Transactions of the Institute of British Geographers

WILEY | IBG Royal Geographical Society with IBG

THEMED INTERVENTION OPEN ACCESS

Computers in Our Cosmos: Intersections in Geographies of Care, Abolition Geographies and Worker Movements

Yung Au

St Annes College, Oxford, UK

Correspondence: Yung Au (yung.au@st-annes.ox.ac.uk)

Received: 28 October 2025 | **Accepted:** 31 October 2025

Keywords: abolition | AI | geographies of care | outer space | technology | worker movements

ABSTRACT

AI assistants on spacecrafts. Netflix streamed through inter-planetary communication networks. Colonies on Mars by 2050. While the glamorous public–private ventures into outer space curate discussions on the technical specificities of these proposed projects, this paper reorients discussions on such developments through critical frameworks of care and governance. This intervention is part of the Themed Intervention, 'Geographies of Responsibility, Care and Repair in Digital Worlds of AI', which prompts pressing questions around how we can foreground issues of responsibility, care and repair within engagement with data-driven technologies. This paper responds by thinking through stories of technological expansionism in outer space, attending to the complications around governance, incoherent projects of commodified safety, and circulations of uncare in the wake of endeavours seeking to embed computers in our cosmos. In particular, this intervention explores how the scholarship and movements seeking to approach care more critically can help deepen ongoing discourse. It makes this argument through examining the intersections between feminist and Indigenous geographies of care, abolition geographies and worker movements within the data science and space science community. These bodies of work offer analytics to critique modes of (un)care in technological expansionist projects but also generate new possibilities. For instance, feminist ethics of care and Indigenous geographies open up different relationalities of care—including care that is circulated through wider, interconnected cosmologies, as well as protection beyond property rights. Through reflecting on what has been 'illegible to us as "safety"' (Kaba and Hayes 2018), abolitionist geographies provide alternative prospects for collective security, contrasting the safety that is sold by military technology firms. Worker and student movements highlight the material solidarities that can be extended to geographically dispersed communities. As such, these diverse bodies of work offer important contributions towards rethinking relationships of care and violence, on Earth and beyond.

1 | Introduction

During re:MARS 2022, Amazon's event on machine learning (ML), automation, robotics and space, the arms conglomerate Lockheed Martin proposed a vision for the future of space that was 'not generations from now but what's around the corner'. The company pitched interplanetary quantum communications; autonomous technologies that self-direct in unfamiliar, communications-restricted environments; and artificial intelligence (AI) assistants on spacecraft.

> If you haven't seen yet, I recommend you [take] a look at Callisto. This is our AI agent that is going be on board of the Orion spacecraft. And it's in partnership with Amazon and Cisco.

—Nelson Pedreio representing Lockheed Martin in the session 'Space 2050' at re:MARS 2022.

As outer space becomes increasingly crowded with human development projects, it is also increasingly becoming the home for both the infrastructure that sustains data-driven systems and the point of its deployment. Such advances in both the domains of AI/ML and space expansionism have been the topic of much fascination. However, beyond the alluring sales pitches, it is important to trace how these developments present different continuations of colonial and capitalist endeavours back on Earth.

More broadly, the infrastructures that make AI and other data-intensive processes possible include sprawling, interconnected networks of software, hardware, operators, last-mile architectures, protocols and more. These infrastructures are often built on previous infrastructures, from railroad tracks to sewer lines, as well as on previous imperial and colonial formations (Aouragh and Chakravartty 2016; Parks and Starosielski 2015; Raghunath 2023). Similarly, outer space has been a long-standing frontier of contestation. The intensification of computing processes into outer space today also continues to unfold through these entangled webs of relations, characterised by power asymmetries and historical foundations of oppression.

In particular, data projects in space are often large, multi-scalar endeavours that traverse diverse jurisdictions and complicate many presumed units of analysis and units of governance. These projects that implicate diverse communities frequently operate under the justification of being 'beneficial for all humankind', yet they inevitably raise disputes on who is included in this calculus and who is excluded, whose version of benefit and progress is being promulgated and under whose authority? Whether it is space-based data circuitry or autonomous space vehicles, crucial questions arise about care, responsibility and governance across the scales and localities these infrastructures intersect with.

