ANOTHER WORLD IS POSSIBLE!

DIALECTIC X

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DECARBONIZING DESIGN / MOBILIZING AGENCY

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CALL FOR PAPERS: DECARBONIZING DESIGN / MOBILIZING AGENCY

The issue is that accumulation-based societies don't like the answers we come up with because they are not quick technological fixes, they are not easy. Real solutions require a rethinking of our global relationship to the land, water, and to each other. They require critical thinking about our economic and political systems. They require radical systemic change.

– Leanne Betasamosake Simpson
(*Michi Saagiig Nichnaabeg*)

It is indisputable that the current practice of architecture is inextricably linked to the climate crisis that we as a society face. Our academy recognizes this. Our profession recognizes this. Yet, architecture as it is organized today — a service-oriented, productivity-obsessed, growth-dependent profession — hasn't proven itself able to support the transformative work that is increasingly necessary for the wellbeing of our shared planet. From positions of privilege, architects and scholars of architecture tend to speak of climate change with a detached perspective of comfort, resulting in a conversation that is often insular and constrained. If real solutions require radical systemic change, what and where are the catalysts for such change?

The editors of *Dialectic* X welcome proposals for personal essays, academic articles, interviews, film, audio, or mixed media submissions that consider how contemporary architects and scholars of architecture are using their tools and training to pursue climate equity and environmental justice. Particularly welcome are submissions that reflect on the trials and tribulations of unconventional, radical, and revolutionary architecture-making.

As *Dialectic* looks towards its next decade in a digital-first format, it is our mission to increase the breadth of our engagement: 1) to highlight the expanding range of research architects and scholars now use to explore contemporary issues and 2) to incorporate the contributions of those working to dissolve disciplinary boundaries to spur systemic change.

Even after the collective realization that the modernist architectural paradigm has supercharged the emission of greenhouse gases and the resultant rise of quantitative building performance standards, architects remain complacent and satisfied with incremental improvements. In the academic realm, divergence and factionalism have made commensurability on issues of environmental responsibility increasingly onerous. Prevailing modernist attitudes prioritized technological solutions and environmental comfort, an insularity that restricts the case studies we learn from. Oftentimes this excludes those directly impacted by our work, including indigenous communities, space-makers, elders, activists or others whose perspectives challenge default architectural "solutions."

An array of questions has emerged for design practitioners in recent years. Can we mobilize the image-making and visualizing capabilities of design to transform the current political economy? How might an evolution in our cultural imaginaries prepare the way for a resilient, sustainable future? If, as the familiar refrain goes, the most sustainable building is one that is already built, how can adaptive reuse amplify or heighten the capabilities of existent architecture? Must architects place climate equity at the center of their practice, or can it be smuggled in through otherwise conventional work? In which ways should the technocratic values of environmental design be recalibrated? For scholars and activists, contextualizing architecture may require alternative archives as well as alternative epistemologies. Can design grounded in data be understood in ways that are not constrained by analyses of thermodynamic performance? What might indigenous or decolonizing approaches to knowledge and agency have to teach us about building for climate adaptation?

We must actively examine architecture's role in our current state of affairs, as well as its potential to revolutionize ways forward. We are, quite literally, out of time. We hope that this issue of *Dialectic* will foster a dialog that accelerates not only research on these pressing issues, but advances new approaches that can truly reimagine the economic and political systems that constrain us.

FOREWORD

AJLA AKŠAMIJA

Ajla Akšamija, PhD, LEED AP BD+C, CDT is a Professor and Chair of the School of Architecture at the University of Utah. Her research expertise includes building science, high-performance buildings, emerging building technologies, facade systems, digital design, and innovations in architecture. Dr. Aksamija directed Perkins&Will Building Technology Laboratory ("Tech Lab"), one of the first practice-driven research laboratories focusing on advanced building technologies.

Her recent book, *Research Methods for the Architectural Profession*, was published by Routledge in 2021. She has authored two previously published books, *Integrating Innovation in Architecture, Design, Methods and Technology for Progressive Practice and Research* (John Wiley & Sons, 2016) *and Sustainable Facades: Design Methods for High-Performance Building Envelopes* (John Wiley & Sons, 2013). Dr. Aksamija has contributed to several other books and has published over ninety research articles and invited papers. She is a frequent speaker at industry-based, scientific, and academic conferences. She serves as the President of the Facade Tectonics Institute.

Decarbonization of the built environment is one of the most pressing challenges facing our society. Buildings consume more than 40% of energy and are one of the primary contributors to global emissions and, consequently, to climate change. Decreasing energy required for buildings' operation (heating, cooling, ventilation, and lighting), as well as embodied energy and carbon associated with buildings' materials, systems, and construction processes are imperative for resiliency, energy independence, and sustainable future.

To achieve this goal, we must:

- Design and construct new buildings to be carbon neutral and
- Reuse and effectively adapt existing buildings to improve their environmental impacts and achieve carbon neutrality.

Increasing energy efficiency and pursuing net-zero energy goals in existing and new buildings by integrating renewable energy sources would significantly reduce emissions. For the design of new buildings, we must employ a performance-based design approach, where we maximize passive design techniques first (response to climate, site, environmental factors), and then utilize advanced building systems and technologies to minimize energy consumption. Integration of building performance analysis tools and procedures is essential for performance-based design, since we can only understand the impacts of our various design decisions on building performance by simulating and modeling complex relationships between design strategies, climate, building systems, and their effects on building performance and energy consumption. Then, the remaining energy needs must be provided by renewable energy sources, onsite or delivered to the site.

Regenerative design of existing buildings is a viable approach for decreasing energy consumption associated with the building stock. The vast majority of the existing buildings were built before energy codes were established and extensively enforced, and thus are the "elephant in the room" when it comes to decarbonization strategies, since systematic energy-efficient retrofits require significant investments and policy changes. But, without tackling the problem of existing buildings, we will not advance too far in decarbonizing the built environment. Regenerative design utilizes comprehensive sustainable, energy-efficient, and resilient design methodology. A regenerative sustainability framework is based on systems thinking, where technology, environment, and human factors are considered as essential parts. The relationship among different systems undergoes reconceptualization during regenerative design, expanding traditional design pursuits to involve sustainable design practices. In building retrofits, regenerative design is conceived as the exploration and improvement of buildings' functionality, aesthetics, human comfort, and energy performance. Different from historic preservation, regenerative design of existing buildings can be applied extensively for retrofits and adaptive reuse, allowing buildings of different types, functionalities, and sizes to be upgraded efficiently and cost-effectively.

Many municipalities are developing decarbonization plans with specific carbon emission reduction targets, and existing buildings tend to be a central component of these plans. For example, the city of Chicago issued its 2022 Climate Action Plan, which calls for 62% reduction of city's carbon emissions by the year 2040. Decarbonization of affordable multifamily residential buildings, retrofits of single-family homes, and investments into building-integrated renewable energy systems for public buildings are prioritized, based on allocated funding in this plan. New York City has a target to achieve carbon neutrality in its building stock by the year 2050. Its plan covers new construction and retrofits of existing buildings, with a specific focus on four building types that represent a majority of the buildings' energy use. The state of Massachusetts issued the Decarbonization Roadmap in 2020, which identifies cost-effective and equitable strategies for reducing emissions by at least 85% by 2050 and achieving net-zero emissions in the entire state. Existing buildings are one of the main components of the plan, but the plan also addresses land use and infrastructure, the transportation sector, energy pathways, economic and health impacts, as well as the non-energy sector. I had an opportunity to serve on the Technical Steering Committee during the development of this plan; an inclusive stakeholder participation was critical, which included governmental representatives, researchers, an advisory committee, community organizations, regional planning authorities, and the public. The methodology that was used in the development of this plan can certainly be adopted by other regions and states.

But what are the roles of academic institutions and the architectural profession in decarbonizing the built environment? Through educational programs and research and training opportunities, architectural schools must prepare the next generation of architects with the necessary knowledge and skills to embrace performance-based and regenerative design. Research opportunities are vast, from new technological solutions, advanced materials and building systems, and innovative design and construction approaches, to social, cultural and economic factors. Collaboration with the architectural industry, as well as interdisciplinary and translational research, are imperative since we cannot solve this problem alone. The School of Architecture at the University of Utah is doing exactly that: teaching our students to be innovative, critical thinkers who respond to environmental, cultural, and social factors; who employ resilient and performance-based design strategies; and who can quantitatively and qualitatively evaluate their design decisions and environmental impacts. We are also engaged in various research studies and community-engaged projects ranging from novel building technologies and systems, to designing and constructing high-performance, sustainable buildings. We collaborate with the architectural industry and offer life-long learning opportunities for professionals. Our students design and build off-grid, affordable homes for local and regional communities. And we are sharing the results of our efforts, since documentation and research dissemination are essential for advancing our knowledge.

Enjoy reading the tenth issue of the School of Architecture's *Dialectic* journal. ▪

NOT JUST NUMBERS: REIMAGINING ARCHITECTURE FOR THE CLIMATE EMERGENCY

MICHAEL ABRAHAMSON, DWIGHT YEE

Michael Abrahamson is an Assistant Professor of Architecture at the University of Utah, where he teaches history and theory surveys, research and professional practice seminars, and design studios. He is an award-winning architectural historian and critic whose research explores the materiality of buildings and the methods of architectural practice across the twentieth century. Through these lenses, his writing reveals the systems of creativity, subordination, and legitimation that undergird the creation of architecture in the professional office and on the construction site. His writing has appeared in the *Journal of the Society of Architectural Historians*, *San Rocco*, *Project Journal*, *Journal of Architectural Education*, *The Architectural Review*, *CLOG*, and *Take Shape*, as well as the exhibition catalogs *SOS Brutalism* (Deutsches Architekturmuseum Frankfurt) and *Flying Panels* (ArkDes Stockholm). He previously co-edited issue VIII of *Dialectic* on the theme of subverting, which received a publication grant from the Graham Foundation for Advanced Studies in the Fine Arts.

Dwight Yee is Assistant Professor of Architecture (Clinical) at the University of Utah and a partner at Process Studio, an award-winning firm that focuses on projects within the Intermountain West. As both a practitioner and educator, Dwight has explored the relationship between design and construction, focusing on craft, execution, and an innovative use of materials. It is his hope that his work, and the work of his students, will reflect an excitement and joy in thinking about how things go together. Dwight is a licensed architect in Utah, a LEED Accredited Professional, and is currently serving as Vice President of the Utah Chapter of the National Organization of Minority Architects and the Utah State Representative for AIA's Small Firm Exchange.

For this, the tenth volume of *Dialectic*, we as editors decided to foreground environmental sustainability and resilience, which, over the past several years, has undeniably become the defining issue of our time in the discipline and the profession. While this volume may be long overdue, ecological and environmentalist thought has been a consistent thread addressed in past volumes.

As recently as volume VIII, James Miller and Erik Nay offered a critique of the way "the rights of nature" are often deployed to argue for a hands-off approach to ecological management, and thereby supersede approaches practiced by indigenous nations.[1] In volume VI, Phoebe Crisman asked architects to consider the ecological consequences of their decisions regarding craft and construction technique,[2] while José Galarza implored us to overcome our myopic focus on the technical side of sustainability and open ourselves to indigenous epistemologies.[3] In volume IV, Alissa de Wit-Paul traced a genealogy of eco-architecture through several iconoclastic architects working in New Mexico during the 1960s and 1970s.[4] And, in a contemporary echo of De Wit-Paul's protagonist Michael Reynolds, in volume III Travis Bell proposed a "harvest-design-build" methodology to bring students more in touch with the affordances of hyperlocal ecologies and waste streams.[5] This tenth volume introduces five more articles to the journal's ongoing discourse regarding the responsibilities toward environmental sustainability that architecture carries.

Questions of environmental responsibility have also proven central to the evolution of *Dialectic*'s publishing format. This volume marks our first to fully adopt an online-first, multimedia platform. This is partly an acknowledgment that the dialog on contemporary practice has shifted, with platforms such as Archinect, Dezeen, Archdaily, Divisare, and many others becoming defacto hubs for these conversations. The importance and success of these digital-first platforms, we feel, are due in large part to the ease of access they provide and the opportunity for more diverse and equitable representation of architecture from around the world. While, of course, the quality of information matters just as much as its accessibility, we hope that outdated models of sequestered knowledge are being displaced by open access platforms, even within academia. But our shift to online-first publishing also reflects our recognition of the environmental impacts of global supply chains that enabled our print issues (exacerbated by the COVID-19 pandemic that was in full swing as we began conceptualizing this issue in early 2021), and our commitment to leading with action, not just words.

This shift in format also comes during a transition in our editorship. Co-founder of *Dialectic*, Associate Professor Ole Fisher, departed the School of Architecture for his native Germany in January of 2022. His time in Utah left an indelible mark, and we hope that in the years to come the evolution of *Dialectic* will extend that legacy, captured in the content and experiences we will provide.

A dialectic typically involves opposing sides, but here we are positing two aspects of the same problem: the unsustainability of our built environment industry. In our call for proposals, we posed a series of prompts that were intended to situate a dialog between two suggestive phrases, "mobilizing agency" and "decarbonizing design." The former was intended to elicit new ways of discussing, theorizing, or conceptualizing the issues of sustainability and resilience, and the latter would, we hoped, elicit questions about paths of implementation, both current and hypothetical. The idea, in other words, was that one section would be policy/theory-oriented and one action/design-oriented, allowing for contributions both from more academic and professional sectors. But the submissions we received don't exactly fit that categorization; the difference between them is more nuanced and fluid than we thought it would be. Perhaps the discourse is better integrated than we imagined. We have nevertheless retained these phrases as section titles to organize our thoughts within this editorial.

Our attitudes regarding architecture's response to the climate crisis have been informed by colleagues and collaborators within the School of Architecture, where we are surrounded by practitioners implementing decarbonizing practices from the house to the city, and scholar-teachers introducing students to their responsibilities through assignments addressing issues from everyday waste streams to advanced thermodynamic analysis. Intellectually,

this context encouraged us to assemble a call whose ambitions stretched far beyond aging buzzwords like sustainability or resilience. In particular, we felt our imperative was to move beyond quantitative measurements of thermodynamic performance improvement, beyond passive or active design strategies, to goals that were more aspirational. We wanted to be both more specific and more radical. To highlight decarbonization and the agency that will be necessary to reach it in this volume, therefore, is both a realization that we are running out of time as well as a recognition that the issue of climate change may at last have enough traction within architecture for dramatic, even radical actions to be implemented. The remainder of this editorial will sketch some of the goals we've set for ourselves as a scholar and an architect, respectively, and how the articles in this volume elucidate, complicate, and elaborate those goals.

