# Reproductive Rights in Future Space Habitats:
## A Feminist Ethical Perspective

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## ABSTRACT[1,2]

As plans for human habitation beyond Earth accelerate, reproductive autonomy remains a critical yet underexplored issue in space governance. This article examines the potential ways reproductive rights could be protected—or compromised—in future space habitats, arguing that reproduction should be viewed as both an ethical and political concern, rather than merely a logistical one. Drawing on feminist theories—particularly intersectionality, reproductive justice, and embodied autonomy—this article explores how future reproductive governance might resist coercive patterns from Earth's past. Historical examples such as the eugenics movement, China's one-child policy, and Romania's pronatalist regime illustrate how state interests have historically overridden individual rights under the guise of societal good. In space, technologies like genetic selection or enhancement could similarly be framed as essential for survival; however, without ethical safeguards they risk becoming tools of control. This article combines critical discourse analysis of policy documents with readings of speculative literature, including science fiction, to examine how reproductive futures are imagined. It argues that space ethics should prioritize autonomy, consent, and systemic equity over efficiency or demographic imperatives. By foregrounding feminist theory, this paper offers a fresh perspective and cautions against replicating colonial and patriarchal governance models, advocating for justice-centered policies in future space habitats.

## REPRODUCTION IN SPACE: A SOCIAL AND ETHICAL FRONTIER

> *We have the power to create the world we want to live in, both in fiction and reality.*
> — Nichelle Nichols, who broke barriers as Lt. Uhura on *Star Trek*, was a passionate activist and NASA recruiter who worked to diversify the space program.

As humanity shifts its gaze toward the possibility of inhabiting space, conversations about technology, engineering, and sustainability often take center stage. Once the domain of science fiction, the prospect of establishing human habitats beyond Earth is becoming an increasingly focused area of scientific, corporate, and government ambition.[3] Expansion into

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2 This abstract was compiled with the assistance of ChatGPT. The article was entirely written by the author.
3 Igor Levchenko, Shuyan Xu, Stéphane Mazouffre, Michael Keidar, and Kateryna Bazaka, "Mars Colonization: Beyond Getting There," *Global Challenges* 3, no. 1 (2018): 1800062.

space is widely seen as the ultimate goal for human progress. But while the rhetoric of the final frontier evokes wonder and hope, it also echoes uncomfortable themes of historical exploitation and conquest—reminding us that progress often benefits some at the expense of others.[4]

Long-term human presence will require more than just advanced infrastructure—it will raise fundamental questions about how life is sustained, managed, and reproduced. We must consider not only how we will survive in space, but also what kinds of societies we will build. As Erika Nesvold notes in *Off Earth,* a truly self-sufficient habitat must be able to maintain a stable population without relying on steady immigration from Earth. Human reproduction offers a built-in mechanism for population growth—but with it comes a flurry of ethical challenges, particularly around reproductive rights and governance.[5]

In this context, reproduction—who is allowed or expected to have children, under what conditions, and with what rights—will become a central concern in the design of spacefaring societies. Yet discussions about space often focus narrowly on technical survival-oriented concerns, overlooking how reproductive governance has long reflected broader systems of control. On Earth, reproduction has never been a neutral domain, and this is especially important to recognize within the Western space sector, which remains overwhelmingly dominated by cis-white men. Structural barriers have systematically constrained women's participation, particularly in shaping the ethical, political, and social direction of space initiatives. Women still comprise only 20% of the NASA workforce, and black women, indigenous women, and other women of color remain severely underrepresented across the global space sector.[6] When women are included in discussions about space, their presence is often reduced to considerations of reproductive function rather than their potential contributions as scientists, engineers, and leaders.[7] These disparities echo broader patterns in science and technology, in which marginalized voices are routinely excluded from positions of influence.

As Fatima Oliveira has argued, science is not a neutral or objective enterprise, but, rather, a social construct shaped by the values, hierarchies, and interests of those who fund and control it. The institutions that produce scientific knowledge, Oliveira argues, continue to be dominated by patriarchal and racialized power structures, and space science is and continues to be no exception.[8] Research on reproduction in space must be viewed critically, as the policies and social frameworks that emerge from this field risk reinforcing those same inequities unless we intentionally build more just alternatives.