These are questions that do not begin or end with space technologies itself. For this reason, this paper argues it is crucial to look to the wider bodies of work that have long contended with these broader topics of inquiry. Responding to the prompt in the Themed Intervention introduction on geographies of responsibility, care and repair by McLean et al. (2025), this paper explores how scholarship and social justice movements seeking to approach care more critically are in a particularly important position to deepen ongoing discourse on technological expansionism. More specifically, this intervention will explore the intersections between ongoing work from feminist and Indigenous geographies of care, abolition geographies and worker movements within the data science and space science community itself. This paper argues that there is a pressing need to attend to the convergence of these streams of work at this crucial moment of rethinking relationships of care and violence, on Earth and beyond.

2 | For All Humankind

Over the past decade, an increasing number of public and private actors have laid claim to outer space through various in-progress and speculative projects. A disembodied rhetoric often rationalises the rapid development of data infrastructures in both terrestrial and extra-terrestrial environments: they benefit *everyone*.

Lockheed Martin, the largest arms company in the world (SIPRI 2022), proposes the future of 'Space 2050' as a collective one. They pitch a vision about the future of space in five domains: 'a "smart" world enabled by ubiquitous communications, extraplanetary operations, space logistics, mission operations command utilizing artificial intelligence and machine learning, and space defense to strengthen 21st Century Security' (Lockheed Martin 2022). Similar endeavours are likewise found from Thales Alenia Space, a joint venture between Leonardo and Thales, the third and fourth largest military companies from Europe, respectively (SIPRI 2022). As a company focused on delivering technology solutions in space, Thales Alenia Space is conducting experiments for establishing computing hubs on the moon in collaboration with the Italian and US space agencies. Their motto states: 'we believe in Space as humankind's new horizon to build a better, sustainable Life on Earth'.

Amazon Web Services (AWS) has also launched various space ventures and patents, including a lunar data centre. During re:MARS 2022, an AWS representative elaborated on the company's plans for interplanetary computing on the moon, Mars and beyond:

> The stuff of science fiction is beginning to become reality. [...] Scientists are beginning to coalesce around the number of 2050, for when we'll have colonies on Mars. [...] In order to enable communication for interplanetary compute, we're going have to start building infrastructure in space. [...] We can actually begin to think about how will astronauts stream Netflix on Mars.
>
> (AWS 2022, 37:09–38:49)

This forms part of AWS's wider mission of '[striving] to build technology that's inclusive, diverse, and equitable—accessible technology that helps our customers, society, and the planet' (AWS 2022).

Across these varied projects of technologies *in* space and technologies enabled *from* space, marketing materials promulgate familiar concepts of care and safety. For example, the scales of care are often invoked at the scale of the nation state or a planetary level, where the conversation concerns all of humankind; safety is discussed as a condition that needs to be attained for society at large; and the big-picture solutions to danger can only be provided by elite actors such as governments and large companies. However, despite grand galactic claims, space technology developments often present a reification of the systems of oppression back on Earth in many ways.

In other words, as the vast expanse beyond our planet continues to be yet another arena for the continuation of earthly politics and logics, including through the manifestation of data-driven

infrastructures such as AI, this front presents another area in which geographies of care and abolition are well equipped to interrogate.

3 | Converging on Care

The work in geographies of care, broadly defined, provides critical scrutiny on how, where and when care operates as well as deeper philosophical reflections on care and its liberatory possibilities. This body of work grows from critical socio-spatial interrogations of care in varied private and public domains, and offers continuous ruminations over what care is and can be (McEwan and Goodman 2010; Milligan 2001; Power and Hall 2018).

