeans could settle, develop, and profit from it”.¹² This process often occurred through treaty-making, which would consolidate Indigenous lands for European settlement.¹³ As such, the lands were left open for resource extraction and development—a process that continues today on Indigenous territory.¹⁴ Colonial history has significant implications for Indigenous communities and resource development today, as communities continue to fight for their sovereignty and resist the imposition of extraction on their territories.

By examining the historical context, we can see how the perpetuation of colonial structures persists through the modern-day development of LNG projects in BC. While BC does not carry out the same level of carbon-intensive extraction as Alberta, “with the declining of conventional reserves, the potential for Canada’s gas future lies in developing shale and tight gas, which is found in four substantial plays in British Columbia”.¹⁵ The BC government has perpetuated the development of LNG as an important ‘transition fuel’ and ‘climate solution’ due to it being a ‘cleaner’ transportation fuel compared to oil-based fuels and its lower greenhouse gas production compared to coal-fired power plants.¹⁶ For example, the Coastal GasLink pipeline website, a project approved by the BC gov-

6 Avraam, Charalampos, Daniel Chu, and Sauleh Siddiqui. “Natural Gas Infrastructure Development in North America under Integrated Markets.” *Energy policy* 147 (2020): 111757-, 6

7 Avraam, Charalampos, Daniel Chu, and Sauleh Siddiqui. “Natural Gas Infrastructure Development in North America under Integrated Markets,” 2

8 Avraam, Charalampos, Daniel Chu, and Sauleh Siddiqui. “Natural Gas Infrastructure Development in North America under Integrated Markets,” 2

9 Avraam, Charalampos, Daniel Chu, and Sauleh Siddiqui. “Natural Gas Infrastructure Development in North America under Integrated Markets,” 2

10 NEB. “Canada’s Energy Future 2016: Energy Supply and Demand Projections to 2040.” National Energy Board, 2016. <https://www.neb-one.gc.ca/nrg/ntgrtd/ft/2016/index-eng.html#s1>, n.p.

11 Luke, Lindsay, and Bram Noble. “Consideration and Influence of Climate Change in Environmental Assessment: An Analysis of British Columbia’s Liquid Natural Gas Sector.” *Impact assessment and project appraisal* 37, no. 5 (2019): 371–381, 371

12 Beattie, Hillary A. “‘What About the Salmon?’ A Critical Analysis of the Pacific Northwest LNG Project in British Columbia.” *Journal of Aboriginal Economic Development* 10, no. 2 (2017): 85–99, 87

13 Armstrong, Chelsey Geralda, and Christie Brown. “Frontiers Are Frontlines: Ethnobiological Science Against Ongoing Colonialism.” *Journal of ethnobiology* 39, no. 1 (2019): 14–31, 15

14 Armstrong, Chelsey Geralda, and Christie Brown. “Frontiers Are Frontlines: Ethnobiological Science Against Ongoing Colonialism,” 15

15 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas.” *BC studies*, no. 194 (2017): 11–3

16 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas.” *BC studies*, no. 194 (2017): 11–4

ernment, explicitly states that “natural gas is one of the world’s cleanest and safest energy sources”.¹⁷ This language legitimizes and establishes LNG as the gateway to BC’s desired low-carbon economy while still providing immense economic benefits to the province, such as through increased employment opportunities, particularly for Indigenous communities.¹⁸ However, this legitimization facilitates the continued exploitation of Indigenous territory without proper consultation or transparency around the true environmental impact.

For example, the Pacific NorthWest LNG Project has been the source of much unrest in BC. This project involves a facility operated by Petronas on Lelu Island, off the central coast of BC, that would prepare LNG for export to Asia.¹⁹ The facility “would receive roughly 3 billion cubic feet of natural gas a day from northeast [BC] and would produce 18 million tons of LNG per year”.²⁰ Petronas pushes this project as both a positive development for national economic growth and global environmental sustainability.²¹ For instance, Petronas cites that the Pacific NorthWest LNG project “would create up to 4500 jobs at its peak,” as well as provide education and training for surrounding Indigenous communities to work at the facility.²² Ecologically, Petronas asserts that the LNG project would reduce air pollution and climate change since the LNG will be exported to Asian countries, where coal is still primarily used for growing energy demand (ibid). Additionally, according to Tim McMillan, CEO of the Canadian Association of Petroleum Producers, “LNG could support the expansion of renewable energy such as solar and wind by complementing their intermittent output”.²³ As such, Petronas continues to push its project.