These concerns extend to the very language we use to describe space expansion. President John F. Kennedy's famous Moon speech of 1962 invoked the metaphor of the frontier when he stated, "What was once the furthest outpost on the old frontier of the West will be the furthest outpost on the new frontier of science and space."[9] Terms like "the final frontier," "pioneering," and "space colonization" draw heavily on the rhetoric of Manifest Destiny, a narrative that historically justified expansion, conquest, and exploitation.[10] As Erika Nesvold warns, ignoring the violent histories entwined with these metaphors leaves future space societies vulnerable to repeating the same injustices under a new guise.[11]

These historical and ethical legacies make clear that if the pressure of survival, resource management, and technological ambition overshadow principles of autonomy and justice, future space habitats risk replicating the same patterns of coercion, inequality, and exploitation that have shaped Earth's colonial past. These dilemmas will manifest in very real decisions about who is permitted—or expected—to reproduce, how reproductive health is protected, neglected, or abused, and whether individual rights will be sacrificed for the perceived needs of the group. Szocik and Reiss contend that the idea of subordinating the reproduction of individuals to the good of the group in space parallels past efforts to regulate reproduction in the name of the public good on Earth.[12]

4 Erika Nesvold, *Off-Earth: Ethical Questions and Quandaries for Living in Outer Space* (Cambridge, MA: MIT Press, 2023).
5 Nesvold, *Off-Earth*.
6 National Aeronautics and Space Administration (NASA), NASA Strategic Plan for Diversity, Equity, Inclusion, and Accessibility for Fiscal Years 2022–2026 (Washington, DC: NASA, 2022); Alice Gorman, "Contact Zones and Outer Space Environments: A Feminist Archaeological Analysis of Space Habitats," in *Reclaiming Space*, 1st ed., ed. James S. J. Schwartz, Linda Billings, and Erika Nesvold (New York: Oxford University Press, 2023), 215–31.
7 Gorman, "Contact Zones and Outer Space Environments."
8 Priscila Cardia Petra, Karina de Cássia Caetano, Samantha Vitena Barbosa, and Maria Clara Conrado de Niemeyer Soares Carneiro Chaves, "(Re)Thinking Bioethics: Intersectional Analysis of Sexual and Reproductive Rights," *Revista Bioética* 32 (July 2024): e3516PT; Fatima Oliveira, "Feminismo, luta anti-racista e bioética," *Cadernos Pagu,* no. 5 (1995): 73–107.
9 John F. Kennedy, "Address at Rice University on the Nation's Space Effort," John F. Kennedy Presidential Library and Museum, September 12, 1962.
10 Linda Billings, "Neoliberalism: Problematic. Neoliberal Space Policy? Extremely Problematic," in *Reclaiming Space: Progressive and Multicultural Visions of Space Exploration*, ed. James S. J. Schwartz, Linda Billings, and Erika Nesvold (New York: Oxford University Press, 2023), 25–36.
11 Nesvold, *Off-Earth*.
12 Konrad Szocik and Michael J. Reiss, "The Final Frontier: What Is Distinctive about the Bioethics of Space Missions? The Cases of

This article argues that reproductive autonomy must remain a non-negotiable ethical principle in the design of space habitats. Drawing on reproductive justice frameworks and feminist theories to critique the historical and ongoing control of reproduction within patriarchal and colonial systems, this work warns that such patterns could threaten reproductive freedom in future space habitats. These frameworks are not neutral. Much of feminist theory, particularly the strands drawn on here, emerges from Western academic traditions with all their cultural assumptions and limitations. My positionality as a Latina woman, and as someone whose perspective is shaped by navigating gendered and heteronormative structures, informs how I interpret and apply these frameworks. Recognizing this standpoint is important because both the tools we use and the perspectives we hold influence how we envision ethical futures in space.

These frameworks center autonomy, justice, and the historical memory of reproductive oppression, offering tools to challenge spacefaring projects that would subordinate personal autonomy to survival imperatives. Through examination of speculative fiction and historical precedents, this work uncovers lessons from the past that can help to address this challenge and resist repeating patterns of reproductive injustice. These frameworks guide the examination of two ethical dilemmas that illustrate how reproductive autonomy might be challenged in the governance of future space habitats.

First, reproductive autonomy must take priority over population control, rejecting coercive measures—such as birth limits or forced sterilization imposed for resource management—as continuations of state-enforced control over women's bodies. Second, individuals have no moral obligation to reproduce for the sake of collective survival, affirming the primacy of self-determination and bodily autonomy. Across both dilemmas, this analysis considers how technologies such as genetic selection and enhancement may become tools of coercion, reinforcing social hierarchies and instrumentalizing women's bodies under the guise of efficiency or survival. In rejecting these patterns, I call for an ethical framework that safeguards reproductive freedom and personal dignity, even under the pressures of survival in space.