Feminist geographies of care, in particular, have been concerned with the uneven spatialities of care, interrogating the different geographies, scales and temporalities in which care operates (Conradson 2011; Massey 2004; Raghuram et al. 2009). This includes probing who we have responsibility towards and the differentiated and distanced 'others' that societies have deemed undeserving of care. Beyond approaching care as simply 'a topic to be studied, or a standard for critique' (Middleton and Samanani 2021, 30) however, feminist geographies of care also urge more extensive examinations of care including meta-theoretical and hermeneutic examinations (ibid.) as well as disciplinary reflections on the responsibilities of geographic institutions to the world (Massey 2004; Curley and Smith 2020; Wood et al. 2020). For example, in her reflections on care, (Lawson 2007) contends that care is not a private affair that is confined to families or homes—nor is it easily captured by frameworks of individualism, egalitarianism and universalism. While the commodification of care constructs particular customers in need of care, such as the disabled and the elderly, everyone is implicated in the networks of care or uncare. Instead, Lawson argues that a feminist ethic of care starts from a social ontology of connection: 'care not as a separate kind of relation, but as endemic to (potentially) all social relations' (2007, 3). The ethics of care, then, involves thinking about caring as less of an activity or event but more as a way of relating to each other (McEwan and Goodman 2010). This might include interrogations of care in human–digital relations (McLean 2024) or more broadly, the relations that 'includes everything that we do to maintain, continue, and repair our "world" so that we can live in it as well as possible. That world includes our bodies ourselves, and our environment, all of which we seek to interweave in a complex, life-sustaining web' (Tronto and Fisher 1990, 40).

This intersects with Indigenous geographies which have been central to the critical interrogation of dominant frameworks of social and environmental relationalities, including our connections to entities beyond Earth (Daigle 2016; de Leeuw and Hunt 2018; Smiles 2023; Rivera 2024). Work here has destabilised anthropocentric frameworks of care through concepts of connected ecologies and more-than-human relationalities. Many Indigenous cosmologies have also long integrated extra-terrestrial relationships as part of life (Kimmerer 2013; Lewis et al. 2018; McLean 2024; RiverOfLife et al. 2020; Smiles 2020; Tsing 2015). Moreover, Indigenous-led movements have been at the forefront of material efforts to disrupt circulations of uncare. For instance, the Sarayaku people from the Ecuadorian Amazon won a landmark case in 2012 against state-imposed oil projects in their territory using Ecuador's legal recognition of *Pachamama* (Mother Nature) as a subject of rights (Court Rules Ecuador Responsible in Sarayaku Case 2012; Rodríguez-Garavito 2024). Similarly, the Navajo Nation from the American Southwest has sought to protect the night skies and other celestial bodies, including opposing the US space agency's efforts to send human remains to *Ooljéé'* (the Moon) since the late 1990s (Nygren and Curley 2024). Such efforts seek to shift dominant frameworks of care beyond the individual, beyond the human and to explore care and protection beyond property rights and jurisdictionally bounded legal frameworks.

This agenda of rethinking care overlaps with abolitionist scholarship that seeks to experiment with radical alternative modes of collective accountability, care and social provision (Akbar 2020; Benjamin 2019; Gilmore et al. 2022). Through theoretical and empirical arguments that policing, prisons and militarism are not synonymous with public safety, abolitionist movements urge different metrics of care and ways of relating to each other. While policing, prisons and military institutions meticulously demarcate in-groups that are afforded care and rights, and out-groups that must be protected against, abolitionists seek to break down such separations.

Thus, abolitionist scholarship, in its call for the dismantling of carceral institutions, necessitates the interrogation of some core tenets of our society. As Kaba and Ritchie (2022, n.p.) assert,

> abolition also requires us to unpack the notion of safety itself. While safety is a basic and universal human need, it doesn't have a universal and singular definition. No individual or society can be 'perfectly safe' at all times and under all conditions. All of us are vulnerable—to the elements, to natural threats like earthquakes or hurricanes, to harm caused by other inhabitants of this planet, to the uncertainty of human existence in a vast universe.

Like in geographies of care, abolitionist scholarship asserts that safety is not individual. Safety is not a permanent status that can be obtained, nor is care a commodity that can be manufactured and sold. Much of abolitionist scholarship, then, seeks to oppose the logics of care perpetuated by the prison- or military-industrial complex, defined as the overlapping web of actors and institutions that upholds carceral and militarised systems of control (Davis 2016; Gilmore et al. 2022). In the abolitionists' insistence on a systemic approach to societal issues, the target of interrogation is often not isolated companies but the wider relationships of power they are embedded in. In this approach, space computing projects cannot be separated from their connections to carceral operations on Earth, whether it is the integration of satellites in governments' data-driven surveillance infrastructures or the process of entrenching AI companies in military projects of expansionism.