MOBILIZING AGENCY: SETTING A NEW AGENDA FOR ARCHITECTURE SCHOLARSHIP

As we noted, questions of sustainability and resilience are not new, but scholarly interest in the evolution of these attitudes has accelerated rapidly in recent years. Historians and theorists of architecture have taken both optimistic and pessimistic positions regarding architecture's—and architects'—influence on climate debates. In a 2019 architectural history survey, for example, Barnabas Calder argued for a ground-up reframing of the way we understand all of that history on the basis of energy use and misuse, arguing that it is incumbent upon those who study the past to choose their subjects wisely so that they might inform future design practice.[6] In this vein, Daniel Barber has endeavored to recover pre-HVAC techniques within modernism for an architecture that "mediates, mitigates, and negotiates" the liminal space between building and climate.[7] Viewing modernist architecture from a slightly different perspective, Kiel Moe has mapped the "construction ecology" of major landmarks, tracing supply chains and material origins to reveal the redundancies and waste that resulted from revered New York monuments such as the Empire State Building and Seagram Building.[8]

But, as others have reminded us, the role and agency of the architect in a transformation of industry and economy are uncertain at best. Elisa Iturbe, in her work on "carbon form," argues that it isn't only through hands-off attitudes toward energy efficiency that architecture impacts climate, but also by actively concretizing "carbon-intensive ways of life." Viewing architectural form as an index of energy flows, Iturbe proposes, is a necessary schema even if this marginalizes architects from what they understand to be their central position in the building sector.[9] Extending this line of thought, Mark Wigley has pessimistically suggested that the figure of the architect has never truly been "essential" and may not be salvageable from its complicity in practices of extraction and waste.[10]

The prescription to these maladies is perhaps to stop thinking of architecture as an isolated profession and to start to build solidarities with others in the built-environment sector, as advocated by members of The Architecture Lobby's Green New Deal working group in their research report "A Just Transition for the Building Sector."[11] The fundamental change that is increasingly necessary would inevitably have knock-on effects in professions which, like architecture, presently measure their contributions and pay their employees primarily through the perpetuation of economic growth. Working with those outside the strict confines of our profession would help us more effectively use our influence to advocate for decarbonization within the massive economic powerhouse that construction represents.

Indeed, as David Harvey reminds us, the fulsome mass of contemporary construction far outweighs the elite client decisions regarding energy efficiency and material specifications that architects often cite as evidence of the environmental commitment within their work; the "endless compound growth" inherent to capitalism is so deeply entrenched within architecture culture that there may seem to be no alternative to keep the profession alive.[12] But alternatives have nevertheless been explored in various forms, notably in the 2019 Oslo Architecture Triennial, "Enough: The Architecture of Degrowth." Its exhibitors imagined ways to set reasonable limits that align consumption with planetary limits, from using dramatically

less concrete, to the design of fully demountable buildings, to encouraging more sustainable forms of tourism—fundamentally rethinking everything from the organization of our cities to the materials from which we make our buildings.[13] It is this kind of radical thinking—beyond numbers—that we hope to see from architects and scholars in the near future.

Compared to such dramatic reimaginings, the goals set by articles in this volume are considerably more modest, but we hope they nevertheless make an impression. We have arranged the texts in roughly chronological order based on their subject matter. In the first of five, Ellen Burke recovers a forgotten forebear to contemporary environmental justice activism in Ellen Swallow Richards, whose advocacy for public health infrastructure broke new ground in the early twentieth-century United States. Next, Paula Kupfer highlights ecofeminist strains within the photomontages of Mexican modernist Lola Álvarez Bravo, revealing that the interplay between the built and the natural was crucial to Mexican modern architecture—in particular, perhaps offering design strategies for a warming world. In the longest of our articles for this volume, Cameron McEwan injects new theoretical terminology imported from critical theorists Mackenzie Wark and Paolo Virno into architecture discourse, then recontextualizes familiar architectural figures from the recent past to accelerate our disciplinary conversation on the climate crisis. Next, Marilena Mela offers an intensive qualitative review of contemporary representational techniques used in various built environment professions to persuade the public to support sustainable energy projects. Lastly and poignantly, Thomasina Pidgeon mobilizes lived experience and the power of photographic imagery to ask trenchant questions about the continuing colonial extractivism of land development in British Columbia and elsewhere.

That these authors have directed their attention to culture as much as technology, and inward toward "developed" nations and economies, is no accident. As prime culprits for carbon emissions, the cultural field in such affluent societies must rapidly and urgently be made ready for transformation. As philosopher Kate Soper has written in her arguments for an "alternative hedonism":

The critical gaze should be centred on the activities of human beings in affluent societies, both as producers and consumers; and it needs, too, to develop a more seductive vision of the very different forms of consumption and collective life we will need to adopt if we are serious about ecological sustainability. The main aim must be to challenge the supposedly natural (in the sense of inevitable and non-political) evolution of both the capitalist growth economy and the consumer culture it has created, to undermine the sense that this development has been essential to human well-being, and to argue that we will prosper better without it.[14]

This radical appraisal of our current state of affairs was our starting point for the volume of *Dialectic* you now find open in your browser window.

DECARBONIZING DESIGN: EMBEDDING ACTIVISM INTO AN INTEGRATED PRACTICE

Conversations around sustainability have coalesced around carbon as a measurable impact that can be calculated and offset in ways that are often external to building sites. The tangibility of this approach—metrics that can be compared, contrasted, and mapped from year to year—has great appeal. We can "observe" results; can "show" progress. But what is highlighted by our contributors is the need to consider other, non-quantitative measurements that are inextricably linked to issues of sustainability. The complexity of achieving a truly resilient and sustainable built environment requires a reconsideration of certain foundations of our profession, including an acknowledgment that, as a discipline, architecture is inherently tied to consumption and production.

This is not news, but nevertheless, the profession's main organizational bodies in the United States are still catching up. In their 2022 Framework for Design Excellence, the American Institute of Architects (AIA) has, belatedly, articulated a vision for a holistic approach to practice. It recognizes the interconnection between environmental issues and social inequity, arguing that "Every project can be used as a platform for addressing big problems and providing cre-

ative solutions. Every line drawn should be a source of good in the world."[15] Identifying ten principles that should be considered for every project, the Framework for Design Excellence is an overdue acknowledgment by the profession of its responsibilities that, while rather explicitly displaying the challenges at hand, acknowledges that this is "a vision of what the profession strives to achieve," and not at all a reflection of the current state of affairs.[16]

As the Framework gestures towards, going beyond the numbers means considering the cascade of impacts that design decisions have and weighing the externalities of those decisions far beyond the scale of the building. We have to recognize that the impact of decisions must be considered within a greater web of relationships—policy, politics, culture, economics, and experience. Decarbonizing design, then, is not only a calculation of carbon offsets or careful material selections; rather, decarbonizing design is also how we, as a discipline and profession, define the intellectual parameters and scope of work we will undertake. It demands that our profession, in order to truly have an impact, asserts its role as more than an association of powerless service providers. Instead, it must actively promote alternatives that can shift the direction of current development dramatically enough to meet the climate crisis head-on. This of course must involve architects offering their expertise in the development of regulatory initiatives or incentives at the municipal, state, federal, and even global levels. What's necessary, in other words, is action that exceeds the design decisions of individual architects or firms—but this shouldn't be taken to excuse architects from making environmentally responsible choices at the scale of their projects, as well.

As a profession, there is a concerted effort to recognize this shift, reflected in the AIA's 2022 Gold Medal award to Angela Brooks, FAIA and Lawrence Scarpa, FAIA, and the 2022 AIA Architecture Firm Award to MASS Design Group. In recognizing Brooks and Scarpa, the selection committee specifically noted that "They are motivated by a social responsibility and environmental stewardship that seeks to find ways to improve the livability of cities and ennoble the daily lives of its citizens. Actively engaged

citizen-architects, their efforts have fundamentally reshaped public policy initiatives that address critical issues and reforms that serve the public good, increase housing equity, and improve the built environment."[17] Similarly, in awarding MASS Design Group its Firm Award, the committee singled them out as architects that are "Always committed to ensuring its architecture addresses the world's most pressing social issues … MASS continually demonstrates that a healthy built environment is crucial for supporting communities as they confront history, heal, and explore new possibilities for the future."[18]

What is most notable in the AIA's recognition of these practitioners is the activist roles they have undertaken. No longer simply service providers deferring to the conditions given to them, AIA specifically highlights the efforts of Brooks + Scarpa and MASS to advocate for change holistically in terms of sustainability, equity, and climate justice. As the selection committee asserted, "If every architect operated in this manner, combining design excellence, social and environmental responsibility, and public service, our profession's relevance and positive impact on society would increase ten-fold."[19] Fortunately, these celebrated architects are far from alone in championing an integrated consideration of architecture's consequence and impact.

This integrated approach to addressing sustainability and equity are now central to how many architecture schools shape their curriculum and student experiences. The University of Utah's Design Build program—which has long been the centerpiece of our professional degree's curriculum—is just one of many today that situate students within projects that simultaneously confront questions of environmentalism, social justice, community service, and equity. Rather than siloed topics, our students experience a design process that embeds them in questions of community engagement and service, the role of design in providing tools and resources for self-empowerment, and what sustainability means in relation to specific contexts, clients, and circumstances. As a result of such pedagogical initiatives, as well as the general cultural milieu in which they have been brought up, a new generation of architects now views these issues as inherent to their work, not a supple-

ment used for callous marketing purposes. But we shouldn't lazily assume generational attitudes will automatically bring about the change that's necessary.

To decarbonize, moreover, requires an economy judged by metrics other than GDP growth, and a profession whose success is judged by something other than the billings index. What if the economy was measured by metrics of human health and wellbeing? How might the profession's success be judged as a result? The conversation around sustainability must consider not only quantitative measurements, but also a reconsideration of the foundations of our profession. At the very least, quantitative metrics must be better contextualized and shouldn't be considered the inevitable and only means of assessing architecture's impact.

We are a discipline that is inherently tied to consumption and production (economic value), and if we do not re-evaluate this relationship, then we will continue to find our agency constrained. Professional organizations must advocate for modes of practice that challenge the passive acceptance of economic "realities," and promote an activist mode of engaging with the built environment and construction industry. Architecture can and should be much more than service provision, more than just "taking orders." Architects can offer analysis and project a path forward. To decarbonize design, therefore, need not be paralyzing—it should be empowering. This is perhaps the greatest design problem we can face: confronting how we, as a discipline and profession, must identify our own agency and opportunities, then redesign architecture to maximize our effectiveness.

CONCLUSION

Going beyond the numbers, beyond discourse, requires mobilization. Even when relatively small, impacts must be celebrated for their compounding effects. Whether a novel theorization of architecture's environmental responsibility, a new assembly or construction method, or an innovative model of practice that enables broader agency within the building sector, these impacts can together contribute to the now-inevitable evolution of architecture from its cur-

rent form. The future should bring an architecture that encourages less carbon-intensive lifeworlds and lifestyles, while avoiding the sanctimonious minimalism of Marie Kondo and her ilk as well as the techno-solutionism of thinkers like Patrik Schumacher.

What we must work toward is an architecture that avoids externalizing its impacts at all costs. This necessitates forms of architectural practice and modes of design that are no longer dependent upon what Jason W. Moore has called "cheap nature": the willingness to disclaim or simply ignore the energy-intensiveness of human construction activity and building operations.[20] We need a design that consciously departs from what Iturbe calls "carbon form"—or what Jiat-Hwee Chang and Tim Winter earlier termed "thermal modernity"—toward new ways of conceiving and making architecture.[21] Moreover, we need architects who understand the levers of power they can wield, and those they simply can't without forming relations of solidarity with other building sector workers.[22] While this volume's modest contribution obviously won't achieve the radical desired outcome on its own, we feel it is crucial for our efforts to be oriented in this direction at this moment. In doing so, we should follow the example of those willing to frame the stakes in the starkest of terms.

Indigenous liberation activists The Red Nation have this to say regarding the future of the human species on Earth: "Healing the planet is ultimately about creating infrastructures of caretaking that will replace infrastructures of capitalism. Capitalism is contrary to life. Caretaking promotes life."[23] They draw an immediate connection between decarbonizing and *decolonizing*, pointing out that Indigenous peoples have maintained relations to their environments for millennia prior to the onset of Western, quantitative practices of environmental management. To draw down our current growth-driven economy requires a fundamental reimagining of sectors like construction, within which architects provide design services.

This establishes yet another, even stronger bond between the present volume and the extant intellectual project of *Dialectic*, bringing this editorial full circle. As the content of prior volumes and articles attests,

this journal has long seen decolonizing as one of its crucial intellectual and critical tasks. We join our colleagues and collaborators in calling for decolonization as essential for adopting permanently sustainable modes of relation to our environments and ecologies. ▪

ENDNOTES

1. James Miller and Eric Nay, "Architecture and the Rights of Nature," *Dialectic* VIII (2020), 46-54.

2. Phoebe Crisman, "Toward an Ecology of Architectural Craft," *Dialectic* VI (2018), 10-15.

3. Jose Galarza, "Restoring Presence: Valuing the Building Craft of Non-Western Knowledge Systems," *Dialectic* VI (2018), 19-27.

4. Alissa de Wit-Paul, "Eco-Architecture Advocates: Mazria, Reynolds, and Predock's Professional Crossroads Between Architecture and Environmentalism," *Dialectic* IV (2016), 87-97.

5. Travis Bell, "Harvest-Design-Build as a Sustainable Design Pedagogy," *Dialectic* III (2015), 64-69.

6. Barnabas Calder, *Architecture From Prehistory to Climate Emergency* (London: Pelican Books, 2021). Luis Fernández-Galiano broke ground for this approach in his theoretically-rich study of the millennia-old search for thermal comfort, *Fire and Memory: On Architecture and Energy* (Cambridge, Mass.: MIT Press, 2000).

7. Daniel Barber, *Modern Architecture and Climate: Design before Air Conditioning* (Princeton: Princeton University Press, 2020), 8-9.

8. Kiel Moe, *Unless: The Seagram Building Construction Ecology* (Barcelona: Actar, 2021); Kiel Moe, *Empire, State & Building* (Barcelona: Actar, 2017).

9. Elisa Iturbe, "Architecture and the Death of Carbon Modernity," *Log* 47 (Fall 2019), 10-29.

10. Mark Wigley, "Returning the Gift: Running Architecture in Reverse," in Space Caviar, eds., *Non-Extractive Architecture: On Designing without Depletion*, v. 1 (Berlin: V–A–C Press & Sternberg Press, 2021), 41-57.

11. The Architecture Lobby, "A Just Transition for the Building Sector: Toward a Radical Transformation of Housing and the Built Environment," https://gnd.architecture-lobby.org/project/a-just-transition-for-the-building-sector, Accessed July 6, 2022. See also Valerie Lechene, "A Just Transition for the Building Sector: The Architecture Lobby's Retroactive Roadmap," *Science For the People* v. 23, n. 2 (Summer 2020), https://magazine.scienceforthepeople.org/vol23-2/green-new-deal-aoc-architecture-climate/

12. David Harvey, "Contradiction 15: Endless Compound Growth," in *Seventeen Contradictions and the End of Capitalism* (Oxford: Oxford University Press, 2014), 222-245. See also "Contradiction 16: Capital's Relation to Nature," 246-263.

13. See Phineas Harper and Maria Smith, "More Than Enough," in *Non-Extractive Architecture*, v. 1, 223-241. Harper and Smith were co-curators of the 2019 Oslo Architecture Trienniale with the firm Interrobang, Matthew Dalziel and Cecelie Sachs Olsen.

14. Kate Soper, *Post-Growth Living: For An Alternative Hedonism* (New York: Verso, 2020), 13.

15. American Institute of Architects, "Framework for Design Excellence" (2022), https://www.aia.org/resources/6077668-framework-for-design-excellence

16. "Framework for Design Excellence."