## THEORETICAL FOUNDATIONS: FEMINIST ETHICS AND REPRODUCTIVE JUSTICE

> *I deserve to exist, and I deserve to show up in the way that makes me feel most empowered.*
> — Amanda Nguyen, sexual assault survivor, civil rights advocate, and the first Vietnamese American woman in space.

Feminism draws on philosophical concepts and theories to articulate diverse claims and political positions, often grounding its arguments not in biological sex, but in the social expectations that shape gender—such as norms about appropriate behavior and historically constructed gender identities. As Valerie Bryson notes, feminist theory has always involved deep theoretical disagreements, reflecting both the varied needs and perceptions of women in different societies or situations and feminism's roots in competing ideological traditions.[13] Within feminist theory, several schools of thought provide distinct ethical and political frameworks that are relevant to reproductive justice and bodily autonomy. As Bryson notes, while any classification of these diverse perspectives must be handled with care and its limitations acknowledged, examining these frameworks provides a useful starting point.[14] This approach offers a pathway into the complex terrain of feminist ideas that can begin to inform how we approach space governance from a broad feminist perspective.

Liberal feminism is rooted in liberal political theory, and it emphasizes rationality, individual autonomy, and freedom of choice. It focuses on eliminating gender-based legal distinctions and protecting women's equal rights, particularly through advocating for state neutrality in personal decisions and freedom from state-imposed limitations on women's lives.[15] Marxist feminism, by contrast, emphasizes the intersection of gender and class, contending that the liberation of women is inseparable from the dismantling of capitalist structures. It calls for a reconstruction of society in which both class and gender hierarchies are eliminated.[16]

Cultural feminism draws on the work of Carol Gilligan and others who argue that women's experiences and moral reasoning are shaped by a distinctive ethics

Human Enhancement and Human Reproduction," *Monash Bioethics Review* 41, no. 2 (2023): 87–102.

13 Valerie Bryson, *Feminist Political Theory,* 3rd ed. (London: Palgrave Macmillan, 2016).
14 Bryson, *Feminist Political Theory.*
15 Karen H. Rothenberg, "Feminism, Law, and Bioethics," *Kennedy Institute of Ethics Journal* 6, no. 1 (1996): 69–84; Wendy N. Whitman Cobb, "For All (Wo)Mankind: Advancing a Feminist Critique of US Space Policy," *Space Policy* 67 (February 2024): 101594.
16 Whitman Cobb, "For All (Wo)Mankind."

of care. This framework critiques the dominance of masculine values such as autonomy and abstraction in social and legal institutions, instead promoting values like responsibility, interdependence, and relational ethics. Legal applications of this view often challenge adversarial systems and advocate for duties to care—for example, suggesting that healthcare providers should bear legal responsibilities to intervene when encountering someone injured in public (a duty that already exists in some jurisdictions).[17]

Radical feminism, which grew out of the Women's Liberation Movement of the 1960s, claims to go to the roots of women's oppression by centering women's own experiences and perceptions. As Bryson notes, radical feminism views the oppression of women as the most fundamental and universal form of domination, with women as a group having interests opposed to those of men that transcend the divisions of class or race.[18] Thinkers like Catherine McKinnon developed this framework further, asserting that patriarchy operates as a pervasive system of dominance extending beyond public life into intimate and social relationships, including family and sexuality.[19] Radical feminist activism has significantly influenced legal recognition of domestic violence, marital rape, and sexual harassment as forms of systemic gender-based harm.[20]

Postmodern feminism challenges the assumptions of essentialism and universal womanhood that underlie other feminist theories. It emphasizes the fluid and context-dependent nature of gender and critiques binary thinking that divides the world into distinct categories of male and female. As Bryson explains, postmodernism offers ways of resolving the dilemmas that have preoccupied and divided feminists by transforming debates away from dichotomous thinking that has trapped feminist thought—particularly the presentation of putative equality and differences as hierarchical, immutable, and irreconcilable choices.[21] This approach foregrounds the alleged situated realities of individuals, shaped by factors such as race, class, age, and sexuality, and resists generalizations that obscure complexity.[22]