A third stream of movement seeking to reorient care comes from within the space technology community. Contrasting the

spacefaring rhetoric promulgated by companies and governments outlined above are the growing movements within the technology, AI, and space science sectors. These seek to highlight the complicity of their community and institutions in broader systems of violence and to break from these cycles of oppression. For instance, in November 2023, Space Science in Context released a call to action, demanding an end to the space science community's complicity

> in the ongoing settler colonial apartheid and genocide that Israel is enacting on Palestine. [...] From the telescopes, test facilities, and launch sites built on stolen land; to the algorithms, data, and techniques we use that are weaponized for policing and bordering; and to the corporations that build our spacecraft, which also build the bullets, missiles, and surveillance technology wielded against Indigenous peoples and the Global South, including Palestine: our corner of science is an active participant in imperialism.
>
> (Space Science in Context 2023)

This is joined by similar open letters signed by over a thousand scientists and engineers from Scientists for Palestine and Particles for Palestine, as well as Just Mathematics Collective's call to join the Palestinian-led movement of boycott, divestment, and sanctions (Scientists for Palestine 2024; Particles for Palestine 2023; Just Mathematics Collective 2021). These efforts build on the ongoing Palestinian Campaign for the Academic and Cultural Boycott of Israel launched in 2004 where University staff and students across the world have worked to sever ties with organisations such as Technion, an Israeli institute that has contributed to developing technologies used by the Israeli military in Occupied Palestinian Territories (Call for an Academic and Cultural Boycott of Israel 2004; Tadamon 2010; Karolyi 2017). These also form part of the larger work connecting space expansionism to the infrastructures of domination embedded in other geographies on Earth (Gorman 2007; Maile 2018; Au 2022; Smiles 2023).

In the same month, an open letter signed by over 600 AI experts, researchers, and data scientists condemned the use of AI-driven technologies in Israel's violence against the Palestinian people and the deployment of such technologies for war-making purposes (The Responsible AI Community 2024). This, too, is part of a wider movement from the technology workforce, including from Amazon, Cisco, and Oracle, protesting technology companies' complicity in Israel's colonial and apartheid regime in Palestine, including the 'No Tech For Apartheid' campaign launched in 2021 (7amleh 2024; We Are Google and Amazon Workers. We Condemn Project Nimbus 2021; Tech Workers Coalition n.d.). These movements from students and workers that make space computing infrastructures possible hone in on the question of our own complicity in systems of uncare across diverse geographies—or as Stevens and Gieseking (2025, 2) put it in the afterword of this Themed Intervention, such movements highlight when '"we" become tools of empire'.

The lucrative and often speculative contracts awarded to military technology conglomerates are justified through claims of nurturing safety for humanity. However, as discussed, this version of 'care' has been challenged across these streams of work. Beyond interrogating idealised and commodified ideas of care, this work has also offered generative new possibilities. Feminist ethics of care open up ways to 'navigate and re-make social worlds' (Middleton and Samanani 2021, 29). Indigenous geographies offer relationalities of care that are circulated through wider, interconnected cosmologies. Abolitionists urge consideration of what has been 'illegible to us as "safety"' (Kaba and Hayes 2018, n.p.) to provide new possibilities for collective security. Protests within the space and data science community highlight the material solidarities that can be extended to geographically dispersed communities and non-human entities that have been constructed as 'distant others', a distinction that geographies of care and abolition have sought to dismantle.