17. American Institute of Architects, "2022 Gold Medal" (2022), https://www.aia.org/showcases/6450171-angela-brooks-faia-and-lawrence-scarpa-fai

18. American Institute of Architects, "2022 Architecture Firm Award" (2022), https://www.aia.org/showcases/6450254-mass-design-group

19. "2022 Gold Medal."

20. Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (London: Verso, 2015). Moore concisely defines the project of Cheap Nature as such: ""appropriating uncapitalized nature as the pedestal of labor productivity" (ebook, 62).

21. Iturbe, "Carbon Modernity"; Jiat-Hwee Chang and Tim Winter, "Thermal Modernity and Architecture," *The Journal of Architecture* v. 20, n. 1 (2015), 92-121.

22. The Architecture Lobby, "A Just Transition."

23. The Red Nation, *The Red Deal: Indigenous Action to Save Our Earth* (Brooklyn: Common Notions, 2021), 108.

TOWARDS AN EXPANDED HISTORY OF ENVIRONMENTAL JUSTICE IN AMERICA: ELLEN SWALLOW RICHARDS AND HUMAN ECOLOGY

ELLEN BURKE

Ellen Burke is associate professor in the Department of Landscape Architecture at Cal Poly San Luis Obispo. She teaches and writes on resilience and regeneration in urban contexts, including food systems, designed ecology, landscape performance, and community-based environmental justice projects. She has published in *Landscape Research*, *Avery Review*, *Bracket One* and the collection *Food Waste Management: Solving the Wicked Problem* (Palgrave Macmillan) and her research investigations have been funded by ArtPlace America and the Landscape Architecture Foundation. She holds a Bachelor of Arts from Vassar College and a Master of Landscape Architecture from Harvard University Graduate School of Design.

ABSTRACT

The environmental justice (EJ) movement in the United States emerged in the same era as the civil rights movement, addressing issues of race, human rights, and the environment, and protesting with non-violent engagement tactics. But the core focus of the movement—concern with human health in the lived environment—can be found as early as the mid-1800s in the sanitary reform (SR) movement in England and the United States. While the SR movement had different aims and goals than contemporary EJ activism, both connect two important concepts: the effects of environmental modification on human health and the inequitable distribution of risk and harm. Both movements also challenge traditional ideas of environmentalism that focus on "pristine wilderness".

As EJ grows, expanding the theoretical history of the movement is important to situate it in a longer dialogue about human health and the environment. This paper examines the ways that advocates for environmental health have framed their arguments relative to larger social contexts, and the long-term consequences of that framing on human health in urban environments, with a particular focus on comparing the work of Ellen Swallow Richards, a pioneering female chemist, and the modern environmental justice movement.

INTRODUCTION

Histories of environmental justice (EJ) in the United States situate its founding in the late 20th century, in grass-roots activism to address environmental harms such as pollution in inhabited places, including urban neighborhoods and rural communities. EJ is described as challenging traditional ideas of environmentalism in the US that focus on "pristine wilderness" and endangered species, and scholars of the movement have noted the ways that race and gender intersect with differing approaches to defining environmentalism.[1,2] Early leaders in traditional environmentalism were largely white men, writers like John Muir and Henry Thoreau (Figure 1). In contrast, early leaders of the EJ movement were largely women, and often poor women of color. Their focus was on links between human and environmental health, and on calls for self-determination in the quality of one's immediate, lived environment (Figure 2).

In 1982, residents of Warren County, North Carolina challenged the siting of a toxic-waste landfill facility in their community with six weeks of marches and protests, including blockading trucks arriving at the landfill. This organized action, while not the first of its kind, is often identified as the beginning of the EJ movement.[3] Other histories locate the movement's beginnings in 1968 with Dr. Martin Luther King's support of striking sanitation workers in Memphis, Tennessee, or the 1969 grape boycott organized by United Farm Workers.[4] Each of these events are direct actions taken to protect human health and recognize that burdens of pollution are inequitably distributed based on race and class. Gordon Walker's seven characteristics of the EJ movement are evident in these early actions, including emphasis on the politics of race, a focus on justice to people in the environment, and demands for participatory justice.[5] EJ is often described as an extension of the civil rights movement, as early organizers aligned with civil rights leaders, used similar methods for non-violent engagement, and addressed issues of race and human rights. But the core focus of the movement—concern with human health in the lived environment and a recognition that environmental harms are inequitably distributed—can also be
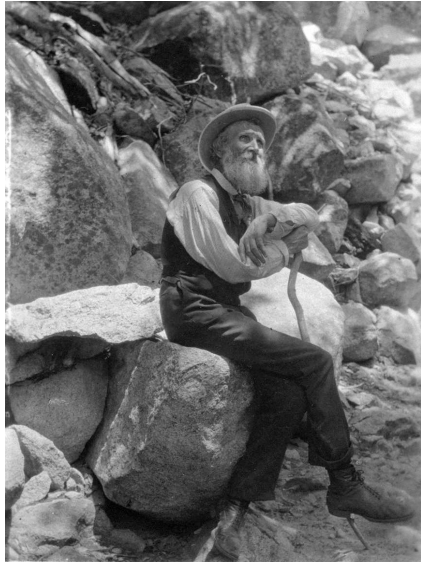
Figure 1: Portrait of John Muir. Francis M. Fritz, John Muir, 1907, Public domain, via Wikimedia Commons

Figure 2: A citizen is removed forcibly by law enforcement agents during the 1982 Warren County protests which mark the beginnings of the environmental justice movement. Ricky Stilley, Warren County, 1982, Courtesy of R. Stilley

connected to a longer history. The understanding that environmental harm is harmful to human health can be found as early as the mid-1800s in the sanitary reform (SR) movement in England and the United States. While the SR movement had different aims and goals than contemporary EJ activism, both connect two important concepts: the effects of environmental modification on human health and the inequitable distribution of risk and harm. For example, an early pioneer of the SR movement, Edwin Chadwick, identified patterns of mortality related to social class in mid-1800s London in his study *General Report on the Sanitary Conditions of the Labouring Population of Great Britain*.

As EJ grows to become a global movement with a wide array of concerns, expanding the theoretical history of the movement is important to situate it in a longer dialogue about human health and the environment.[6] Doing so can help to identify entrenched patterns of ill-health, urban form, and socio-economic class and race beyond the relatively short history of the existing EJ movement, and can provide scholars and advocates with a longer-range vision of root causes, and identify potential strategies for action. This paper examines the ways that some advocates for environmental health, across

two time periods, have framed their arguments relative to larger social contexts, and the long-term consequences of that framing on human health in urban environments, with a particular focus on comparing the work of Ellen Swallow Richards and the modern environmental justice movement.

ELLEN SWALLOW RICHARDS, *OEKOLOGY*, AND ENVIRONMENTAL JUSTICE

Ellen Swallow Richards was a leader in the SR movement in the late 1800s, and is notable for her accomplishments within the field, as well as her many firsts as a woman, including being the first woman to graduate from the all-male Massachusetts Institute of Technology (MIT) in 1873 and the first woman to work for MIT on the teaching and research staff of the chemistry department (Figure 3). Richards focused on environment as an inhabited place, adopting the term *oekology*, which today describes the scientific study of relationships between living organisms and their environment but which she described as "the science of the conditions of the health and well-being of everyday human life."[7]

Coined in 1875 by German zoologist Ernst Haeckel, *oekology* was derived from ancient Greek *oikoc*,

meaning "house" or "dwelling," and was introduced in the United States by Richards in 1892 (after correspondence with Haeckel). She described environment as consisting of natural features like climate, as well as those produced by human activity, such as "noise, dust, poisonous vapors ... dirty water and unclean air."[8] Similarly, EJ activists understand environment as an inhabited place, defining it in complex, interrelated terms. As Robert Bullard summarizes the position, "the environmental justice movement ... basically says that the environment is every-thing: where we live, work, play, go to school, as well as the physical and natural world. And so we can't separate the physical environment from the cultural environment."[9]

The focus on the daily, inhabited environment contrasts with the work of traditional environmentalists such as John Muir, which focuses on preservation of areas understood as untouched by human inhabitation. A contemporary of Richards, Muir focused on wilderness[10] preservation in Yosemite Valley, California, helping to draw up the proposed boundary for the national park in 1889. In some ways, both focused on health. Muir framed wilderness as a tonic for the spiritual ills of society at his time, a place to heal the soul through contact with fresh air and beauty.[11] He spent time hiking and living in wilderness areas, and through his writings advocated for the transcendent qualities of

places as yet visually untouched by modern human inhabitation. Richards' interest was in the very places of ill health that Muir's writings excoriated—cities and industrial areas—but sought instead to understand the relationship between pollution and human health and to develop means of improving these conditions.

It is important to note that unlike EJ activists and some of her contemporaries in the SR movement such as Edwin Chadwick, Richards did not recognize how race, ethnicity, and class impacted health outcomes in the environment, and despite her own achievements she largely accepted traditional gender roles in labor divisions. Compared to the Settlement House movement, also contemporary to her time, Richards tended to focus on systemic environmental issues through a scientific (chemical) perspective, rather than a social work perspective, and to seek to reform power rather than individuals. Richards' work has been characterized as somewhat isolated, both from other scientists of her time, because of her gender, and from other social reformers due to her age; she was, for example, a full generation older than the feminist and social worker Jane Addams.[12]

The overlaps and dissonances between Richards' work and the field of environmental justice are discussed here through her major accomplishments:
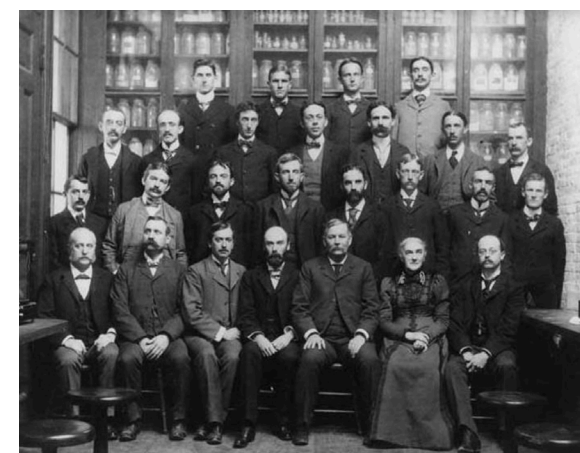

Figure 3: Ellen Swallow Richards was the first woman to be admitted to MIT and to teach on their faculty. Unknown, MIT Chemistry Staff, date unknown, MIT archives

Figure 4: Richards in the field. Unknown, Ellen Swallow Richards gathering the scum on Jamaica Pond, Boston, Ma., 1901, Courtesy of the Sophia Smith Collection

Figure 5: A view of the Hudson River and adjoining neighborhood that would have been most impacted by sewage from Vassar College prior to Richards intervention. Unknown (Detroit Publishing Co, publisher), Poughkeepsie bridge, 1906, Public domain, via Library of Congress

advocacy for state responsibility to ensure environmental health, pioneering infrastructure of sanitation, and advocacy for the role of women in enacting environmental health through organized participatory action.

Responsibility of the State

Richards sought to develop governance over the sources of industrial pollution, describing the potential for "the science of a controllable environment."[13] Her work in this field led to regulations in a number of areas, including the first factory and food inspection laws in the nation. Richards was appointed head of the nation's first public health laboratory (at MIT) and completed the first comprehensive study of drinking water in

1887. Her work led to the establishment of state-mandated water quality standards and state-managed municipal sewage treatment plants, and her research and documentation methods became the model for waste water management for decades (Figure 4).

In outlining a plan towards a healthy urban environment, Richards debated the merits of legislation versus education. She saw the root of the issues differently than EJ activists do. While EJ activists fight against centralized planning powers that inequitably and/or intentionally[14] locate harmful facilities in low-income communities and communities of color, Richards saw crowded conditions, lack of sanitary knowledge, and lack of environmental regulations as the problem. Richards was writing before the existence of environmental laws and planning. She wanted people to collectively

protect water and air resources from pollution, arguing for regulation of these resources by the state, describing the state as "a multiplication of its citizens."[15]

She argued for city planning boards, and the need to plan for housing and the sanitary infrastructure to support it. Her writings praise the Garden City model and display a paternalistic attitude perhaps consistent with her time. She envisions "capitalists" investing in developing a healthy urban fabric, one with "habitations decently comfortable, wholly sanitary, and ... over each group an inspector as both agent and teacher."[16] Decades later, arguments about crowding and "filth" in urban conditions would be used by planning boards in the urban renewal period (1930-1970s) to justify clearance and forcible relocation of low-income and minority populations.[17] In this way, Richards' work diverges from EJ tenets due to the ways in which she envisioned and defined the state, and who the state might be composed of and beholden to.

Infrastructures of Sanitation

Richards' work, as described above, laid a foundation for regulated sewage treatment and water quality standards. Richards understood that although urban environments do not look natural, they function as ecological systems, and that human modifications impact natural systems such as waterways. She applied her work in Massachusetts to her alma mater of Vassar College, in upstate New York, designing a system to treat their sewage, converting the waste into nutrients for soil management, and replacing the previous system of dumping the college's sewage into the Hudson River (Figure 5).

Richards' nested system of environmental relationships—the family, the community, and then the larger world and its resources—is evident in this project.[18] In discussing the need for social action, Richards outlined a relationship between the individual and the larger community.

> The individual may be wise to his own needs, but powerless by himself to secure the satisfaction of them. Certain concessions

to others' needs are always made in family life. The community is only a larger family group, and social consciousness must in time take into account social welfare ... Men band together, therefore, to protect a common water supply, to suppress smoke, dust and foul gases which render the air unfit to breathe. [19]

She described her work at Vassar College as the "right principle in taking care of wastes of an establishment by itself (*family*) instead of fouling a stream to become a menace to the health of others (*community*) ... [it] must be followed up if the land is to remain safely habitable (*larger world and its resources*)."[20] Infrastructure was part of environmental management, and a relational ethic across scales.

EJ activists often oppose infrastructure, like sewage treatment plants, for the inequitable distributions of facilities that fail to honestly assess the health effects on neighboring communities. While Richards anticipated the need for infrastructure to protect human health, she overlooked or did not foresee how racism and classism would be embedded in decision-making about siting such facilities.

Role Of Women & Organized Action

Richards established the American Home Economics Association in 1908. She derived the term home economics from *oekologie* and the "economy" of nature, and for her it described a science of the relationships between human use of the environment and human health.[21] Home economics became a widespread program of study in the US for decades, and addressed issues of health, food and nutrition, and community development, among others.[22] Richards' advocacy for education, and specifically education of women, intended to create possibilities for applied knowledge in the management of individual households, but also organized action to combat communal harms.

Richards' writings describe a collective sense of "subconscious loss of power over things" by women that leads to accepting forms of unhealthy

urbanity, disease, and lack of education for women as normal.[23] She raised the possibility of collective action by women, describing society as having a "great unused force in its army of housewives, teachers, mothers."[24] She also identified examples of successful women leaders, and claimed that because most regulations for health at her time (such as household cleanliness or food preparation guidelines) would be carried out by women, that women would be more appropriate in the role of inspectors or educators than men. Richards here was focused largely on middle-class women, overlooking the "great army" of women who already worked as domestic help in the form of maids, cooks, nannies, or washing-women.