A major critique of many dominant feminist frameworks is their grounding in the lived experiences of white, middle-class women in Western societies. This critique highlights how mainstream feminist scholarship can unintentionally reproduce colonial and exclusionary logics.[23] Scholars emphasize the importance of intersectionality—a framework that recognizes how race, gender, class, and other axes of identity interact to produce varied experiences of oppression and privilege.[24] Despite decades of feminist critique, academic feminism remains largely reflective of white feminist perspectives.[25]

Black feminism, rooted in the work of African American women and activists, asserts that no single axis of identity defines every individual. It addresses how race, gender, and class co-construct systems of oppression, while emphasizing the agency of black women to resist, self-define, and generate change.[26] Emerging from this tradition, the reproductive justice framework was developed in 1994 by SisterSong, a collective of US women of color who found mainstream reproductive rights discourse overly focused on privacy and abortion.[27]

The reproductive justice framework emerged in 1994 when the black feminist collective SisterSong developed an approach grounded in its members' experiences as women navigating multiple, intersecting identities.[28] This movement was designed to broaden reproductive health discussions beyond predominantly white feminist contexts by incorporating intersectional analysis and human rights perspectives.[29] Unlike traditional reproductive rights approaches that center abortion access, reproductive justice examines how systemic issues—including incarceration, immigration policies, racism, housing insecurity, and adoption practices—shape reproductive experiences across their full spectrum.[30] According to scholars like Price, reproductive justice encompasses women's complete physical, mental, spiritual, political, and social well-being, achievable only when women possess the economic, social, and political resources necessary for autonomous decision-making about their bodies, sex-

17 Rothenberg, "Feminism, Law, and Bioethics."
18 Bryson, *Feminist Political Theory*.
19 Rothenberg, "Feminism, Law, and Bioethics"; Bryson, *Feminist Political Theory.*
20 Rothenberg, "Feminism, Law, and Bioethics."
21 Bryson, *Feminist Political Theory.*
22 Rothenberg, "Feminism, Law, and Bioethics"; Whitman Cobb, "For All (Wo)Mankind."
23 Whitman Cobb, "For All (Wo)Mankind."
24 Petra et al., "(Re)Thinking Bioethics"; Kathy Davis, "Intersectionality as Buzzword: A Sociology of Science Perspective on What Makes a Feminist Theory Successful," *Feminist Theory* 9, no. 1 (2008): 67–85.
25 Katie L. Love, "Black Feminism: An Integrated Review of Literature," *ABNF Journal* 27, no. 1 (2016): 11–15.
26 Love, "Black Feminism."
27 Lynn M. Morgan, "Reproductive Rights or Reproductive Justice? Lessons from Argentina," *Health and Human Rights* 17, no. 1 (2015): 136–47.
28 Morgan, "Reproductive Rights or Reproductive Justice?"; Prabina Bajracharya, Sarasu Esther Thomas, Brototi Dutta, Kruthika Ravindareddy, and Sara Malkani, "Advancing Reproductive Autonomy and Justice in Asia," *Jindal Global Law Review* 15, no. 2 (2024): 255–66.
29 Morgan, "Reproductive Rights or Reproductive Justice?"
30 Bajracharya et al., "Advancing Reproductive Autonomy and Justice in Asia."

uality, and reproduction.[31] This framework recognizes that structural inequalities and intersecting forms of oppression fundamentally constrain reproductive choices.[32]

The reproductive justice framework's emphasis on intersectionality connects to broader feminist critiques of heteronormative assumptions. Lesbian feminism, which gained momentum in the 1970s and 1980s, centers the lived experiences of lesbian women and critiques the heteronormative assumptions embedded in both mainstream feminism and society at large. It views lesbian identity and relationships as a political challenge to patriarchal systems and emphasizes how heterosexism intersects with sexism to marginalize queer women.[33]

Taken together, these diverse feminist frameworks offer crucial tools for analyzing how reproductive rights may be shaped, constrained, or reimagined in the context of future space societies. From liberal feminism's emphasis on autonomy to radical feminism's critique of patriarchal power, and from black feminism's intersectional analysis to reproductive justice's systemic framing, each perspective illuminates how reproduction is never solely a private or biological matter—it is also political, social, and deeply embedded in structures of power. As we envision future space societies, these feminist theories remind us to question who is included, who sets the terms of participation, and whose bodies are governed in the name of survival, efficiency, or progress.