While these streams of interrogation come from different lineages, they converge on crucial questions around care that are worth examining. This is particularly so when considering the difficult questions of data-driven technologies and their complex entanglements with care and violence. For example, the abolitionist project Crossing Walls, in its exploration of the histories of disabled care work, reminds us that a deep interrogation of care work is not simple and care is not uncomplicatedly good. The project asks, for example, 'how do idealizations of care obscure the true breadth of its meanings and possibilities—including when care might mean exploitation, or violence?' (Chalay n.d.). Likewise, Crossing Walls argues that 'lineages of abolitionist feminist care work also dismantle the myth that care is mutually exclusive with violence' (Chalay n.d.). Abolitionist traditions are inseparable from many histories of violent revolts and confrontations, from the transatlantic slave trade to the Black civil rights movement in America (Benjamin 2019; Browne 2015; Manchanda and Rossdale 2021; Nguyen 2023; Wright and Achilleos-Sarll 2024). However, abolitionist scholarship is still contending with questions such as how abolitionist frameworks might apply beyond the nation state or during armed conflict, or how it might develop into what Nguyen (2023) calls an anti-imperial abolitionist imaginary:

> how might a transnational abolitionist framework capture the formative contexts in which political violence circulates; respond to the material realities driving affective desires for 'more reliable' security infrastructures; and challenge the normative distinction between routinised structural violence waged by state militaries and occupying forces, and criminalised episodic violence enacted by political militants and armed militias?
>
> (328)

The varied starting points of these streams of work have shaped discourses around care differently, and many open questions remain. Nevertheless, there are productive divergences at these intersections, especially when considering how each body of work offers learnings that are situated in different geographies, different types of violence, and different scales and relationships

of care. More attention is warranted in these meeting points on how to centre and complicate care in a world imbued with capitalist and imperial relationalities.

4 | Conclusion

While the glamorous space ventures headed by powerful governments and companies curate discussions on how to stream Netflix on Mars, the questions prompted by the geographies of abolition and care look very different.

All of the above movements of reorienting care are relevant to examining the intensification of computing processes in outer space today—and provide toolkits to untangle the commodification of care sold by public–private partnerships that promise a state of safety for an undifferentiated audience. Feminist and Indigenous geographies of care provide interrogation of the relationships of care and uncare inherent in the projects of data-driven space expansionism, including with each other but also with the environment, the night sky, the moon, and other celestial bodies. Abolitionist thinking underscores the limitations on the type of care and justice that are possible from infrastructures relying on military and carceral institutions—on Earth and beyond. The worker protests emerging from the data and space science communities highlight the contradictions of safety that emerge within their institutions and form movements that seek to resist the complicity of their own fields in larger systems of oppression.

As of July 2024, Amazon, Lockheed Martin, Cisco, and Thales remain key suppliers of lethal arms and data infrastructure to Israel and other militaries across the world (Ariane and Mathias 2024; OHCHR 2024; Palestine Space Institute 2024; Schubiner and Dharmaraj 2024). As core actors of the global military-industrial complex, such companies rely on perpetuating a political economy of war and conquest, an operational system that commodifies and assigns care selectively, whether in terrestrial space or not. A relational geography of care and abolition that is tied to Earth elucidates the intractable incompatibilities between collective care and the militarisation and commercialisation of outer space. As further resources, agency, and privileges are bestowed upon the newest technologies aimed at the stars and the actors responsible for them, what new clothes will the long-standing structures of oppression change into? Will we care to disrupt—and how can we use care to disrupt?

Diverse communities are rejecting the world proposed by public–private initiatives seeking to militarise the cosmos. Instead of tinkering on the technicalities of embedding spaceship AI assistants as our escorts into the great unknown, the more pressing queries for those centring care might revolve around how systems of uncaring on Earth persist and how spacefaring ventures perpetuate these systems. Alternatively, they might consider what it might mean to build careful infrastructures and communities, whether on this planet we call home, or in the vast space beyond.

Acknowledgements

I would like to give deep thanks to the editors of the Themed Intervention on 'Geographies of Responsibility, Care and Repair in Digital Worlds of AI' (Jessica McLean, Louise Reid, Karen Lai, Markus Roos, Sneha Krishnan) and fellow authors in this collection (Margath Walker, Jamie Winders, Katarzyna Cieslik, Nikko Stevens and Jack Jen Gieseking) for the generative discussions and thoughtful feedback around this set of papers. I am also very thankful to Jennifer Middleton for their greatly insightful comments and conversations, especially around readings on geographies of care, and to Puck Fletcher for their incredible help in proofreading this article. I am also grateful to the two anonymous referees whose thorough reviews helped refine the contents of this intervention and the editors of this journal for their help and patience in this process. Finally, I would like to thank the many social justice movements from which I learnt a lot, especially in these past few years.