Overlaps between Richards' work and EJ can be seen in the case study of Concerned Citizens of South Central Los Angeles (CCSCLA), a community group that successfully blocked a proposed waste incinerator in their neighborhood. CCSCLA was formed from women living near the proposed incinerator, women with no special knowledge of science or engineering. Activists educated themselves on the health risks of the incinerator and were able to expose risks being denied by city officials.[25] CCSCLA's victory came about through education, engaged citizenry, and organized action, all of which were also advocated for by Richards, who wanted women to be trained to see that environmental harm was not normal but the result of societal constructs and public policy, and thereby become motivated to "agitate for change."[26] In this way, Richards recognized what would later be a core EJ principle: the understanding of the environment as a social practice that can be "engaged to resist the destruction of particular human/environmental relationships."[27] The CCSCLA case study also highlights alignments between Richards and EJ, as opposed to traditional environmentalism. According to CCSCLA organizers, when groups like the Sierra Club were contacted about the incinerator they labelled toxins in the urban environment as a community health issue, not an environmental one, and declined to help.

CONCLUSION

The work of Ellen Swallow Richards is not directly a precedent for the rise of EJ movements a century later, but significant overlaps exist in the understanding that the most important environment to protect is the one humans live directly in. Richards' nested system of environment, which foregrounds relationship to family and community before the larger world and its resources, is similar to EJ activists' focus on the environment of the immediate (human modified) community environment, rather on distant, pristine environments of traditional environmentalist concern. Both Richards and EJ activists understood the intimate connections between environmental health and human health and advocated for direct action by informed citizens. Significant differences occur, though, in framing the problem. While Richards supported centralized planning and cooperation among neighbors as solutions, she did not critically assess how racist and anti-poverty sentiment might be embedded in the very solutions she proposed. EJ activists a century later clearly saw the need for protection from the very planning boards that Richards called for, and linked attitudes about race and class to the inequitable siting decisions about noxious facilities.

In 1912, Richards admonished that "The Federal Department of Labor has studied workingmen's houses, but *living in the house* has not been worked up. The housewife has no station to which she may carry her trials, like the experiment stations that have been provided for the farmer."[28] As the fields of architecture and allied professions renew their interest in the links between the built environment and human health and wellbeing, Richards' critique, and the work of EJ advocates, points towards important considerations for designers. Primary among them is the notion of inclusion of the public, of non-experts within the community, not only as advisors but as co-creators. Both Richards' writings and the work of EJ activists describe the power of individuals to make substantive change in their environments, a possibility that is rarely engaged with by design professionals. Richards' description of an experiment station for the housewife suggests a built environment in which community members

actively engage with testing and prototyping, and with contributing to the knowledge base of how the built environment functions at multiple levels. This knowledge base would include the design of structures, but also their maintenance; their relationship to infrastructure and services; to social aspects such as family life and culture; and to understandings of race and class issues that result not from academic study but from generational experience. A designed environment informed by lived life, not only the formal and technological considerations of the academy and professions, could take radically different forms than the urbanism that has been developed and critiqued over the past century, and has the potential to reveal new approaches to longstanding issues. ▪

ENDNOTES

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4. Robert D. Bullard, Glenn S. Johnson, and Angel O. Torres. *Environmental Health and Racial Equity in the United States: Building Environmentally Just, Sustainable, and Livable Communities* (American Public Health Association, 2011), 82.

5. Gordon Walker, *Environmental Justice: Concepts, Evidence and Politics* (New York, NY: Routledge, 2012), 20-21.

6. See Carl Anthony's description of the roots of the EJ movement as connected to a number of earlier movements in the 17th and 18th centuries in "Regional Equity Goes National" *in Race, Poverty & the Environment, 15:2* (Fall 2008), 33-38.

7. Robert Dyball and Liesel Carlsson. "Ellen Swallow Richards: Mother of Human Ecology?," *Human Ecology Review* 23:2 (December 2017),17-29, 22.

8. Ellen H. Richards, *Sanitation in Daily Life* (Boston, MA: Whitcomb & Barrows, 1907), v.

9. Paul Mohai, David Pellow, and J. Timmons Roberts. "Environmental Justice," *Annual Review of Environment and Resources* 34:1 (November 21, 2009): 405-30, 407.

10. Muir encountered Yosemite as a wilderness empty of people in part because its indigenous inhabitants had been driven from the land in 1851 by the Mariposa Battalion, prior to his arrival.

11. Samuel Hall Young, *Alaska Days with John Muir* (Salt Lake City: Peregrine Smith Books, 1915).

12. Pamela Curtis Swallow, *The Remarkable Life of Ellen Swallow Richards: Pioneer in Science and Technology* (Hoboken, NJ: Wiley-TMS, 2014), 23.

13. Curtis, 95.

14. See P. Mohai, et al, "Environmental Justice" for a review of economic, social, political, and racial explanations for the existence of environmental injustices.

15. Ellen H. Richards, *Euthenics, the Science of Controllable Environment* (Boston, MA: Whitcomb & Barrows, 1912), 44.

16. Richards, *Euthenics*, 50.

17. See for example W.E. Pritchett, *The "Public Menace" of Blight: Urban Renewal and the Private Uses of Eminent Domain* (2003).

18. Elizabeth A. Walsh, "Ellen Swallow Richards and the 'Science of Right Living': 19th Century Foundations for Practice Research Supporting Individual, Social and Ecological Resilience and Environmental Justice," *Journal of Urban Management*, 7:3 (December 2018): 131–40, 134.

19. Richards, *Euthenics*, 40.

20. Swallow, 95, parenthetical statements added.

21. See Dyball and Carlsson for a history of the evolution of the term oeklogie, including implications around race and gender. Richards' use of the term was supplanted by the (male-dominated) field of science in an 1893 article in the *British Journal of Medicine*, and led her to develop home economics as an alternative term.

22. Dyball and Carlsson, 25.

23. Richards, *Euthenics*, 147.

24. Richards, *Euthenics*, 151.

25. Di Chiro.

26. Dyball and Carlsson, 22.

27. Di Chiro.

28. Richards, *Euthenics*, 53.

VARIATIONS ON LANDSCAPE, ENVIRONMENT, AND HISTORY: LOLA ÁLVAREZ BRAVO'S *PAISAJES DE MEXICO* (1954)

PAULA V. KUPFER

Paula V. Kupfer is an art historian, writer, and editor specialized in the history of photography and modern art in Latin America, and a PhD candidate in the Department of the History of Art and Architecture at the University of Pittsburgh. She recently contributed to the publications *A World History of Women Photographers* (London: Thames & Hudson, 2022); *What They Saw: Historical Photobooks by Women 1843–1999* (New York: 10x10 Photobooks, 2021), winner of the 2021 Aperture–Paris Photography Catalogue of the Year Award and the 2022 Kraszna-Krausz Photography Book Award; and the exhibition catalogue *Gertrudes Altschul: Filigree* (Museum of Art of São Paulo, 2021). Her dissertation research addresses the intersections of photography, ecology, and enslavement in imperial Brazil in the work of photographer Marc Ferrez. This project has been supported by the German Academic Exchange Service (DAAD) and the Social Sciences Research Council (SSRC).

ABSTRACT

In the 1930s and onward, Mexican photographer Lola Álvarez Bravo (1903–93) began to experiment with photomontage. She produced complex, composite images with a multiplicity of meanings, some of which were enlarged and presented as immersive photomurals. Her photomontages from the 1940s and 1950s feature architecture and the built environment as central subject matter. This article examines one of the works from this period—Álvarez Bravo's expansive photomontage *Paisajes de México* (1954)—through an ecocritical lens, emphasizing its idiosyncratic representation of the history of architecture in Mexico via the depiction of buildings from multiple centuries alongside areas of lush vegetation interspersed with volcanic rock, glistening ocean, and snow-peaked mountains. Through detailed visual analysis, the article draws attention to the natural and cultural histories of the buildings and sites depicted in the work, and thereby to a more expansive conception of architectural history that focuses as much on landscape and site as on built structures. It frames *Paisajes de México* as a key work by a photographer who challenged and reasserted the possibilities of photography within a large-scale mural practice, and who knowingly proposed a paper-based rejoinder to the discourse of *integración plástica*. With this work, Álvarez Bravo expanded the idea of a national history of architecture as one that ought to embrace environmental histories in addition to those of the built environment.

When Mexican artist Lola Álvarez Bravo (1903–93) began to develop photomontages that featured architecture and modern Mexico City as their central subject matter, in the 1940s, she produced frenetic urban scenes that convey a sense of rapid growth, chaos, and dynamism.[1] This is the case with *La capital de la República Mexicana* (The capital of the Mexican Republic, 1946) and *Anarquía arquitectónica en la ciudad de México* (Architectural anarchy in Mexico City, 1954) (Figure 1), both vertical compositions in which modern buildings appear jostled against one another at askew angles. The photomontage *Paisajes de México* (Landscapes of Mexico, 1954) (Figure 2), while also replete with buildings significant for Mexican architectural history, conveys a different tone. This panoramic composition—measuring 12.6 x 42.1 inches (32 x 107 cm)[2]—is organized along X-shaped axes, along which black-and-white photographs of buildings from a wide temporal span of Mexican history stand in contrast with areas of lush vegetation shaded in green, interspersed with volcanic rock, glistening ocean, and snow-peaked mountains.

This article considers *Paisajes de México* as a mature work within Álvarez Bravo's photomontage practice, one that moves beyond the more chaotic and purely urban representation of architectural history and proposes a temporally expansive and environmentally aware presentation of the modernity that she negotiated in her work at large. I argue that the broad view that Álvarez Bravo offers in this photomontage is not limited to visual accounts of human-made structures, but also embraces environmental histories. Using photomontage, a visual genre historically deployed for articulations of political protest and agency, *Paisajes de México* offers an idiosyncratic visual narrative of the history of architecture in Mexico that includes not only buildings from multiple centuries but also represents botanical and geologic landscapes.[3] In this work, Álvarez Bravo negotiates a complex framework of references, refutes readings of primitivism, and ultimately points to the search, within Mexican architecture, for roots in its own history. I argue that through this broad and diverse engagement with Mexico's botanical, geologic, and architectural milieus, *Paisajes de México* drives forward an important ecocritical argument.[4]

Figure 1: Lola Álvarez Bravo, *Anarquía arquitectónica en la ciudad de México* (Architectural anarchy in Mexico City), 1954. © Center for Creative Photography, The University of Arizona Foundation

Álvarez Bravo's inclusion of abundant natural elements, in addition to human-built structures, underscores a history of architecture with an emphasis on site and embedded *environmental* histories—that is, the history of human beings' relation to their natural environment and their efforts to survive and thrive in it—as opposed to versions of architectural history with a more anthropocentric or form-driven framework. Through a combination of cutout photographs in this work, Álvarez Bravo challenges the primacy of architecture over natural environment, while simultaneously disrupting traditional uses of the medium of photography. Moreover, I propose

that this photomontage allows an expansive way to consider the ideological possibilities of "paper architecture" and the role of architecture as visual media. While some of the existing scholarship on Álvarez Bravo's oeuvre emphasizes her relationship to architecture, few apply a sustained focus to the *site* of said architecture, or to the attention that the artist paid to the natural environment. An ecocritical art history reading of *Paisajes* makes possible a more expansive appreciation of Álvarez Bravo's photography that builds on prior studies of her work.[5]

AN ARTISTIC EDUCATION IN MURALISM

Álvarez Bravo's artistic formation took place in the late 1920s and early 1930s, following a key period when José Vasconcelos was secretary of public education in Mexico (1921–24) and famously recruited Diego Rivera and other artists to paint murals depicting Mexican history and allegorical themes on the large walls of public buildings. Vasconcelos promoted education and literacy through the arts and foregrounded cultural production that celebrated the nation's indigenous roots.[6] Lola Álvarez Bravo's training as a photographer included photographing murals, such as those by Rivera, a skill that required a careful consideration of architectural space.[7] She also photographed easel artworks for reproduction, and her demonstrated skill led her to eventually direct the photographic workshop at the National Institute of Fine Arts. Álvarez Bravo was a keen observer who, according to Elizabeth Ferrer, when photographing artworks, would carefully study "how painters composed their subjects, how they used light to establish form, and, in murals, how narrative was developed."[8] Álvarez Bravo believed that this "artistic education" was fundamental to her achievement.[9]

Over the course of Álvarez Bravo's life—in particular, following her separation in 1934 from her husband, photographer Manuel Álvarez Bravo—she developed a broad photographic practice that included artistic photography alongside documentary and commercial photographic work and architectural commissions. Her engagement with photomontage began in the 1930s with politically charged works such as *El sueño de los pobres* (The dream of the poor, 1935) (Figure 3), a montage depicting a child in tattered clothing, lying on the ground, perilously close to giant, coin-spewing wheels threatening to crush him in his sleep. It was published in the government periodical *El maestro rural* (The rural teacher) in April 1935, and the following month exhibited in Guadalajara as part of *Carteles revolucionarios femeninos* (Revolutionary Posters by Women), organized by Álvarez Bravo's friend, roommate, and fellow artist María Izquierdo.[10] According to art historian and critic Olivier Debroise, Álvarez Bravo's early experiments with photomontage can be traced to the moral and intellectual climate of

Lázaro Cárdenas's presidential administration (1934–40), which sought to bring culture, including art education, to all sectors of the population, especially the lower classes.[11] By this time, Debroise writes, "propaganda posters by artists had been transformed into a powerful weapon, more efficient than newspapers or murals."[12] The administration's efforts included the publication of *El maestro rural*, a periodical for schoolteacher education in the countryside, to which Álvarez Bravo contributed actively in the 1930s, producing documentary photographs as well as photomontages. Among these, a striking composition from 1938 depicts a montage of modernist buildings arranged in a loose triangular shape, with children's heads and torsos emerging from the tops, their gazes directed outward, all set against a strong yellow background, demonstrating her attention to the intersection between architecture, society, and the needs of the vulnerable.[13]

As Álvarez Bravo continued to develop her photomontage practice into the 1940s and 1950s, her designs became more complex and increasingly focused on industry, infrastructure, and urban experience. According to James Oles, due to changing political and socioeconomic circumstances in Mexico, Lola Álvarez Bravo's photomontages during these decades were less politicized and more reflective of developmentalism, industrialization, and the values of the corporate groups that began to commission these from her.[14]

INTEGRATING ARCHITECTURE AND PHOTOGRAPHY

It was also during the decades of the 1940s and 1950s that Álvarez Bravo became more involved with the architectural field in Mexico City, where she lived throughout her life, photographing buildings for various architects and carrying out photomural commissions for important architectural projects.[15] She also participated in the editorial board of *Espacios: Revista integral de arquitectura y artes plásticas* (Spaces: Integral magazine of architecture and plastic arts), a Mexico City–based publication whose objectives included the combination of architecture and the visual arts into a single publication with an original design. Through these various projects, Álvarez Bravo was privy to contemporary discussions surrounding

modern Mexican architecture, especially in the capital.[16] These conversations involved the ongoing search for a balance between foreign influences and a more traditional, Mexican style, as well as engagement with the multiple manifestations of *integración plástica*, which sought the integration of the visual arts into architectural projects. The 1940s and 1950s in Mexico City were especially marked by this negotiation of the relationship between art and architecture, defined by art historian Jennifer Josten as "not simply the incorporation of art into architecture, but the fusing of sculpted or molded elements (which have the quality of plasticity) with architecture to produce long-lasting exterior designs."[17] Considering Álvarez Bravo's practice during these decades, of producing photomontages that would be installed as

wall-size photomurals, the photomontage *Paisajes de México* demands attention and recognition as a key work by a photographer who expanded and reasserted the possibilities of photography within a large-scale mural practice.[18] In so doing, she knowingly proposed a paper- and photography-based rejoinder to the discourse of *integración plástica*.