## REPRODUCTIVE AUTONOMY MUST BE PRIORITIZED OVER POPULATION CONTROL

> We were the people who were not in the papers. We lived in the blank white spaces at the edges of print. It gave us more freedom. We lived in the gaps between the stories. —*The Handmaid's Tale,* Margaret Atwood.

In the dystopian world of *The Handmaid's Tale,* reproductive autonomy has been stripped away in favor of a state-mandated breeding regime.[34] Women's bodies are no longer theirs to govern; fertility becomes a tool for survival, power, and control. While fictional, Atwood's narrative mirrors the reproductive ethics debates that could surface as humanity moves beyond Earth. In an off-world habitat with limited resources and fragile infrastructures, it is easy to imagine reproductive capacity becoming a tightly regulated asset, with decisions about who may reproduce—and how often—made by governing authorities rather than individuals.

Survival pressures in future space habitats may tempt authorities to impose population controls in the name of managing limited resources such as life support, food, and genetic diversity. Some may argue that reproductive decisions must be subject to oversight to ensure the group's long-term viability. Yet such interventions risk replicating authoritarian logics under the guise of necessity. As Szocik and Reiss note, regulating individuals' decisions to reproduce—or not—stands in direct tension with long-standing ethical commitments to reproductive autonomy, both as a matter of rights and as essential to one's ability to pursue life goals.[35]

The space environment itself further complicates this issue. Exposure to ionizing radiation, microgravity, circadian rhythm disruptions, and psychological stress all pose significant risks to reproductive health.[36] These risks may serve as justification for reproductive coercion under the pretense of safety or mission success. On long-duration flights, for instance, women might be pressured—or required—to terminate pregnancies to avoid perceived risks. In contrast, within a space habitat facing demographic bottlenecks, the opposite could occur—women may be expected to bear children or coerced into childbearing to sustain population numbers, illustrating how survival imperatives can justify coercion in either direction. These conflicting pressures illustrate the vulnerability of reproductive freedom in high-stakes environments, particularly for those whose bodies are seen as instrumental to survival.

To subordinate reproductive autonomy to resource management is to repeat the authoritarian impulses that Margaret Atwood so vividly warns against in *The Handmaid's Tale.* Ethical frameworks such as libertarianism and feminist bioethics defend bodily sovereignty precisely because crises often become pretexts for oppressive control. Reproductive justice further strengthens this critique by foregrounding how reproductive policies have historically targeted margin-

31 Kimala Price, "What Is Reproductive Justice? How Women of Color Activists Are Redefining the Pro-Choice Paradigm," *Meridians* 10, no. 2 (2010): 42–65.
32 Morgan, "Reproductive Rights or Reproductive Justice?"
33 Denise Thompson, "Against the Dividing of Women: Lesbian Feminism and Heterosexuality," *Feminism & Psychology* 2, no. 3 (1992): 387–98.
34 Margaret Atwood, *The Handmaid's Tale* (Toronto: McCleland and Stewart, 1985).
35 Szocik and Reiss, "The Final Frontier."
36 Priyanka Sharma, Sunita Malik, and Avir Sarkar, "Exploring the Idea of Human Reproduction in Space: A Potential Area for Future Research," *Cureus* 16, no. 11 (2024): e73712.

alized communities under the guise of social good. It reminds us that reproduction is never only about individual choice—it is also about the structural conditions that shape who is supported, who is discouraged or prevented from reproducing, and whose bodies are deemed expendable. Without an explicit commitment to justice, future space habitats risk reproducing the same hierarchies—racial, economic, and gendered—that have long governed women's bodies on Earth.

History offers stark warnings about how reproductive control has been used to enforce social hierarchies under the guise of the collective good. Early twentieth-century eugenics movements, for instance, aimed to "improve" society by encouraging reproduction among those deemed fit—typically white, affluent women—while discouraging or forcibly sterilizing marginalized populations, including black, indigenous, immigrant, impoverished, and disabled communities. As Blumenthal notes, the eugenics movement reshaped the discourse surrounding birth control from one rooted in women's rights to one focused on population control, deeply entangled with racial and class-based ideologies.[37] Dr. Clarence Gamble, an heir to the Procter & Gamble fortune, exemplified this mindset, promoting contraception for the "less fit" and advocating increased reproduction among college-educated women, with the explicit goal of reducing the number of black individuals receiving public assistance.[38]

These same logics could resurface in future space habitats, albeit in more technologically mediated forms. As Szocik cautions, the hostile conditions of space may lead to proposals for genetic enhancement or strict reproductive selection as strategies for population survival.[39] Framed as necessary adaptations to radiation, low gravity, or closed-system ecosystems, such strategies risk reviving eugenic rationales under a new guise—privileging traits deemed optimal for space life while limiting the reproductive freedoms of those who fall outside that standard. Without a clear ethical commitment to reproductive justice, these pressures could once again instrumentalize certain bodies for the benefit of others, undermining autonomy in the name of progress.