Data Availability Statement

Data derived from public domain resources.

References

7amleh. 2024. "Tech Workers' Testimonies: Stories of Suppression of Palestinian Advocacy in the Workplace." Accessed 2nd December 2024. https://7amleh.org/2024/11/11/tech-workers-testimonies-stories-of-suppression-of-palestinian-advocacy-in-the-workplace-en.

Akbar, A. A. 2020. "An Abolitionist Horizon for (Police) Reform." *California Law Review* 108, no. 6: 1781–1846. https://doi.org/10.15779/Z38M32NB2K.

Aouragh, M., and P. Chakravartty. 2016. "Infrastructures of Empire: Towards a Critical Geopolitics of Media and Information Studies." *Media, Culture and Society* 38, no. 4: 559–575. https://doi.org/10.1177/0163443716643007.

Ariane, L., and D. Mathias. 2024. "France Equips Israeli Armed Drones as the War Rages in Gaza." Disclose. Accessed 2nd December 2024. https://disclose.ngo/en/article/france-equips-israeli-armed-drones-as-the-war-rages-in-gaza.

Au, Y. 2022. "Data Centres on the Moon and Other Tales: A Volumetric and Elemental Analysis of the Coloniality of Digital Infrastructures." *Territory, Politics, Governance* 12, no. 1: 12–30. https://doi.org/10.1080/21622671.2022.2153160.

AWS. 2022. "Interplanetary Compute." re:MARS. Accessed 2nd July 2023. https://www.youtube.com/watch?v=fDL48ZVS980.

BDS Movement. 2004. "Call for an Academic and Cultural Boycott of Israel." Accessed 2nd July 2023. https://bdsmovement.net/pacbi/pacbi-call.

Benjamin, R. 2019. *Race After Technology: Abolitionist Tools for the New Jim Code*. Polity.

Browne, S. 2015. *Dark Matters: On the Surveillance of Blackness*. Duke University Press.

Chalay. n.d. "Crossing Walls Project." https://crossingwalls.sandbox.library.columbia.edu/on-care/.

Conradson, D. 2011. "Care and Caring: Towards New Ways of Being Together." In *A Companion to Social Geography*, edited by V. Del Casino, P. C. Thomas, and R. Panelli, 454–471. Blackwell. https://doi.org/10.1002/9781444395211.ch26.

Court Rules Ecuador Responsible in Sarayaku Case. 2012. Accessed 2nd July 2023. https://news.pachamama.org/news/court-rules-ecuador-responsible-in-sarayaku-case.

Curley, A., and S. Smith. 2020. "Against Colonial Grounds: Geography on Indigenous Lands." *Dialogues in Human Geography* 10, no. 1: 37–40. https://doi.org/10.1177/2043820619898900.

Daigle, M. 2016. "Awawanenitakik: The Spatial Politics of Recognition and Relational Geographies of Indigenous Self-Determination." *Canadian Geographies/Géographies Canadiennes* 60, no. 2: 259–269. https://doi.org/10.1111/cag.12260.

Davis, A. Y. 2016. *Freedom Is a Constant Struggle: Ferguson, Palestine, and the Foundations of a Movement*. Haymarket Books.

de Leeuw, S., and S. Hunt. 2018. "Unsettling Decolonizing Geographies." *Geography Compass* 12, no. 7: e12376. https://doi.org/10.1111/gec3.12376.

Gilmore, R. W., B. Bhandar, and A. Toscano. 2022. *Abolition Geography: Essays Towards Liberation*. Verso.

Gorman, A. 2007. "La Terre et L'espace: Rockets, Prisons, Protests and Heritage in Australia and French Guiana." *Archaeologies* 3, no. 2: 153–168. https://doi.org/10.1007/s11759-007-9017-9.

Just Mathematics Collective. 2021. "Just Mathematics Collective." Accessed 2nd July 2023. https://www.justmathematicscollective.net/USACBI_statement.html.

Kaba, M., and K. Hayes. 2018. "A Jailbreak of the Imagination: Seeing Prisons for What They Are and Demanding Transformation." Truthout. https://truthout.org/articles/a-jailbreak-of-the-imagination-seeing-prisons-for-what-they-are-and-demanding-transformation/.