The Pacific NorthWest LNG project exempli-

fies how LNG development portrays a form of ‘greenwashing,’ often creating more harm than good for surrounding land and marginalized communities. The Pacific NorthWest project comes to Lelu Island with the promise of economic prosperity for the Indigenous Peoples. However, the development of this project has sparked heated controversy among Indigenous communities due to its potential impacts on their people and land. According to a BBC article documenting protests over the project, deep concerns were raised from the community regarding the impact on salmon populations, habitat, and potential greenhouse gas emissions.²⁴ The Narwhal also outlines how the Pacific NorthWest LNG plant would have been the “single largest source of emissions in the country” and a precarious spot for the salmon population to thrive.²⁵ The development of the Pacific NorthWest LNG project demonstrates how the push for LNG in BC can create significant risks for the Indigenous communities and environment despite its claims to the contrary. The following section will further demonstrate the risks and implications of LNG development to the land and people by outlining the various socio-environmental impacts of LNG projects in BC.

Socio-Environmental Impacts

As the aforementioned example demonstrated, LNG projects in BC that are pushed under the guise of economic and environmental prosperity fail to present a complete picture, omitting significant adverse impacts. One of these impacts can be seen through the impact on wildlife and food systems. Research from LNG projects within the Fort Nelson First Nation territory has demonstrated that project development impacts wildlife due to habitat disturbance from the operations, contaminating waterways.²⁶ This contami-

17 Coastal GasLink. “LNG 101.” Coastal GasLink. Accessed December 3, 2023. <https://www.coastalgaslink.com/about/lng-101/>.

18 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas,” 4

19 Beattie, Hillary A. ““What About the Salmon?” A Critical Analysis of the Pacific Northwest LNG Project in British Columbia,” 88

20 Beattie, Hillary A. ““What About the Salmon?” A Critical Analysis of the Pacific Northwest LNG Project in British Columbia,” 88

21 Beattie, Hillary A. ““What About the Salmon?” A Critical Analysis of the Pacific Northwest LNG Project in British Columbia,” 90

22 Beattie, Hillary A. ““What About the Salmon?” A Critical Analysis of the Pacific Northwest LNG Project in British Columbia,” 90

23 CBC News. “Premier Notley Hopeful Pacific Northwest LNG Approval Will Benefit Alberta | CBC News.” CBCnews, September 28, 2016. <https://www.cbc.ca/news/canada/calgary/petronas-lng-approval-pipeline-1.3782453>.

24 BBC. “Petronas Cancels Pacific Northwest LNG Project in Canada.” BBC News, July 25, 2017. <https://www.bbc.com/news/world-us-canada-40719926>.

25 Gilchrist, Emma. “Pacific Northwest LNG Is Dead: 5 Things You Need to Know.” The Narwhal, November 9, 2023. <https://thenarwhal.ca/pacific-northwest-lng-dead-5-things-you-need-know/>.

26 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom.” BC studies, no. 184 (2015): 45-, 4-5

nation is partially responsible for the increased rates of animals with sickness and cancer.²⁷ Moreover, the October 2014 Coastal Gaslink Pipeline report, which outlines the possible environmental impacts of the project, discusses how the Coastal Gaslink project would result in habitat clearing for the at-risk Woodland Caribou species.²⁸ In addition to the Woodland Caribou, the report further details numerous other species that would be affected by the project. These impacts can also significantly affect Indigenous communities that rely on the land and wildlife for traditional food sources, hunting, and cultural practices. Therefore, these effects must be considered in their social context to ensure the land is protected for community wellbeing.

Waterways are another significant aspect of the environment that these projects severely impact. Currently, there is “no independent, publicly available assessment of the implications of water use at this scale or the dangers of contamination in the northeast”.²⁹ However, significant concerns remain about how natural gas development can contaminate and deplete drinking water, creating carcinogens.³⁰ Fracking, which is used in LNG production, is a very water-intensive process and requires many chemicals.³¹ With fracking, there are concerns that chemicals can leach into the ground, contaminating underground water resources.³² Ultimately, these aforementioned risks demonstrate the significant environmental impacts associated with LNG projects. Therefore, there must be greater transparency in ensuring that these risks are

widely known.