This convergence of survival-driven logic and reproductive control is not limited to historical eugenics or speculative futures—it has already been realized through large-scale state policies. One of the most prominent examples is China's one-child policy, which provides a sobering case study of how reproductive autonomy can be sacrificed in the name of social engineering. As Nie argues, although the policy was justified as a means to improve national welfare and reduce poverty, it ultimately caused widespread suffering—especially among women—and institutionalized state violence against reproductive bodies, including the disappearance of an estimated 30–40 million females through sex-selective abortion.[40] Building on this, Cai and Liu show how the policy redefined reproduction as a state-managed obligation and reinforced patriarchal norms, as women were blamed or even abused for not producing sons.[41] In 1982, family planning was enshrined in China's constitution as a principal national policy, transforming fertility from a private right into a tool of social and economic control. These efforts, grounded in Malthusian and developmentalist ideologies, illustrate how easily reproductive autonomy can be overridden when state interests claim priority.[42]

As Petra and Bajracharya highlight, reproductive governance has consistently been wielded as a tool of structural domination, often disguising coercion behind the language of efficiency, sustainability, or necessity. Appeals to survival or the common good, therefore, should be met with strong ethical skepticism, especially in vulnerable, high-pressure settings like space habitats. If the mistakes of Earth's history are to be avoided, reproductive autonomy must be considered non-negotiable, even when survival seems at risk. Therefore, prioritizing reproductive autonomy in space governance is essential—it is necessary to prevent repeating patterns of historical injustices. Ethical governance must center on individual agency and resist the tendency to view bodies, especially women's bodies, as mere instruments of survival.

37 Karen Blumenthal, *Jane Against the World: Roe v. Wade and the Fight for Reproductive Rights*, 1st ed. (New York: Roaring Brook Press, 2020).
38 Blumenthal, *Jane Against the World.* Gamble's eugenic activities are well documented in his extensive correspondence and writings. For broader context, see the Clarence James Gamble papers (1920–1970s) held at Harvard University's archives.
39 Konrad Szocik, "Space Bioethics: Why We Need It and Why It Should Be a Feminist Space Bioethics," *Bioethics* 35, no. 2 (2021): 187–91.
40 Jing-Bao Nie, "China's One-Child Policy, a Policy without a Future: Pitfalls of the 'Common Good' Argument and the Authoritarian Model," *Cambridge Quarterly of Healthcare Ethics* 23, no. 3 (2014): 272–87.
41 Yiping Cai and Bohong Liu, "From Birth Control to Pronatalism: Population Policy and Women's Reproductive Rights in China since the 1980s," *Jindal Global Law Review* 15, no. 2 (2024): 267–89.
42 Cai and Liu, "From Birth Control to Pronatalism."

## THERE IS NO MORAL OBLIGATION TO REPRODUCE, EVEN FOR COLLECTIVE SURVIVAL

> Isn't that just like a man? You make these grandiose decisions, but you never stop to consider the poor women.… I don't know if I want to be Eve.
> —Brenna Odell, *Star Trek: The Next Generation*, "Up the Long Ladder."

As visions of space habitation move closer to reality, questions about how future societies will be structured—socially, politically, and reproductively—take on new urgency. Yet speculative narratives often overlook a critical ethical issue: the assumption that individuals, particularly women, may be morally obligated to reproduce for the survival of the group. This tension is sharply illustrated in *Star Trek: The Next Generation* ("Up the Long Ladder"), in which male leaders propose that each woman bear multiple children to rebuild a dying colony, without consulting the women expected to carry out the plan. Brenna Odell's pointed retort— "I don't know if I want to be Eve"—captures a recurring dynamic: women are frequently excluded from decision-making yet expected to bear its burdens.