HISTORIES OF ARCHITECTURE AND THE NATURAL ENVIRONMENT

Among Álvarez Bravo's oeuvre, the photomontage *Paisajes de México* is a recent discovery.[19] It was identified and attributed to the artist as part of the process of cataloging and organizing the González Rendón private archive in Mexico City over the

course of two years, which culminated in the 2011 international exhibition and accompanying 2013 publication *Lola Álvarez Bravo: The Photography of an Era*.[20] Contributing to this volume, art historian Johanna Spanke refers to *Paisajes de México* as "an impressive panorama of her home country, from the mountain chains of the Sierra Madre and the ruins of Palenque up to the capital."[21] Indeed, the horizontal composition depicts architectural and engineering structures ranging from the pre-Columbian era to the mid-1950s, all from different sites in present-day Mexico. The buildings include the Torre Latinoamericana skyscraper in central Mexico City, depicted alongside a twelfth-century Toltec column from Tula, in the state of Hidalgo; the modernist houses of the Jardines del Pedregal complex in southern Mexico

City; the modern Secretariat of Communications and Public Works (SCOP) complex in Mexico City, no longer extant; the arched aqueducts and water tower from Naucalpan, a municipality northwest of the capital; in addition to archaeological sites at Mitla, in Oaxaca, and Palenque in Chiapas; two houses of worship, including a large colonial church.

In Álvarez Bravo's photomontage, these buildings all appear embedded in a landscape of natural features, including dense patches of forest, the volcanoes Iztaccíhuatl and Popocatépetl, jagged mountains, agricultural fields, snaking maguey cacti and leaves, volcanic bedrock, and a glistening body of water.[22] The forested areas are tinted green—an as-yet unexplained departure from Álvarez Bravo's other

Figure 3: Lola Álvarez Bravo, *El sueño de los pobres* (The dream of the poor), 1935. © Center for Creative Photography, The University of Arizona Foundation

photomurals, which are all black-and-white—and catch the eye as much as, or more than, the human-built structures in monochrome, thus drawing pronounced attention to the woodland. Within this complex landscape, we travel in space and time, in and out of ritual spaces, into and out of the tropical forest, and through urban environments. Through the juxtaposition of elements, the work compresses not only scale and differing perspective points but also past and present into a single image.

In representing the architectural past alongside the present, Álvarez Bravo participated in what architectural historian Kathryn O'Rourke has described as an ongoing engagement on the part of Mexican architects with their national history.[23] In its approach to different historical periods, up to the present, *Paisajes* also reflects turns in the historiography of Mexican architecture. While architects in the early decades of the twentieth century looked to the history of colonial buildings to ground their modern proposals, this approach shifted over time.[24] By midcentury, when early modernism was already the subject of historicism, pre-Columbian architecture and vernacular styles resurfaced as key references.[25] Around this time, architectural historian Max Cetto wrote:

> The glories and the miseries of our architectural heritage from the colonial period have been overshadowed in recent years by the growing interest in pre-Hispanic architecture. Since the revolutionary events at the beginning of the century, the era of Spanish rule has tended to recede in the consciousness of the people, and they have sought contact with their own early history. The Mexican painters of this generation have repeatedly taken the struggle of the Indian races against oppression by the conquerors, the church, and the landowners, as the subject of their frescos and thus they have deliberately made themselves the mouthpiece of a politically radical movement.[26]

Cetto thus posited that the celebration of the colonial period and its architecture was passé in postrevolutionary Mexico, and that it was the invocation of the pre-Columbian past and the indigenous struggles against European invaders that underscored the search for a politically positioned national identity—in architecture as well as in other media such as painting.[27] Through its inclusion of various structures from Mexico's indigenous past, *Paisajes* echoes the ways the postrevolutionary Mexican administrations, beginning in the 1920s, made Mexico's indigenous cultures and their visual production key elements of Mexico's new-fashioned national identity.[28] However, Álvarez Bravo also included references to colonial architecture—the aqueduct arches and tower, as well as a large church—thus reflecting in this photomontage aspects of the ongoing debates within Mexico's architectural history and its various influences. Moving beyond references to the past, she directly juxtaposed pre-Columbian and colonial architecture with the midcentury modern, exemplified by the Torre Latinoamericana (Mexico City, 1948–56; Augusto H. Álvarez, architect); the SCOP complex (Mexico City, completed 1954; Carlos Lazo, architect); and the modernist housing complex at El Pedregal (Mexico City, completed 1953; Luis Barragán, architect). By focusing on a long history and including signal structures from both the pre-Columbian and the colonial period in her negotiation of contemporary architecture, she engaged various historiographic vantage points, while directly reflecting the reawakened interest in the ancient brought about by recent archaeological discoveries at Palenque and Mitla.

In representing this history in the form of a photomontage, she chose a medium historically associated with political action and propaganda, as well as with the envisioning of architectural possibilities in the time before digital technologies moved these visualizations to the screen.[29] O'Rourke notes that "representation—on facades, in photographs, and in texts—was the chief means by which architects communicated their buildings' relationships to history and indigenous culture."[30] By working in and with the photographic medium to produce large-scale interior installations, Álvarez Bravo thus expanded on an already complex consideration of art and architecture in midcentury Mexico. In a short essay she wrote for the architecture magazine *Espacios* in 1954, the artist referred to the "fortunate" arrival of an additional form to the known *integración plástica* media of painting and sculpture: "the photomural."[31] With her large-scale photomontages, Álvarez Bravo thus deliberately sought to expand the possibilities of *integración plástica* so as to include photography, and to reflect not only an artistic program on the exterior of buildings but to think, as with other murals, of broader possibilities—including pictorial schemes for interiors and the foregrounding of natural environments within considerations of national history.

In addition to understanding Álvarez Bravo's *Paisajes* as a more expansive retelling of Mexican architectural history, I propose that it articulates a version of "paper architecture"—one that operates on a greater geographic scale, in a different medium, and focuses not on single structures or architectural projects but rather on a reconception of history as anchored in the built and the natural environment. Developed in the Soviet Union in the 1970s and 1980s, a period when the Soviet political regime privileged the construction of cost-effective, mass-produced industrial structures at the expense of more innovative designs, the concept of "paper architecture" refers to attempts by Soviet architects to revive and remember utopian construction projects from the

1920s.[32] Architects working against the grain during this time devised fantastical proposals in which pragmatism was the lowest priority. These designs were not intended to be built but were nonetheless entered into competitions and sent to architectural journals, underscoring the circulation of expansive and unusual ideas. Álvarez Bravo's *Paisajes*, similarly, proposes a more imaginative vision of the national and architectural history of Mexico, doing away with a linear, documentary approach and proposing instead a recounting of history through the relational juxtaposition of architectural and natural elements. (Given how little is known about the circumstances surrounding the creation or exhibition of this photomontage, the work remains, perhaps like some of the Soviet paper-architecture proposals, shrouded in an aura of speculation and possibility.)

Through its approach to architectural history via the arrangement of cutout photographs, Álvarez Bravo's presentation also reflects architectural theorist Beatriz Colomina's assertion that architecture became modern only through its association with visual media, in particular the camera and photography.[33] Historian Robert Elwall points out that the most common way of experiencing architectural photography is in reproduction, and that therefore, our experience of buildings is often shaped not only by the photographer but also by the "complex process of filtering involving the vision of the photographer and the design skills of the art editor."[34] Here, Álvarez Bravo carried out the all of the above roles: utopian, monteur, photographer, designer, and editor—in addition to visual historian and critic.

CONVERSATIONS ACROSS TIME AND SPACE

In this multi-role approach, Álvarez Bravo created intentional relational arrangements between the elements in *Paisajes*; these speak emphatically to connections between history, building, site, and geologic and environmental conditions. The juxtaposition of the Torre Latinoamericana skyscraper and the Toltec *atlante* column is one of the salient and central pairings in the work. Completed in 1956, the skyscraper was the tallest building to be built in Latin America and it would retain this distinction for the following twenty years. Its inclusion in the photomontage

underscores a key moment of twofold significance in the history of modern architecture: it was not only the tallest tower in the region, but also the first major skyscraper worldwide to be built successfully in an active earthquake zone. The Torre was possibly still under construction when Álvarez Bravo made this photomontage, thus adding a potential dimension of speculation: the image may have come from a depiction in promotional material, underscoring its place in a narrative of overcoming challenges posed by Mexico's geologic environment, and projecting such successes into the future.[35]

The skyscraper's juxtaposition with the twelfth-century *atlante*, in contrast, refers to the past, bridging pre-Columbian antiquity and modernity, construction technologies, and cultural significance. This type of anthropomorphized Toltec column, while nowhere near the elevation of the Torre, tended to attain more than four meters in height, casting an imposing figure and likely affecting an earthbound viewer in a manner not dissimilar to the effect of a skyscraper in the early and mid-twentieth century. Drawing on cultural historian James Clifford's terms, here "the modern and the primitive converse across the centuries," and it is not modernity that is being celebrated but rather reframed as one element in a much longer narrative of human construction and architecture.[36] This more expansive view also dispenses with common "cuts" made in the timeline of Mexican history, such as the delineation of the postrevolutionary, the postcolonial period, or even the post-Conquest periodization.

Further juxtapositions across time and space are articulated in other parts of this complex work. The glass house in the lower left is the Gómez house (completed 1952; Francisco Artigas, architect), part of architect Luis Barragán's Jardines del Pedregal housing complex (1945–53). The volcanic rock on which the house, and the development as a whole, was built is especially visible in these images, underscoring the terrain that gave the area and the project its name. Its inclusion underscores the explicit connection between the housing complex and site, which was central to the conception of the housing project. Indeed, architectural historian Keith Eggener draws a distinction between the significance of the volcanic
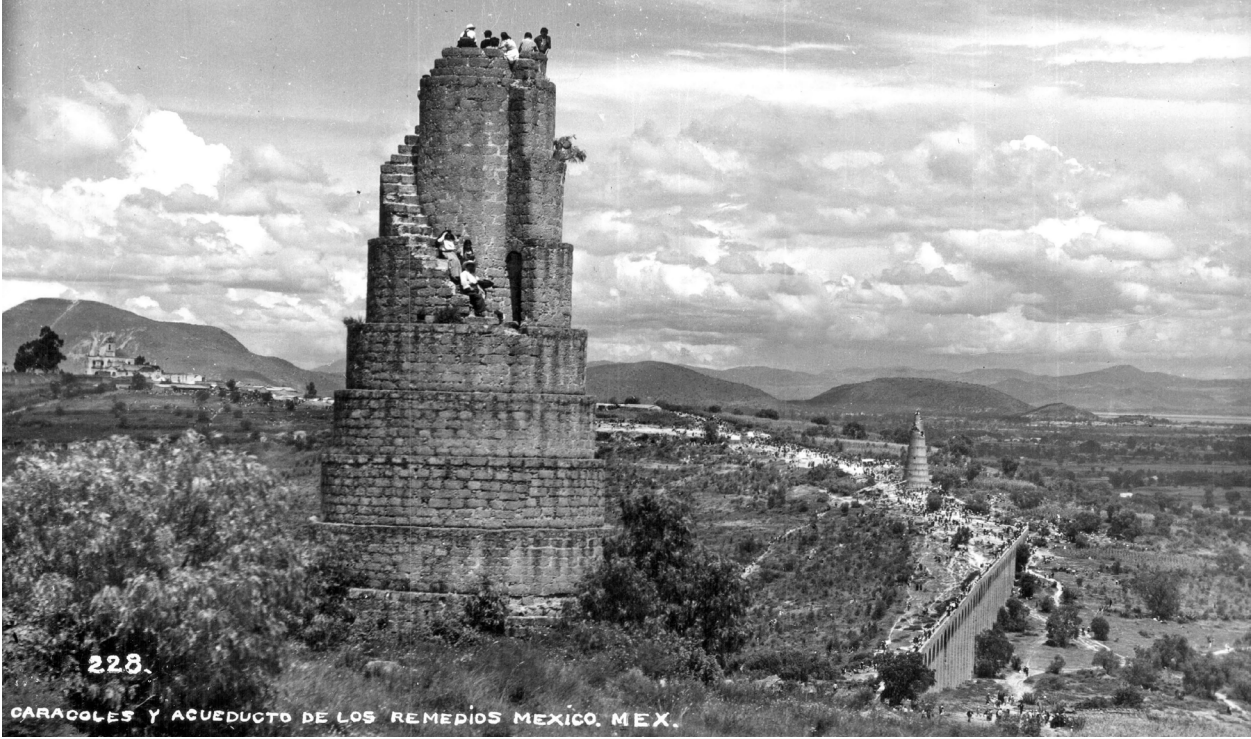

Figure 4: Photograph from the 1950s, Valley of Remedios, Naucalpan, Mexico. Photographer unknown, Colección Villasana-Torres

bedrock at the UNAM campus, built nearby, and at Jardines del Pedregal: at UNAM, the expansive architectural and mural program "intended to represent the Mexican nation as a whole," and the volcanic rock site was secondary to the meanings articulated through the architecture and its *integración plástica* arts program. Meanwhile, at Barragán's Jardines del Pedregal, the emphasis was on "a single, *specific* place—the Pedregal de San Ángel as a natural setting—as much [as] or more than what was built there."[37] (The UNAM campus, one of the most important examples of the integration of architecture and the arts, with a strong invocation of Mexico's history, is curiously absent from *Paisajes*.) Moreover, El Pedregal holds historical significance as the site of some of the earliest known human settlements in North America, and its volcanic landscape has great cultural and national importance for Mexicans.[38] Echoing the idealistic aspects of paper architecture, the representation of the Gómez house in the photomontage underscores the argument by Eggener that Barragán's vision was photographic, and that

photographs of Jardines del Pedregal were perhaps the only place where the project's utopia fully lived itself out.[39] Álvarez Bravo's inclusion of the building and the geologic site invokes both aspects, while conveying, via its photographic representation, the ideal version of this modernist glass structure, frozen in time.

The aqueducts and the Tower of Babel–like structure that appear in *Paisajes* also speak to the issue of photographic media, while addressing issues of cultural and temporal syncretism.[40] Both the row of arches and spiraling tower were cut from a photograph that Álvarez Bravo made of a painting by Juan O'Gorman, entitled *Recuerdo de los Remedios* (1943),[41] which depicts these two distinctive architectural elements from the Valley Remedios, in the municipality of Naucalpan, northwest of Mexico City.[42] In the painting, O'Gorman depicts and draws attention to Remedios, a place with a long history of religious miracles, pilgrimages, and a critical site of environmental engineering. Both the arches and the tower were part of a seventeenth-century aqueduct

system that was never used, partly because of the area's uneven terrain. However, as photographs from the 1950s reveal, they were popular destinations for domestic tourism, suggesting that Remedios became a place where Mexicans encountered aspects of their architectural culture and legacy (Figure 4).[43]

Through the depiction of various failed aqueduct constructions, beginning in the seventeenth century, O'Gorman's painting—and, through its inclusion in the photomontage, Álvarez Bravo's *Paisajes*, too—alludes to histories of unsuccessful water-management practices. The aqueduct towers, with their resemblance to Babel, insinuated what art historian Peter Krieger called a "confusion, not of language but of technology."[44] While the tower and the aqueducts have appeared in artworks and photographs over the years, including by Harvey E. Mole, Edward Weston, and various unnamed Mexican photographers, Álvarez Bravo specifically included the tower excised from a *photograph* of O'Gorman's *painting* (rather than a photograph of the arches and the tower directly). This choice suggests a desire to allude to the histories embedded in his painting, in particular; establishes connections to the work of another artist and architect; and deliberately flouts forms of hierarchy among representational and artistic media, such as those between painting and photography.