Furthermore, LNG development does not only impact wildlife and the natural environment—human wellbeing and health are also affected. The emissions from LNG plants and their health impacts on air quality are under-researched.³³ Preliminary work and research on natural gas development in northeast BC have demonstrated that natural gas development could impact the local air quality.³⁴ The October 2014 Coastal Gaslink Pipeline report also discusses how the project could result in “increased concentrations of one or more criteria area contaminants”.³⁵ Without this concrete data on air quality, there remains a deep concern about how the ecological impacts of natural gas development could have on long-term health and overall wellbeing, which is not being accounted for in public policy.³⁶ This is a significant information gap, and it is crucial to close it for public health.

Within these examples of the socio-environmental impacts, the Indigenous communities are often the most severely impacted by these projects. Indigenous communities have a longstanding cultural history to the land, and resource extraction projects often threaten their traditional and cultural wellbeing. For example, within the Gitxsan of the northwestern BC community, “the landbase is part of Gitxsan identity and that identity emerges from the nature-culture nexus that connects specific communities to a specific place”.³⁷ Indigenous communities have developed a holistic worldview that emphasizes the interconnectedness of humans to the land.³⁸ However,

27 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom,” 4-5

28 EAO. Rep. *Coastal Gaslink Pipeline Assessment Report*, 2014. <https://projects.eao.gov.bc.ca/api/document/5e459849c981fe0021018fb0/fetch/CGL.pdf>.

29 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom,” 8

30 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas,” 2

31 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas,” 2

32 Graham, Nicolas. “State-Capital Nexus and the Making of BC Shale and Liquefied Natural Gas,” 2

33 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom,” 8

34 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom,” 8

35 EAO. Rep. *Coastal Gaslink Pipeline Assessment Report*, 2014. <https://projects.eao.gov.bc.ca/api/document/5e459849c981fe0021018fb0/fetch/CGL.pdf>.

36 Garvie, Kathryn H, Lana Lowe, and Karena Shaw. “Shale Gas Development in Fort Nelson First Nation Territory: Potential Regional Impacts of the LNG Boom,” 8

37 Armstrong, Chelsey Geralda, and Christie Brown. “Frontiers Are Frontlines: Ethnobiological Science Against Ongoing Colonialism,” 25

38 Beattie, Hillary A. “‘What About the Salmon?’ A Critical Analysis of the Pacific Northwest LNG Project in British Columbia,” 86

this connection and cultural knowledge are often not acknowledged within government-assessment processes for project development.³⁹ With the wildlife, food, medicine, and water impacted through resource development on territory, so are the health and cultural well-being of the communities.

Risk and Implications

Ultimately, the push for LNG development in BC risks perpetuating ongoing settler colonial structures through the push for a ‘clean’ energy solution. Critical geographer Bruce Braun discusses ‘buried epistemologies,’ referring to how everyday relations become naturalized or ‘common-sense’.⁴⁰ This concept of ‘buried epistemologies’ can also refer to how colonial practices become normalized within everyday processes, such as resource extraction.⁴¹ These epistemologies were introduced through settler colonialism and have perpetuated the understanding of separation between nature and people through these settler-colonial structures.⁴² Christine Smith-Martin, a member of the Tsimshian First Nation, defied the Pacific Northwest LNG project: “The salmon that we’re talking about in our community is a very important piece, and you’re not addressing the salmon, what about the salmon?”⁴³ This act of defiance underscores that although an aspect like salmon may appear insignificant within the settler structures of resource extraction, in reality, it is vital to the health, wellbeing, and tradition of the local community. Failing to address the significance of salmon and its cultural role beyond the

economy contributes to this reinforcement of colonial structures through LNG development, rather than addressing the buried epistemologies within resource extraction processes.

With this perpetuation of settler colonial structures, there also runs the risk of failing to properly abide by the duty to consult or free, prior, and informed consent (FPIC) with development on Indigenous territory. FPIC is outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which states that no state may commence development on Indigenous territory without the impacted community’s free, prior, and informed consent.⁴⁴ In Canada, the duty to consult relates to the Crown’s fiduciary relationship with Indigenous communities, requiring the state to act respectfully when Aboriginal rights are at risk.⁴⁵ Therefore, it remains important that LNG projects and policies are continually cognizant of duty to consult responsibilities.⁴⁶