Although the scene is couched in lighthearted dialogue, it echoes real-world histories in which states positioned women's reproductive labor as a public resource. After World War II, countries such as France rewarded women with large families as part of their pronatalist policies. At the same time, Romania under Nicolae Ceaușescu provided perhaps the most extreme example of reproductive coercion in service of state goals. Beginning in 1966, Ceaușescu's regime banned contraception and abortion, mandated gynecological examinations to monitor pregnancies, and offered financial incentives for families with multiple children—all in pursuit of doubling Romania's population. The ideology underlying these policies was made explicit when Ceaușescu proclaimed in 1986 that "the fetus is the socialist property of the whole society. Giving birth is a patriotic duty.… Those who refuse to have children are deserters, escaping the law of natural continuity."[43] As Kligman documents, these policies led to significant public health crises, widespread violations of bodily autonomy, and the tragic abandonment of thousands of unwanted children.[44] Even when framed as patriotic or economically necessary, coercing reproduction has devastating consequences for health, freedom, and dignity.

Similar dynamics could easily emerge in space habitats facing demographic bottlenecks. Genetic selection technologies may be used to privilege certain births—those deemed optimal for survival—reinforcing coercive expectations. As Szocik warns, political and social campaigns aimed at increasing population growth often rely on the assumption of women's passive consent, valuing only those who choose, or are willing, to reproduce.[45] In a worst-case scenario, women may be explicitly forced to bear children in the name of humanity's survival; alternatively, coercion may take a more indirect form, wherein only those who agree to reproduce are selected for missions. An underpopulated habitat dealing with a severe labor shortage, for example, could easily fall back on coercive methods for increasing population. As Nesvold cautions, "At that point, individual consent may be pitted against the survival of the settlement—and consent has historically been an early casualty in struggles for survival."[46]

These logics not only instrumentalize women's bodies, but also threaten to erase those who do not fit heteronormative reproductive expectations. Queer individuals, and particularly lesbian women, face the dual threat of exclusion or forced participation in heteronormative reproduction. A space society that values only reproductive capacity risks creating a system in which lesbian women are denied recognition, inclusion, or autonomy unless they conform to state-defined reproductive roles. Nesvold contends that in underpopulated space habitats, individuals who are uninterested in heterosexual reproduction may face societal pressure to contribute biologically to population growth—potentially giving rise to a new brand of homophobia rooted in reproductive expectations.[47] This reflects a long history of using reproductive policy to enforce gender norms and marginalize queer lives—an injustice that must not be replicated in the name of survival.

These scenarios are not hypothetical abstractions. As Scully notes, traditional bioethics often ignores the ways social structures shape and constrain reproductive decisions, especially under the guise of the "common good."[48] Feminist bioethics, by contrast, demands a focus on embodied autonomy and the lived consequences of reproductive injustice. Similarly, Rothenberg emphasizes that survival pressures—historically invoked to serve national or colonial goals—are often used to justify coercive control over women's bodies.[49] These frameworks

43 Charlotte Hord, Henry P. David, France Donnay, and Merrill Wolf, "Reproductive Health in Romania: Reversing the Ceausescu Legacy," *Studies in Family Planning* 22, no. 4 (1991): 231–40.
44 Gail Kligman, *The Politics of Duplicity: Controlling Reproduction in Ceausescu's Romania* (Berkeley: University of California Press, 1998).
45 Konrad Szocik, *Feminist Bioethics in Space: Gender Inequality in Space Exploration*, 1st ed. (New York: Oxford University Press, 2024).
46 Nesvold, *Off-Earth*.
47 Nesvold, *Off-Earth*.
48 Jackie Leach Scully, "Feminist Bioethics," in *The Stanford Encyclopedia of Philosophy,* Fall 2023, ed. Edward N. Zalta and Uri Nodelman (Stanford, CA: Metaphysics Research Lab, Stanford University, 2023).
49 Rothenberg, "Feminism, Law, and Bioethics."

make clear that no survival imperative can override the ethical obligation to respect bodily autonomy. Survival imperatives, if anything, heighten the need for ethical clarity. As Kligman reminds us, reproductive mandates justified by national development or crisis often disproportionately harm marginalized communities.[50] In the context of future space societies, this legacy must serve as a caution: systems that incentivize or mandate reproduction, particularly through eugenic or selective pressures, risk reinscribing the very injustices humanity should leave behind.

Space must not be imagined as a blank slate, but as a place where Earth's social and political histories will inevitably resurface. Fictional narratives like *Star Trek* allow us to rehearse these dilemmas in a speculative setting, but their roots lie in real policies and real harms. If humanity's expansion into space comes at the cost of reproductive freedom and personal dignity, it is not a new frontier—it is the repetition of old hierarchies under a new sky.