When O'Gorman unveiled the painting in the mid-1940s, it had an impact on the debates regarding a new water-supply system from the nearby Río Lerma, which had "dried out fertile fields in the surrounding suburban" landscape.[45] Through the inclusion of this representation of the towers and aqueduct arches, *Paisajes*, too, draws attention to the crisis. As a 1952 article in *Espacios* makes explicit, the water crisis was also on the minds of architects and urban planners around this time. The issue, which lists Álvarez Bravo among its collaborators, opens with a call for the establishment of a planning institute that will help remedy the "econo-ecological imbalance" in Mexico City. Its authors protest the "short-term" quality of solutions oriented toward such issues, indicating that "to address the problem via its consequences is to swim against the current.... We see the men of the capital become uselessly

despaired over the dust storms occasioned by the desiccation of the Texcoco Lake, which has caused an alarming rise in respiratory infections."[46] The need for more responsible environmental management was clear, as were the detrimental health consequences of continuing to mismanage it. While I cannot ascribe to Álvarez Bravo the guise of a mid-twentieth-century environmentalist or activist, connections within her oeuvre and the network of artists, architects, intellectuals, and politicians for whom she worked and with whom she was in dialogue indicate an awareness of environmental concerns related to some of the buildings and sites she specifically chose to represent in this photomontage.

Indeed, Álvarez Bravo's participation in the crafting and documentation of architectural history may be embedded in *Paisajes*, particularly in the inclusion of the Secretariat of Communications and Public Works (SCOP) complex, depicted to the right of the modern Gómez house. The complex was a brand-new modern architecture project, recognized for its strong program of *integración plástica,* including murals by O'Gorman and artist José Chavez Morado that referenced Mexico's indigenous history. Álvarez Bravo's work, too, was part of the art program of SCOP, as she produced five new photomurals for the complex: *Abriendo Caminos* (Opening up roads, 1955), *Ferrocarriles* (Railways, 1955), and three others that referred to infrastructure and bureaucracy: bridges, radio towers, computer punch cards, and a variety of white-collar workers.[47] Her photomurals for SCOP represented not only the infrastructure of the modern office, labor, and technology, but also the constant intervention in the natural environment that the construction of roads and railroad infrastructure—in other words, progress and modernity— required.[48]

The inclusion in *Paisajes de México* of the Maya Templo de las Inscripciones (Temple of Inscriptions) at Palenque suggests a different kind of material breakthrough, as important archaeological excavations and discoveries were taking place in Palenque at the time.[49] The representation of the temple in the photomontage resonates with the importance of the indigenous past in negotiations of Mexican history and identity—an aspect that was also emphatically reflected in the artistic program at SCOP. Given Lola

Álvarez Bravo's extensive professional work on behalf of government agencies during the 1940s and 1950s, it's not implausible that she would have photographed the temple at Palenque herself, thus serving personally as a witness to an important development in Mexico's negotiation of its ancient history.[50]

LANDSCAPE VS. ANARCHY

It is not known whether Álvarez Bravo developed *Paisajes* on her own initiative or in response to a commission. Due to its focus on architecture, however, the work is in dialogue with others of her photomontages, particularly *Anarquía arquitectónica en la ciudad de México* (Figure 1), mentioned earlier.[51] This work depicts a disorienting assemblage of modern buildings in Mexico City as if they were wildly sprouted mushrooms, growing every which way. Juxtaposed at tilted angles, skyscrapers jostle for space in a crowded vertical composition that feels all the more uncanny when considering Mexico City's earthquake-prone location. Cars appear parked along a curve toward the bottom of the frame,

underscoring urban-planning designs that relied on the automobile and newly built paved roads for access. Anchoring the composition, large outcroppings of volcanic rock allude to the substrate. With the sky ominously dark, dotted only with a handful of clouds, the work has been said to reflect a critical stance on the part of the artist toward the rapid development of Mexico City; photography historian Elizabeth Ferrer has described it as a "strangely prescient [vision] of modernity gone awry."[52] Research by Oles and Jácome confirms that the buildings jammed into this photomontage were new constructions, erected mostly in the 1940s and 1950s, following the elimination of a zoning restriction that previously limited the height of buildings to that of palm trees.[53] No palm trees are to be seen here, though, nor are there other salient signs of natural features. Indeed, in contrast to *Paisajes*, *Anarquía* represents a landscape in which most signs of nature have been cleared to make room for urban modernity. While showcasing new architectural propositions, which Jácome has referred to as "multiple creative directions," the photomontage also displays the outcome of rapid investment capital

and "the inefficiency of the authorities" in regulating the city growth."[54] Beyond potential social critiques of urban modernity embedded in *Anarquía*, this work underscores multiple temporalities: in placing this urban landscape on a bed of volcanic rock, the work suggests that while the buildings themselves can be precisely dated, the terrain on which they were built exists on a different time scale, invoking pre-urban time. This point connects *Paisajes* and *Anarquía*, as the volcanic ground situates the dateable architectural structures in relation to an ancient terrain.

That said, *Paisajes* goes further in its negotiation of time and multiple environments. Whereas *Anarquía* displays buildings jostled together, crowding the frame, in *Paisajes* the architecture is set among natural landscapes that feel larger and more encompassing than the human-made structures in their midst. The variety of constructions in *Paisajes* spans centuries rather than decades, and its composition on two crossed diagonal axes beckons the eye with a journey through geographical space, geological terrain, and architectural time. With its more expansive temporal framing, *Paisajes* engages more capaciously with the history of architecture, time, and the mutability of dense urban spaces. *Paisajes* is Álvarez Bravo's only photomontage featuring architecture that is located prominently outside an urban setting; as such, it suggests a recalibration of the super-urban vision of *Anarquía*, juxtaposing scale, differing perspective points, and temporalities.[55]

BOTANICAL HISTORIES

A few years before Álvarez Bravo made *Paisajes de México*, she produced a photomontage featuring plants—*Vegetaciones* (Vegetations, 1949–50) (Figure 5)—that would be installed in the Reforma theater in Mexico City in 1950.[56] It is an alluring, tightly woven montage of leaves, with a picture of a painted jaguar hidden in one of the panels. Spanke has proposed that this representation of foliage was a way of refuting readings of Mexican nature as "other."[57] I suggest that *Vegetaciones* may have been a moment of earlier engagement with the possibilities of approaching history through botany in a photographic medium, and that this vision came to greater and more

sophisticated fruition in *Paisajes*. And that it is in the latter work—*Paisajes*—that Álvarez Bravo sought to make an emphatic statement about Mexico's history and its cultural identity through the suggestion of the deep-rootedness of the built environment in its natural context. I venture that here she went against the grain of some of her more development-oriented photomontages and ushered in a complex vision of the Mexican historical and architectural landscape that straight photography would not have made possible.

Ultimately, *Paisajes de México* allows an appreciation of Lola Álvarez Bravo's vision of Mexican history and architecture that not only linked art with the built environment, in keeping with some of the ideas shaping the discourse of *integración plástica*, but factored in the environmental histories of some of the places where these integrated buildings and histories came to be. She accomplished this through her skillful use of photomontage, which allowed her to emphasize new connections through juxtaposition, and by defamiliarizing relationships between elements across time. The complex work underscores the artist's creative drive and her sophisticated understanding of architecture, as well as the desire to subvert a single-point perspective of history through the skilled blending of photographic fragments. By representing past and present in *Paisajes*, Álvarez Bravo emphasizes the *longue durée* of a Mexican history of architecture and therefore also of a history of Mexico, an aspect that would have come forward forcefully in a public, large-scale installation of this photomontage. In collapsing historical periods and geographical locations into a single work, the photographer subverts any calls for primitivizing hierarchy and proposes instead a new way to understand history: not as a dichotomy, but rather complementary, nuanced circumstances. As one of her few photomontages without people, *Paisajes de México* drives attention away from the human figure and human agency, emphasizing instead the relationship between architecture and environment, between a longer framework of history and the present day, and the built and the natural environment. By establishing a dialogue across time, this work reverberates in the present day, prompting a reflection of the ways modernist values and the constructions that ensue from them fare with the passing of time. ▪

ENDNOTES

1. I would like to thank Dr. Paulina Pardo, Dr. Jennifer Josten, and the anonymous reviewer for their helpful feedback and comments on drafts of this article, as well as the Photography Network for supporting this publication with a 2022 Project Grant.

2. These measurements are based on a modern-day reproduction of the work made by the Rendón Collection.

3. In Mexico, in addition to Álvarez Bravo, the Spanish emigré artist Josep Renau is an important reference for complex photomontages that negotiated industrial aspects of modernity and were in dialogue with experimental painted mural practices, such as those by David Alfaro Siqueiros. See Jennifer Jolly, "Art of the Collective: David Alfaro Siqueiros, Josep Renau and Their Collaboration at the Mexican Electricians' Syndicate," *Oxford Art Journal* 31, no. 1 (2008): 131–51.

4. Art historian Alan Braddock defines ecocritical art history as an approach that directs attention to issues of "environmental interconnectedness, sustainability, and justice in cultural interpretation," and as a critical disciplinary perspective that can "bring attention to neglected evidence of past ecological and protoecological sensibility." Alan C. Braddock, "Ecocritical Art History," *American Art* 23, no. 2 (2009): 26.

5. Studies of Álvarez Bravo's work have generally emphasized her abilities as a photojournalist, photographer of murals, portraitist, and teacher. See *Lola Álvarez Bravo: Fotografías selectas, 1934–1985* (Mexico City: Fundación Cultural Televisa: Centro Cultural / Arte Contemporáneo, 1992); Elizabeth Ferrer, *Lola Álvarez Bravo* (New York: Aperture, 2006); Olivier Debroise, *Elogio de la fotografía, Lola Álvarez Bravo: Centro Cultural Tijuana, 30 de enero al 15 de febrero de 1985* (Mexico City: Programa Cultural de las Fronteras / SEP Cultura, 1985); Debroise, *Lola Álvarez Bravo, Reencuentros: 150 años de la fotografía México* (Mexico City: Consejo Nacional para la Cultura y las Artes, Instituto Nacional de Bellas Artes, Museo Estudio Diego Rivera, 1989); Debroise and Oles, *Lola Álvarez Bravo: In Her Own Light* (Tucson: Center for Creative Photography, University of Arizona, 1994).

Álvarez Bravo's photomontages and photomurals have been a more central subject of discussion in recent scholarship, including Cristóbal Andrés Jácome, "Dialogues with Architecture" and "Model Kit Architecture," in *Lola Álvarez Bravo and the Photography of an Era*, ed. James Oles, Adriana Zavala, and Rachel Arauz (Barcelona: RM, 2012), 130–31, 140–42; Johanna Spanke, "The Photomontages of Lola Álvarez Bravo," in Oles, Zavala, and Arauz, *Lola Álvarez Bravo and the Photography of an Era*, 138–39; Oles, "Mexico's Forgotten Muralist," in *In a Cloud, in a Wall, in a Chair: Six Modernists in Mexico at Midcentury*, ed. Zoe Ryan (New Haven, Conn., and Chicago: Yale University Press and Art Institute of Chicago, 2019), 129–40; and Johanna Spanke, "A Mexican Perspective on Modernity: Lola Álvarez Bravo's Photomurals," in *In a Cloud, in a Wall, in a Chair*, 119–28.

The recent exhibition *La otra Lola: documentación, persuasión y experimentación fotográfica 1930–1955*, curated by Deborah Dorotinsky and on view at the Museo Carrillo Gil in Mexico City from April 30, 2022, to September 11, 2022, highlights the breadth of Álvarez Bravo's practice and includes commercial commissions, documentary work, and personal photographs.

6. See Oles, *Art and Architecture in Mexico*, esp. chap. 7, "From Revolution to Renaissance."

7. Debroise and Oles, *Lola Álvarez Bravo: In Her Own Light*, 21.

8. Ferrer, *Lola Álvarez Bravo*, 19.

9. Ferrer, *Lola Álvarez Bravo*, 19.

10. Karen Cordero Reiman, "A Situated Gaze: Lola Álvarez Bravo," in *Lola Álvarez Bravo: Picturing Mexico*, ed. Stephanie Weissberg (St. Louis: Pulitzer Arts Foundation, 2018), 35.

11. Debroise and Oles, *Lola Álvarez Bravo: In Her Own Light*, 25.

12. Debroise and Oles, *Lola Álvarez Bravo: In Her Own Light*, 25.

13. *El maestro rural* 9, no. 4 (September 1938), collection of the Archivo de Concentración e Histórico; reproduced in Oles, Zavala, and Arauz, *Lola Álvarez Bravo and the Photography of an Era*, 114–15.

14. James Oles, "Mexico's Forgotten Muralist: The Fragmented History of Lola Álvarez Bravo's Photomurals of the 1950s" (presentation, University of Pittsburgh, March 19, 2019).

15. These projects included a 1954 photomural for the new building of Fábricas Auto-Mex in Mexico City (Lorenzo Carrasco and Guillermo Rossell, architects), as well as five photomurals for the Secretariat of Communications and Public Works (SCOP) in 1955 (Carlos Lazo, architect). One of Álvarez Bravo's best-known architectural photography commissions was of Felix Candela's modernist Church of our Lady of Miraculous Medal, completed in 1955.

As a female photographer engaging with the documentation of architecture, Álvarez Bravo is considered part of a cohort of women, both local and foreign, who photographed and wrote criticism of works of art and architecture in Mexico at midcentury. These include Mexico-based photographers Esther Born (1902–87, US), Marianne Goeritz (1910–58, Germany), and Kati Horna (Hungary,1912–Mexico, 2000), all of whom photographed architecture in Mexico. Meanwhile, Mexican-American Anita Brenner (1905–1974) and US-American Esther McCoy (1904–1989, US) wrote architectural criticism.

16. These include José Villagrán García (1901–1982, Mexico), Juan O'Gorman (1905–1982, Mexico), and Luis Barragán (1902–1988, Mexico), and painters David Alfaro Siqueiros (1896–1974, Mexico), José Chávez Morado (1909–2002, Mexico), and Raúl Anguiano (1915–2006, Mexico).

17. Jennifer Josten, *Mathias Goeritz: Modernist Art and Architecture in Cold War Mexico* (New Haven, Conn.: Yale University Press, 2018), 10. For more on *integración plástica*, see Leticia Torres, "La integración plástica: Confluencias y divergencias en los discursos del arte en México," *ICAA Documents Project Working Papers*, no. 2 (May 2008): 10–15.

18. It is not known whether *Paisajes de México* was ever enlarged or presented as a photomural, although James Oles notes that it is "mural-like" in scale. See James Oles, "Mexico's Forgotten Muralist: Lola Álvarez Bravo and Photomurals in the 1950s," in *In a Cloud, in a Wall, in a Chair*, 137. It is not implausible that it was a study for a photomural, given that comparable works, such as *Anarquía arquitectónica de la ciudad de México*, were presented at large scale.