However, the duty to consult and FPIC has not been fully respected, as demonstrated by the Wet’suwet’en Nation’s Coastal Gaslink pipeline protests. In 2020, protests against the development of the Coastal Gaslink LNG pipeline reached a peak, driven by concerns over its impact on the land of the Wet’suwet’en Nation. The protests were met with violence from police forces, with a leaked report outlining how police “had been prepared to shoot Indigenous activists and had snipers on hand”.⁴⁷ According to Amnesty International, the criminalization of land defenders since 2018 has been escalating. In the last three years,

39 Armstrong, Chelsey Geralda, and Christie Brown. “Frontiers Are Frontlines: Ethnobiological Science Against Ongoing Colonialism,” 25

40 Braun, Bruce Willems. “Buried Epistemologies: The Politics of Nature in (Post)Colonial British Columbia.” *Annals of the Association of American Geographers* 87, no. 1 (1997): 3–31, 5

41 Braun, Bruce Willems. “Buried Epistemologies: The Politics of Nature in (Post)Colonial British Columbia.” *Annals of the Association of American Geographers* 87, no. 1 (1997): 3–31, 5

42 Braun, Bruce Willems. “Buried Epistemologies: The Politics of Nature in (Post)Colonial British Columbia.” *Annals of the Association of American Geographers* 87, no. 1 (1997): 3–31, 3

43 Beaumont, Hilary. “Everything You Need to Know about the \$36-Billion LNG Project That Has Turned Many First Nations against Trudeau.” *VICE*, September 28, 2016. <https://www.vice.com/en/article/gqkn7m/everything-you-need-to-know-about-the-36-billion-lng-project-that-is-turning-many-first-nations-against-trudeau>.

44 United Nations. Rep. *United Nations Declaration on the Rights of Indigenous Peoples*, 2007. https://www.un.org/esa/socdev/unpfi/documents/DRIPS_en.pdf.

45 Seely, A. David, and Alexander MacDonald. “Anatomy of a Liquefied Natural Gas Receiving Terminal in Atlantic Canada - an Overview of the Legal and Regulatory Hurdles.” *Dalhousie law journal* 30, no. 2 (2007): 491-, 509

46 Seely, A. David, and Alexander MacDonald. “Anatomy of a Liquefied Natural Gas Receiving Terminal in Atlantic Canada - an Overview of the Legal and Regulatory Hurdles,” 212

47 Rowell, Andy. “Un Calls for ‘Free, Prior and Informed Consent’ from First Nations for Canadian Pipelines.” *Oil Change International*, January 10, 2020. <https://priceofoil.org/2020/01/10/un-calls-for-free-prior-and-informed-consent-from-first-nations-for-canadian-pipelines/>.

74 land defenders were arrested and detained in three large-scale police raids, and 19 were charged with criminal contempt in 2022.⁴⁸ Despite the protests, the BC Supreme Court authorized the pipeline construction, sparking widespread awareness and controversy regarding the respect for consultation and FPIC.⁴⁹ The United Nations' call for the project to halt its operations before gaining consent from the Wet'suwet'en Nation went unheeded, and Wet'suwet'en Hereditary Chiefs unsuccessfully petitioned the government to respect their legal Aboriginal titles to the lands.⁵⁰ This disregard for proper consent and consultation illustrates how the legacy of settler colonialism and lack of transparency in resource extraction is perpetuated, particularly in the context of LNG development in BC.

Overall, there is the hefty risk of labelling LNG as a transition fuel, as it works to legitimize this energy development without significant awareness of the established implications and impacts. Currently, there needs to be more scientific research into the long-term socioenvironmental impacts which LNG development can have. The BC case represents a clear example of where more assessments and policy regulations are needed and more transparency within the LNG processes.⁵¹ Indigenous communities in particular face high impacts on their well-being, meaning that the FPIC and duty to consult must be respected. However, this has yet to happen. The push to characterize natural gas as a 'clean' transition fuel champions and legitimizes the state's push for resource development without allowing space for important questions about what is uncertain about this energy source.⁵²

Ways Forward

The Pacific NorthWest LNG project can again be taken as an example to illuminate the way forward. Despite being, according to BBC, "one of the largest resource development initiatives in the country", the project was cancelled by Petronas in 2017 due to the surrounding controversy.⁵³ This successful resistance sparked nationwide news as the Lax Kw'alaams (Tsm'syen) band of over 300 community members voted unanimously "to turn down \$1.15 billion offered by LNG developers for access to Lelu Island" for the Pacific NorthWest project.⁵⁴ This is just one example of how resistance can create great change in energy development. The instance of the Pacific NorthWest LNG project highlights how critical Indigenous voices are to be involved and amplified in energy development decisions and policy creation.