Kaba, M., and A. J. Ritchie. 2022. "Reclaiming Safety." Inquest. Accessed 2nd July 2023. https://inquest.org/reclaiming-safety/.

Karolyi, P. 2017. "Update on Conflict and Diplomacy: 16 August–15 November 2016." *Journal of Palestine Studies* 46, no. 2: 121–157.

Kimmerer, R. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Milkweed Editions.

Lawson, V. 2007. "Geographies of Care and Responsibility." *Annals of the Association of American Geographers* 97, no. 1: 1–11. https://doi.org/10.1111/j.1467-8306.2007.00520.x.

Lewis, J. E., N. Arista, A. Pechawis, and S. Kite. 2018. "Making Kin With the Machines." Journal of Design and Science.

Lockheed Martin. 2022. "Lockheed Martin Rockets to the Year 2050, Invites Discussion About the Future of Space." https://news.lockheedmartin.com/news-releases?item=129261.

Maile, D. U. 2018. "Precarious Performances: The Thirty Meter Telescope and Settler State Policing of Kānaka Maoli." Abolition Journal. https://abolitionjournal.org/precarious-performances/.

Manchanda, N., and C. Rossdale. 2021. "Resisting Racial Militarism: War, Policing and the Black Panther Party." *Security Dialogue* 52, no. 6: 473–492. https://doi.org/10.1177/0967010621997220.

Massey, D. 2004. "Geographies of Responsibility." *Geografiska Annaler: Series B, Human Geography* 86, no. 1: 5–18.

McEwan, C., and M. K. Goodman. 2010. "Place Geography and the Ethics of Care: Introductory Remarks on the Geographies of Ethics, Responsibility and Care." *Ethics, Place & Environment* 13, no. 2: 103–112. https://doi.org/10.1080/13668791003778602.

McLean, J. 2024. "Responsibility, Care and Repair in/of AI: Extinction Threats and More-Than-Real Worlds." *Environment and Planning F* 3, no. 1–2: 3–16. https://doi.org/10.1177/26349825241228586.

McLean, J., L. Reid, K. P. Y. Lai, et al. 2025. "Geographies of Responsibility, Care and Repair in Digital Worlds of AI: Introduction to the Themed Intervention." *Transactions of the Institute of British Geographers*: e70045. https://doi.org/10.1111/tran.70045.

Middleton, J., and F. Samanani. 2021. "Accounting for Care Within Human Geography." *Transactions of the Institute of British Geographers* 46, no. 1: 29–43. https://doi.org/10.1111/tran.12403.

Milligan, C. 2001. *Geographies of Care: Space, Place, and the Voluntary Sector*. Ashgate.

Nguyen, N. 2023. *Terrorism on Trial: Political Violence and Abolitionist Futures*. University of Minnesota Press.

Nygren, B., and C. Curley. 2024. "Navajo Nation Press Release." Navajo Nation Office of the President. Accessed 2nd July 2024. https://opvp.navajo-nsn.gov/navajo-president-buu-nygren-navajo-council-speaker-crystalyne-curley-urge-protection-from-desecration-of-moon-celestial-sites-to-nasa/.

OHCHR. 2024. "States and Companies Must End Arms Transfers to Israel Immediately or Risk Responsibility for Human Rights Violations: UN Experts. OHCHR." Accessed 2nd July 2024. https://www.ohchr.org/en/press-releases/2024/06/states-and-companies-must-end-arms-transfers-israel-immediately-or-risk.

Palestine Space Institute. 2024. "Palestine Space Institute Database [Dataset]." Accessed 2nd July 2024. https://www.palestinespace.org/psi-database.

Parks, L., and N. Starosielski, eds. 2015. *Signal Traffic: Critical Studies of Media Infrastructures*. University of Illinois Press. ISBN:9780252080876.

Particles for Palestine. 2023. "Particles for Palestine Open Letter." Particles for Palestine. Accessed 2nd July 2024. https://particlesforpalestine.org/.

Power, A., and E. Hall. 2018. "Placing Care in Times of Austerity." *Social & Cultural Geography* 19, no. 3: 303–313. https://doi.org/10.1080/14649365.2017.1327612.