19. The most commonly reproduced version of this photomontage first appeared in Oles, Zavala, and Arauz, *Lola Álvarez Bravo: The Photography of an Era*; however, a two-part black-and-white print of the work turned up at an auction house in Mexico ca. 2019. In the photograph, the work appears in two prints, and reversed: the Temple of Inscriptions is all the way on the right with the skyscraper on this side of the central divide, whereas the colonial church is distinctly on the left, with the Toltec column also left of the central dividing line. Email correspondence with James Oles, April 2019.

20. In *Lola Álvarez Bravo and the Photography of an Era*, the work *Paisajes de México* is referred to as *Paisajes de México I and II* because it is composed of two halves, left and right. The exhibition took place at the Museo Casa Estudio Diego Rivera y Frida Kahlo, Mexico City, in October 2011, and was then shown at Museum of Latin American Art (MOLAA) in Long Beach, California (2012–13), before

it traveled to the Center for Creative Photography of the University of Arizona, Tucson, in March 2013.The photomontage was also exhibited at the Art Institute of Chicago in 2019, as part of *In a Cloud, in a Wall, in a Chair: Six Modernists in Mexico at Midcentury* (September 6, 2019–January 12, 2020); there and in the accompanying catalog, it is referred to only as *Paisajes de México*.

21. Spanke, "The Photomontages of Lola Álvarez Bravo," 138–39.

22. Some of the natural elements in this photomontage closely correspond to photographs that Lola Álvarez Bravo made in Acapulco to accompany text by Francisco Tario in the book *Acapulco en el sueño* (Mexico City: Nuevo Mundo, 1951).

23. Kathryn E. O'Rourke, *Modern Architecture in Mexico City: History, Representation, and the Shaping of a Capital* (Pittsburgh: University of Pittsburgh Press, 2017), 3.

24. O'Rourke, *Modern Architecture in Mexico City*, 7.

25. O'Rourke, *Modern Architecture in Mexico City*, 7.

26. Max L. Cetto, *Modern Architecture in Mexico: Arquitectura moderna en* México (New York: Praeger, 1961), 23. For additional references on the historiography of Mexican architecture, see Valerie Fraser, *Building the New World: Studies in the Modern Architecture of Latin America, 1930–1960* (London: Verso, 2000); Edward R. Burian, ed., *Modernity and the Architecture of Mexico* (Austin: University of Texas Press, 1997); Luis E. Carranza, *Architecture as Revolution: Episodes in the History of Modern Mexico* (Austin: University of Texas Press, 2010).

27. This attention is also reflected in the magazine *Mexican Folkways* and is a recurring motif in Edward Weston's photographs from Mexico. See Amy Conger, *Edward Weston in Mexico 1923–1926* (Albuquerque: University of New Mexico Press, 1983).

28. The narrative of a "cosmic race," articulated by Minister of Culture José Vasconcelos as a utopian conception of cultural and racial syncretism and the mythologized indigenous past, often glossed over the contemporary political and economic decisions that excluded indigenous groups from the nation's economic progress. See Edward R. Burian, "Modernity and Nationalism: Juan O'Gorman and Post-Revolutionary Architecture in Mexico, 1920–1960," in *Cruelty & Utopia: Cities and Landscapes of Latin America*, ed. Jean François Lejeune (New York: Princeton Architectural Press, 2005), 213.

29. A well-known case of photomontage being used for this purpose is Mies van der Rohe's Friedrichstrasse projects, a series of photomontages of a planned but never-built modern building complex in Berlin, from 1921. Historian Ana María León describes a similar case of never-built popular housing-project designs by Catalan architect Antonio Bonet in Buenos Aires in the 1950s. See Ana María León, *Modernity for the Masses* (Austin: University of Texas Press, 2021). For more on the history of photomontage, see Dawn Ades, *Photomontage* (New York: Pantheon, 1976). Regarding photomurals, especially prevalent at the 1937 World's Fair in Paris, see Romy Golan, *Muralnomad: The Paradox of Wall Painting, Europe 1927–1957* (New Haven, Conn.: Yale University Press, 2009), esp. chap. 4, "Photomurals Real and Painted."

30. O'Rourke, *Modern Architecture in Mexico City*, 11.

31. Lola Álvarez Bravo, "La fotografía como medio expresivo decorativo en la arquitectura moderna," *Espacios* 18 (February 1954). See Oles, "Mexico's Forgotten Muralist," 130.

32. See Yuri Avvakumov, *Paper Architecture: An Anthology* (Moscow: Artguide, 2021).

33. Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge, Mass.: MIT Press, 2001). Edward R. Burian refers to Colomina's analysis of the windows operating like a camera shutter for "capturing and categorizing the landscape." See Edward R. Burian, "The Architecture of Juan O'Gorman: Dichotomy and Drift," in idem, *Modernity and the Architecture of Mexico*, 139; idem, "Modernity and Nationalism," 210–22.

34. Robert Elwall, *Building with Light: The International History of Architectural Photography* (London: Merrell, 2004), 8.

35. In contrast, in the photomontage *Anarquía arquitectónica*, the Torre Latinoamericana is depicted as still under construction. Jácome, "Model Kit Architecture," 141.

36. James Clifford, "Histories of the Tribal and the Modern," in idem, *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Cambridge, Mass.: Harvard University Press, 2002), 190.

37. Keith L. Eggener, *Luis Barragán's Gardens of El Pedregal* (New York: Princeton Architectural Press, 2001), 106.

38. Eggener, *Luis Barragán's Gardens of El Pedregal*, 106.

39. Eggener writes that "as a work of art, El Pedregal was suggestive rather than direct, its forms operating as triggers of memory, catalysts of nostalgia, emotion, and transient mental images. It was for El Pedregal that Barragán first articulated the verbal rhetoric of mystery and magic, silence and serenity, sensuality and spirituality, that has been used to characterize his work ever since." Eggener, *Luis Barragán's Gardens of El Pedregal*, 2.

40. UNESCO describes similar aqueducts, found at the border between the states of México and Hidalgo in the Mexican Central Plateau, as an example of the exchange of influences between the European tradition of Roman hydraulics and traditional Mesoamerican construction techniques, including the use of adobe. See "Aqueduct of Padre Tembleque Hydraulic System," UNESCO World Heritage Centre, accessed July 18, 2022, https://whc.unesco.org/en/list/1463.

41. O'Gorman's painting is in the permanent collection of the Museo Nacional de Arte, México. The work can be viewed here: http://66.111.6.112/objects/1944/recuerdo-de-los-remedios.

42. The contact print of the photograph is part of the Lola Álvarez Bravo Archive, 1901–94, AG 154, Box 64, Center for Creative Photography, University of Arizona.

43. Carlos Villasana and Ruth Gómez, "Las torres de Babel de Naucalpan," El Universal, July 18, 2018, https://www.eluniversal.com.mx/colaboracion/mochilazo-en-el-tiempo/nacion/sociedad/las-torres-de-babel-de-naucalpan. I thank Marisol Villela for pointing me to historical sources related to Naucalpan.

44. Peter Krieger, "Juan O'Gorman: Souvenir of Los Remedios, 1943," in *Picturing the Americas: Landscape Painting from Tierra del Fuego to the Arctic*, ed. Valéria Piccoli, Peter John Brownlee, and Georgiana Uhlyarik (New Haven, Conn.: Yale University Press, 2015), 219.

45. Krieger, "Juan O'Gorman: Souvenir of Los Remedios, 1943," 219.

46. Guillermo Rossell and Lorenzo Carrasco, "El desequilibrio econoecológico de la ciudad de Mexico," *Espacios* 10 (August 1952): 15.

47. Oles, "Mexico's Forgotten Muralist," 136–37.

48. In contrast to both the Templo de Inscripciones at Palenque and the Torre Latinoamericana, neither the SCOP complex nor Álvarez Bravo's SCOP

photomurals remain extant. The SCOP complex was gravely damaged during the 8.0 magnitude earthquake that struck Mexico City on September 19, 1985.

49. Between 1949 and 1952, archaeologist Alberto Ruz Lhuillier supervised the excavation as part of an effort led by the Instituto Nacional de Antropología e Historia (INAH) and discovered the tomb of K'inich Janaab' Pakal I, the classic Maya king of Palenque, Mexico. Elaine Schele, "Profile of Alberto Ruz Lhuillier as a Young Man," *Bulletin of the History of Archaeology* 22, no. 2 (August 21, 2012): 4–11, https://doi.org/10.5334/bha.22202.

50. During the 1940s and 1950s, Lola Álvarez Bravo worked on several "official projects for government ministries, photographing the president's tours and documenting literacy campaigns and the construction of new dams, highways, and school buildings." Oles, "Mexico's Forgotten Muralist," 133.

51. *Anarquía* in the form of a photomural was featured in the 1955 film *La rival* (directed by Chano Ureta), as the backdrop of the office of the main character—an architect. It was also published on the cover of the magazine *Arquitectura/México*, suggesting its relevance to current conversations surrounding architecture. See Jácome, "Dialogues with Architecture," 130.

52. Ferrer, *Lola Álvarez Bravo*, 54.

53. Oles, "Mexico's Forgotten Muralist," 137–38.

54. Jácome, "Model Kit Architecture," 141.

55. Ferrer, *Lola Álvarez Bravo*, 54.

56. Spanke, "A Mexican Perspective on Modernity," 123.

57. Spanke, "A Mexican Perspective on Modernity," 126–27.

ARCHITECTURAL THEORY, MULTITUDE, AND THE ANTHROPOCENE

CAMERON McEWAN

Cameron McEwan is associate professor in architecture at Northumbria University School of Architecture and Trustee of the AE Foundation, an independent institute for architecture and education. Cameron's research focuses on the status of architecture as a critical project and appears in publications including *Architecture and Culture, arq, Drawing On, Journal of Architectural Education, Lo Squaderno, MONU, Scroope: Cambridge Architecture Journal, Outsiders* at the 2014 Venice Architecture Biennale, and elsewhere. Cameron is co-editor of *Accounts* (Pelinu, 2019) and the special issue of *Architecture and Culture* on Architecture and Collective Life (Taylor & Francis, 2020). His book *Analogical City* (Punctum, 2022) is forthcoming.

ABSTRACT

The aim of this article is to examine how to develop an architectural theory for the Anthropocene. If a lesson of the climate crisis is that there are less partitions between individual and collective life; more continuities across scale, nature, and culture; then there is a need to create approaches and frameworks that link different fields, figures, ideas, and methods. This article is organized as a sequence of close readings of McKenzie Wark, Paolo Virno, Aldo Rossi, and Diana Agrest. These authors are from different generations and disciplines, and from whom I mobilize concepts and practices, to read them together. One task for an architectural theory for the Anthropocene is to reflect on the critical tradition and appropriate the key terms and methods with which new texts, theories, and knowledge practices may be articulated. It may lead to new narratives, techniques, and collective imaginaries. The individuals discussed here are not normally put together. Yet they show compelling possibilities for contact. They show how concepts can be reworked into tools, tools may become design methodologies and thinking processes, which in turn suggest alternative actions, forms of thought, and forms of city that support collective life in the Anthropocene.

INTRODUCTION

We are amid a monumental climate crisis. The interaction between humans and the earth is out of joint.[1] Soils deplete, seas dry up, species are lost, climate changes; the planet is on fire. The climate crisis is a principal context to which architectural thought and practice ought to be directed.[2] It is an issue of power and the inequalities under capitalism. The climate crisis registers on multiple perspectives and scales, habits and forms of inhabitation, individual agency and collective life.

Architecture is burdened by its complicity in the expenditure of energy, labor, and resource extraction, and not least by its engagement in the forces of urbanization. Mass urbanization, human displacement, and the exploitation of nature by capitalist development blunt the perception of what architects and architecture can do in the context of climate crisis. At the building scale, architecture has responded primarily by attempts to increase energy efficiency through applied technology systems and building integrated management. Yet it is not adequate to leave ideas and approaches concerning the environment to industries such as geoengineering. Their focus on technical solutions is necessary, but nevertheless reduces questions on the climate to management, and fails to address intellectual perspectives and worldly imaginaries— the social and historical production of forms and ideas through which a concept of the world may be articulated and enacted. It is necessary to explore how architectural theory may confront the challenges of climate crisis, learn from the debates on the Anthropocene, and interpret the present order to change it.

In recent decades, architectural theory has offered some thoughtful contributions to the discourse around the Anthropocene. In a special issue of the *Journal of Architecture* on "Architectural History in the Anthropocene," Daniel Barber has reflected as follows: "The opportunity here is to engage a new perspective by which the world system of capital and the Earth system understood by the natural sciences can be seen according to their mutual intractable entanglements."[3] Barber argues that

new questions have opened about the "knowledge embedded in architectural ideas, relative to material metabolisms, to relationships between buildings and the polluted atmosphere, and to principles of urban growth."[4] Others pursue theoretical and critical practice to invent visceral images that articulate architecture's "planetary imagination" and to critique architecture as "carbon form."[5] These are stimulating contributions, and this article is in dialogue with them. What requires further development are the concepts and methods needed to articulate how different bodies of thought and practice make contact with each other.

One of the aims of this article is to examine how architectural thought can be placed into closer dialogue with Anthropocenic thought. It may be a broader collective task, but there is a need to create approaches and frameworks that link different fields, figures, ideas, and methods. Here I focus on some of the concepts and methods put forward by political philosopher and activist Paolo Virno and media theorist and educator McKenzie Wark. I interpret their thought in relation to architects and theorists Aldo Rossi and Diana Agrest towards an architectural theory for the Anthropocene.

READING MCKENZIE WARK AND PAOLO VIRNO WITH ALDO ROSSI AND DIANA AGREST

The Anthropocene is the present geological era where natural forces are in conflict with human forces. The Anthropocene is the age of one planet and all humans. To paraphrase Virno from *A Grammar of the Multitude*: the collective "we, the multitude," has never been more powerful for collective action. It names a potential solidarity of the many, of the shared resources, of the multitude of humans and species. In *Sensoria*, Wark argues: "The Anthropocene names a world transformed by collective human labor under the power of the commodity form. That world appears increasingly hostile to the endurance not just of our species-being but of many others as well."[7]

In this article I mobilize concepts developed by Wark and Virno transposed to architecture. Although Wark and Virno are not normally put together, they share aspects of thought. They both interpret the centrality of language as a practice, a concept, and the raw material that defines contemporary subjectivity and the entanglements of social relations with nature. They share a commitment to the productive power of language to shape "forms of life" (Virno). Both advance the use-value of language to treat the writing of theory as an open-ended material "knowledge practice" (Wark) within the relations of production—what Wark has termed the "information political economy." Both figures reflect on the formation of new collective subjects who Virno and others name the "multitude," and who Wark calls "hackers." I read the latter as a particular configuration of the former, who are presented as a more heterogeneous collective subject. That sense of reach and difference is what I emphasize here. Wark's reflections on the Anthropocene offer powerful tools and compelling narratives that I bring into connection with architecture.[8] Consequently, in the first two sections I discuss Wark followed by Virno to read the Anthropocene with the multitude.