In addition to the importance of resistance, stronger Environmental Assessment (EA) practices can significantly mitigate the impacts of LNG development decisions. As Luke and Noble argue, climate change must be properly considered within EAs for LNG projects, asserting that related issues receive little attention.⁵⁵ It can be argued that the socioenvironmental impacts are not being properly considered as well. In February 2023, the Woodfibre LNG project in Squamish, BC, received heavy protest for not recognizing marine mammal and water quality impacts within the projects' EA.⁵⁶ Project opponents stated that many marine mammals, including seals and sea lions, would be exposed to sound levels equivalent to shotgun blasts.⁵⁷ Many also expressed concerns about

48 Amnesty International. "Criminalization of Wet'suwet'en Land Defenders." Amnesty International, March 6, 2023. <https://www.amnesty.org/en/latest/news/2023/03/criminalization-wetsuweten-land-defenders/>.

49 Rowell, Andy. "Un Calls for 'Free, Prior and Informed Consent' from First Nations for Canadian Pipelines."

50 Rowell, Andy. "Un Calls for 'Free, Prior and Informed Consent' from First Nations for Canadian Pipelines."

51 Stephenson, Eleanor, Alexander Doukas, and Karena Shaw. "Greenwashing Gas: Might a 'Transition Fuel' Label Legitimize Carbon-Intensive Natural Gas Development?" *Energy policy* 46, no. 1 (2012): 452–459, 458

52 Stephenson, Eleanor, Alexander Doukas, and Karena Shaw. "Greenwashing Gas: Might a 'Transition Fuel' Label Legitimize Carbon-Intensive Natural Gas Development," 458

53 BBC. "Petronas Cancels Pacific Northwest LNG Project in Canada." BBC News, July 25, 2017. <https://www.bbc.com/news/world-us-canada-40719926>.

54 Armstrong, Chelsey Geralda, and Christie Brown. "Frontiers Are Frontlines: Ethnobiological Science Against Ongoing Colonialism," 19

55 Luke, Lindsay, and Bram Noble. "Consideration and Influence of Climate Change in Environmental Assessment: An Analysis of British Columbia's Liquid Natural Gas Sector." *Impact assessment and project appraisal* 37, no. 5 (2019): 371–381, 371

56 Pawson, Chad. "Woodfibre LNG Project near Squamish, B.C., Seeks Amendments to Environmental Assessment | CBC News." CBCNews, February 5, 2023. <https://www.cbc.ca/news/canada/british-columbia/woodfibre-ling-squamish-b-c-environmental-assessment-changes-1.6737625>.

57 Pawson, Chad. "Woodfibre LNG Project near Squamish, B.C., Seeks Amendments to Environmental Assessment."

the EA's broad language regarding water quality and how wildlife and human health may be adversely impacted.⁵⁸ Overall, an impactful next step would be to ensure that EAs are made in heavy collaboration with Indigenous voices and are stronger in the legislation they propose for mitigating the socioenvironmental impacts of LNG development. While an EA is not the be-all-end-all means for solving the impacts of these projects, it is still imperative that energy policies appropriately and explicitly address the intersectional impacts of development to the land, wildlife, and human health. Doing so can establish higher compliance with socioenvironmental regulations within LNG development.

Conclusion

Ultimately, proper consultation and transparency must occur within project and policy creation to ensure that ongoing settler colonial structures are not further perpetuated through ongoing LNG project development. Exploring the case of BC, this essay analyzed the socioenvironmental impacts of LNG development and the possible risks and implications for these projects. Particularly centering on the impacts on Indigenous communities, the ongoing settler colonial structures within this industry were addressed. Overall, within a political ecology framework, future LNG development must consider both the interdependency of nature's social and ecological factors and consider how historical legacies will impact some communities more than others. This interdependent relationship is often disregarded within the push for a 'green' economy, creating immense impacts for extractive-affected Indigenous communities. Proper consultation and consent must occur to ensure that Indigenous voices are amplified in LNG development discussions and policy creation and that community well-being is reprioritized over economic development.

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58 Pawson, Chad. "Woodfibre LNG Project near Squamish, B.C., Seeks Amendments to Environmental Assessment."

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