Raghunath, P. 2023. "'DataIndustries': Towards Tracing the Global Data Economy." *Sociological Studies Research*. https://socstudiesresearch.com/2023/08/02/data-industries-towards-tracing-the-global-data-economy/.

Raghuram, P., C. Madge, and P. Noxolo. 2009. "Rethinking Responsibility and Care for a Postcolonial World." *Geoforum* 40, no. 1: 5–13. https://doi.org/10.1016/j.geoforum.2008.07.007.

Rivera, I. 2024. "Towards Accountable Digital Geographies." *Dialogues in Human Geography* 14, no. 2: 317–321. https://doi.org/10.1177/20438206231177080.

RiverOfLife, M., A. Poelina, D. Bagnall, and M. Lim. 2020. "Recognizing the Martuwarra's First Law Right to Life as a Living Ancestral Being." *Transnational Environmental Law* 9, no. 3: 541–568. https://doi.org/10.1017/S2047102520000163.

Rodríguez-Garavito, C. 2024. "MOTH: Pushing the Boundaries of Legal Imagination." Emergence Magazine. https://emergencemagazine.org/op_ed/more-than-human-rights/.

Schubiner, G., and M. G. Dharmaraj. 2024. "NoTech for Apartheid and no Tech for Tyrants: A Conversation Around Organizing and Technology." *XRDS: Crossroads* 30, no. 4: 12–16. https://doi.org/10.1145/3665592.

Scientists For Palestine. 2024. "Scientists for Palestine on the Current Events in Gaza." Scientists For Palestine. https://www.scientists4palestine.org/on-the-current-events-in-gaza/.

SIPRI. 2022. "Arms Industry Database [Dataset]." https://www.sipri.org/databases/armsindustry.

Smiles, D. 2020. "The Settler Logics of (Outer) Space." Society and Space. https://www.societyandspace.org/articles/the-settler-logics-of-outer-space.

Smiles, D. 2023. "Anishinaabeg in Space." In *The Routledge Handbook of Social Studies of Outer Space*. Routledge.

Space Science in Context. 2023. "Call for Community Action." Space Science in Context. Accessed 2nd December 2023. https://spacescienceincontext.com/call-for-action/.

Stevens, N., and J. J. Gieseking. 2025. "A Reply on Responsibility and Repair in AI: Lessons From Outer Space, Agriculture and Gay Hookup Apps." *Transactions of the Institute of British Geographers*: e70046. https://doi.org/10.1111/tran.70046.

Tadamon. 2010. "Technion: Structures of Oppression." Accessed 2nd July 2023. https://www.tadamon.ca/archive/post/8105.

The Responsible AI Community. 2024. "The Responsible AI Community in Solidarity With Gaza and the Palestinian People. Google

Docs." Accessed 2nd December 2024. https://docs.google.com/document/d/1SAfEjfl2KxTSdvibAs7mqPUI7WPECVUkaog3ZwV3Z1c/edit?usp=sharing&usp=embed_facebook.

Tronto, J. C., and B. Fisher. 1990. "Toward a Feminist Theory of Caring." In *Circles of Care: Work and Identity in Women's Lives*, edited by M. Abel and M. nelson, 36–54. SUNY Press.

Tsing, A. L. 2015. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press. https://doi.org/10.1515/9781400873548.

We are Google and Amazon Workers. We Condemn Project Nimbus. 2021. The Guardian. Accessed 2nd July 2023. https://www.theguardian.com/commentisfree/2021/oct/12/google-amazon-workers-condemn-project-nimbus-israeli-military-contract.

Wood, L., K. Swanson, and D. E. C. Iii. 2020. "Tenets for a Radical Care Ethics in Geography." *ACME: An International E-Journal for Critical Geographies* 19, no. 2: 1767. https://doi.org/10.14288/acme.v19i2.1767.

Wright, H., and C. Achilleos-Sarll. 2024. "Towards an Abolitionist Feminist Peace: State Violence, Anti-Militarism, and the Women, Peace and Security Agenda." *Review of International Studies* 1–19: 1–19. https://doi.org/10.1017/S0260210524000354.