## CONCLUSION: A FUTURE WORTH REPRODUCING

As we look toward building human habitats beyond Earth, we must confront the fact that technology alone cannot define the success of such missions. Social structures, power dynamics, and ethical decisions will shape the lived experiences of those who inhabit these futures. Reproductive autonomy must remain a foundational principle in space governance. Efforts to regulate population growth or enforce reproduction—no matter how well-intended—risk replicating the same coercive and exclusionary practices that have defined reproductive politics on Earth for centuries.

Historical examples such as eugenics, restrictive policies like China's one-child policy, and pronatalist regimes like Nicolae Ceaușescu's Romania—as well as speculative visions in popular science fiction—illustrate how reproductive governance has consistently operated as a mechanism of state and societal control, targeting women's bodies as sites of regulation, exploitation, and sacrifice. Across time and context, reproduction has been used not only to sustain populations, but also to enforce social hierarchies, justify authoritarian rule, and advance ideological agendas. Feminist theories—especially those grounded in intersectionality, reproductive justice, and embodied autonomy—offer critical tools for resisting these dynamics and reimagining what ethical, inclusive futures might look like, both on Earth and beyond it.

While this examination has focused primarily on the risks of coercive reproductive governance in space, reproductive justice requires a broader lens. Future frameworks must also account for how ageism shapes who is considered capable or valuable in reproductive life; how reproductive autonomy is negotiated by transgender people and others whose identities or bodies do not align with heteronormative assumptions of reproduction; and how ableism continues to marginalize those whose bodies are deemed unfit within dominant narratives of survival and efficiency. Recognizing these dimensions is essential to ensuring that reproductive ethics in space do not reproduce narrow or exclusionary definitions of womanhood but instead protect autonomy across the full spectrum of bodies and identities.

Moreover, these frameworks must extend beyond the Western academic traditions and limited national perspectives that have dominated space discourse thus far. The histories and ethical frameworks examined here—drawn primarily from US, European, and Chinese contexts—represent only a fraction of global perspectives on reproduction, governance, and justice. Indigenous worldviews, African philosophical traditions, Latin American feminist thought, and countless other knowledge systems offer alternative understandings of community, autonomy, and collective responsibility that could fundamentally reshape how we approach reproductive ethics in space. If space habitats are to be established as truly global endeavors, these diverse perspectives must be centered rather than marginalized in the development of ethical frameworks. The colonial patterns this analysis warns against are replicated not only through coercive policies, but also through the exclusion of non-Western voices from foundational conversations about how societies should be organized in space.

The patriarchal ideologies that punctuate daily life on Earth need not define our futures in space. As Lovell argues, space presents a rare opportunity to write a new chapter—one in which gender equity and bodily autonomy are not afterthoughts but foundational values.[51] Yet the space industry, for all its grandiose vision, has too often failed to demonstrate the moral imagination and ethical leadership needed to challenge its own structural biases and to create new cultural narratives around gender, care, and justice.[52] As Oliveira reminds us, science—and by extension, space science—is not immune to the power structures that govern society.[53] If we do not interrogate the assumptions embedded in space governance, we risk exporting Earth's injustices to ex-

50 Kligman, *The Politics of Duplicity*.

51 Bronwyn Lovell, "Sex and the Stars: The Enduring Structure of Gender Discrimination in the Space Industry," *Journal of Feminist Scholarship* 18, no. 18 (2021).
52 Lovell, "Sex and the Stars."
53 Oliveira, "Feminismo, luta anti-racista e bioética."

traterrestrial habitats.[54]

Designing just and inclusive space societies demands more than engineering prowess; it requires ethical foresight and political courage. If we fail to embed consent, justice, and autonomy into the very architecture of space life, we will have missed a profound opportunity. As Szocik warns, "these dilemmas stir deep moral emotions and carry the potential for conflict, as they exist at the fault line between two powerful but often opposing principles: the right of individuals to control their own bodies, and the collective responsibility to safeguard the future of our species."[55] A just vision of space life must confront these tensions directly. Rather than replicating the inequities of Earth, we have a chance to reimagine how life beyond it might be governed—with reproductive autonomy not merely preserved, but also protected as essential to any ethical future in space.

54 Petra et al., "(Re)Thinking Bioethics."
55 Szocik, "Space Bioethics."