In the next sections I test a genealogy of architectural theory for the Anthropocene by reading the thought of Rossi focused around his idea of analogical thinking about architecture and the city alongside the critical writings of Agrest on the architecture of nature and the urban-nature continuum. Rossi was at the center of critical practice and urban theory in the 60s and 70s, a period of sustained critiques of power, the linguistic turn in architecture, and the reintroduction of questions about nature.[9] Agrest followed in the 80s and continues today. Rossi was a key reference for Agrest's critique of the modern city, collectivity as a subject position, and their mutual interest in ideas around the "city as a text."[10] Rossi and Agrest argued for architecture as a distinct body of knowledge and as a critical tool. They were committed to the potential of architectural thought to stretch across fields, and of the agency of the architect to shape the ethos of the period. Although that ethos may no longer be so evident today, revisiting the lessons of Rossi and Agrest is promising. They can be updated through a reading of Wark and Virno.

All of these figures have reflected on questions of nature, language, collective imagination, and the organization of knowledge. They are exemplars for approaching how to mobilize the agency of theory and experimental practices that cross fields to appropriate concepts, methods, and projects, binding them together in new configurations. I argue that these figures and their ideas and approaches provide a launch point for an architectural theory for the Anthropocene that may help to frame new types of formal and collective agency. In particular, I use Wark's framework of critical thought and practice to investigate how these figures and ideas make contact with each other.

WARK: ANTHROPOCENE, EXTRAPOLATION, AND KNOWLEDGE PRACTICE

In McKenzie Wark's seminal text, *A Hacker Manifesto*, Wark addresses questions around the information political economy and intellectual property.[11] Wark develops a lexicon for the changes to the organization of knowledge and labor by reflecting on terms including abstraction, class, hacking, information, nature, production, representation, subject, and vector. She argues that a new class conflict has emerged that places the creators of information against a class that commodifies information.

The creators are a "hacker class," everyone who produces new information out of old information. Creators include artists, authors, biologists, chemists, educators, musicians, philosophers, programmers, researchers, theorists, architects. Wark argues that "hackers… must sell their capacity for abstraction to a class that owns the means of production, the vectoralist class—the emergent ruling class of our time."[12] The vectoralist class is named because they control the "vectors" along which information is abstracted, networked, and organized, including but not limited to Google, Apple, Amazon, and Facebook (Meta).

Wark's recent book, *Capital is Dead*, extends the argument put forward in *A Hacker Manifesto* but updates it to take account of the massification of data underway in the present, and its consequences in the time of the Anthropocene. Wark reprises the vectoralist class as follows: "The vector of information includes the capacity to transmit, store, and process information. It is the material means for assembling so-called big data and realizing its predictive potential. The vectoralist class owns and controls patents, which preserve monopolies on these technologies. It owns or controls the brands
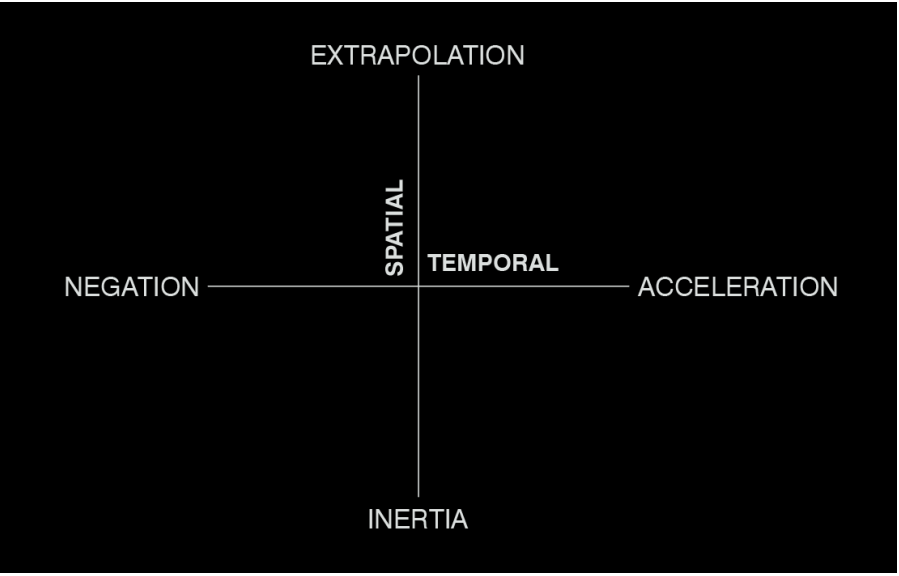

Figure 1: McKenzie Wark's framework for critical thinking and practice in the time of the Anthropocene. Extrapolation and inertia form a spatial axis; negation and acceleration define a temporal axis. The framework provides a base for thinking about how Wark, Virno, Rossi, and Agrest may make contact.

and celebrities that galvanize attention. It owns the logistics and supply chains that keep information in its proprietary stacks."[13] The typologies of the vectoralist class include big box stores such as Tesco, Walmart, and Amazon warehouses, but also their data centers, server farms, distribution hubs, and offices. Less visible are the branding, patents, customers' personal information, and the teams of intellectual workers who produce new forms of intellectual property and new ways of extracting information from consumers.[14]
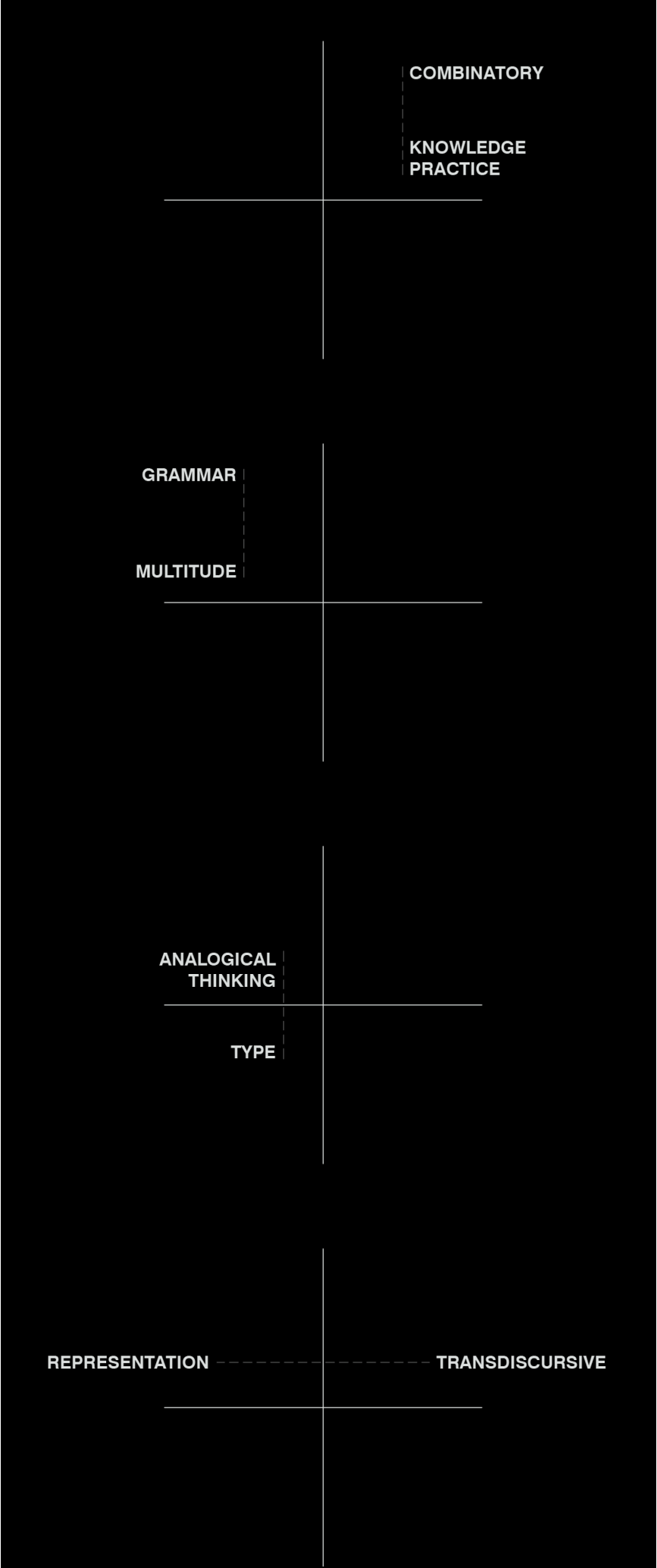
Wark argues that "the instrumentalizing of information mobilizes the whole planet as a rationalized sphere of resource extraction under the sign of exchange value."[15] In the information political economy, the commons of knowledge is enclosed as intellectual property in a mutation of the private property form. The commodification of knowledge presses down on the resources of individuals—our thought, imagination, and desire; our time and energy. The commodification of knowledge stretches natural resources by exploiting land, water, air, and fossil fuels that enable the infrastructure that allows knowledge to circulate. A first nature of land is enclosed, a second nature of inhabitable built forms transforms nature by collective labor, and a third nature of information is overlaid. Third nature wraps the planet. In this context, Wark argues that social history is entangled with natural history.

In the chapter "Nature as Extrapolation and Inertia" in *Capital is Dead*, Wark reflects on the relationship between social and natural history in twentieth century and contemporary critical thought. She argues that critique has focused on social history in the form of a "temporal axis" between accelerationist and negative critiques. Accelerationism proposes that capital must be accelerated into another mode of production.[16] Negation takes the form of contradiction and is embodied by the working class who is a negation produced by class struggle.[17] Wark argues that both of those tendencies are concerned almost exclusively with social relations. She argues that another "spatial" axis is needed to help think about social and natural history together, the "continuities and partitions," because "one thing the Anthropocene might imply is that there's no taking

for granted that there is any separation between natural history and social history."[18]

Wark adds two types of critical practice in the era of the Anthropocene. The first "extrapolates" from natural and social history alternative ways to learn about the forms and organization of material and knowledge. Extrapolation works by combining different kinds of knowledge—concepts, theories, practices—at different scales of organization and across fields that may create collective knowledge and lead to new social and built forms. Wark describes the practice using the combinatory term "natureculture" after Donna Haraway.[19] It is an example of a text-based extrapolation in that the term combines different concepts together to demonstrate the conjunction of nature and culture, its continuities rather than its separations. For Wark, "extrapolation might be one pole of an axis of thinking natureculture as an affirmative theory and experimental practice."[20] The counterpoint to extrapolation is "inertia." While extrapolation emphasizes the connective possibilities between natural history and social history, inertia is the tendency in critical thought and mainstream practice to remain the same within the already existing social order (Figures 1 and 2).

Wark argues that the dominant tendency today is the intensification of individual and collective actions forced into the commodity form, acting against the world. The individual-consumer-end experience of this is the unthinking noise of social media chains of misinformation; the spatial-end is incoherent urban form and the consumption of ever more planet by urbanization. Those acts produce a world against us out of habit and reproduce collective life in the image of capitalist development as a society of singularities.[21] Extrapolation articulates possibilities for thinking and acting collectively to build another civilization; inertia is a reminder of the challenge.[22]

COMBINATORY

KNOWLEDGE
PRACTICE

GRAMMAR

MULTITUDE

ANALOGICAL
THINKING

TYPE

REPRESENTATION — — — — — — — TRANSDISCURSIVE

VIRNO: MULTITUDE, GRAMMAR, AND NATURAL HISTORY

Wark's ideas on the hacker class as a collective political subject, the need to reflect on the merging of social with natural history, and her framework for critical practice dovetail with Paolo Virno's ideas of multitude and anthropogenesis. While Wark's approach is extrapolative and combinatory, situated towards the acceleration and extrapolation poles outlined in Figure 1, Paolo Virno's work is also combinatory but it emphasizes negation as a critical approach. Virno is the subject of one of Wark's close readings in *General Intellects*, where Wark reflects on Virno's *A Grammar of the Multitude*.[23] She describes Virno's book as a "diagnosis of the times," a "project of bringing together a conceptual matrix appropriate to the historical moment."[24]

In *A Grammar of the Multitude*, Virno develops a grammar for understanding the current mode of production. Virno calls this post-Fordism—a mode of production no longer situated in specific sites such as the factory or even the office, but instead dispersed in diverse and varied places from the classroom to the care room, the call center to the coffee shop, and now the Zoom room. Virno critiques normative political categories such as public and private, the people, and the nation state. He reflects on the extent to which alternative categories may be more helpful as tools to understand contemporary issues. Those categories include individual and collective, the multitude, and general intellect. For Virno, those terms provide a different section cut through collective life.

Virno argues that the multitude is a critique of "the people." He argues that the state creates a people as an homogeneous "one" under a sovereign ruler bound by a transfer of rights between individual to State, whereas the multitude stands for the possibility of plurality and difference not limited to a single State.[25] For Virno, the multitude negates the people: "It is a negative concept this multitude:

Figure 2: Overlay of the key concepts and methods of Wark (top), then Virno, Rossi, and Agrest (bottom) within the same inertia/extrapolation and negation/acceleration axes presented in Figure 1.

it is that which did not make itself fit to become a people."[26] The multitude is a collective political subject who gain unity by common linguistic faculties, in particular: capacity for abstraction, desire, language, and collective action. Virno argues that common experience includes the specifically human trait of a "non-specialized character" and the absence of a fixed environment.[27] The multitude constantly escape a "home" or "identity." They refuse to be bounded and partitioned. There is no distinction been public and private. Virno writes: "In advanced capitalism, the labor process mobilizes the most universal aspects of the species: perception, language, memory, affects. Roles and tasks, in the post-Fordist era, coincide largely with 'generic existence.'"[28] For Virno, the generic existence of the multitude is language. All of space and nature is a continuous space of communication. Language is the natural and historical production of our environment. It implies a dialogue with the Anthropocene.

In *When the Word Becomes Flesh*, Virno approaches the Anthropocene in the chapter entitled "Natural History." He writes: "The nature of 'natural history' is only and specifically a *first* nature. It is not an attempt at making the form of the commodity a chemical property of objects, but the unchanging biological core that characterizes the existence of the human animal in the most diverse social-economical formations."[29] For Virno, "first nature" is not primal nature such as the land, earth, and air. First nature is immediately human nature. It is socially produced historical nature such as language and institutions.[30] It is the capacity of human beings to be creative with language, and that human nature is an index of a particular period, manifest by institutions.

Virno writes: "The [linguistic] faculty is biological, the different languages are historical; the first is innate, the second is acquired; one pertains to the individual mind while the other is inconceivable outside of a social context."[31] The linguistic faculty coincides with the idea of human potential, which for Virno is the potential to produce, think, and act. It stands for the infinite possibility of human agency, and it coexists between social and natural history. The linguistic faculty of the individual is a natural phenomenon that manifests itself today in the organization of

work, information as raw material, and knowledge production. In post-Fordism, linguistic creativity and innate human "potential" are an economic resource and hence an historical product.

Consequently, Virno mobilizes the agency of the multitude entangled with natural and social history. Although he does not say it, understanding social history as part of natural history suggests the "metabolic rift" that opens when human labor interrupts the ecology of the planet.[32] The Anthropocene makes nature an historical product. The more nature is consumed by labor and technique, the less the cycle can renew itself. Planetary resources are finite.

READING THE ANTHROPOCENE WITH THE MULTITUDE TOWARDS ARCHITECTURE

The interpretive approach undertaken by Virno to read nature as the natural history of human beings, institutions, and language foregrounds questions of individual and collective agency around the figure of the multitude—one member of whom is Wark's hacker class. Overlaying Wark's framing of critical thought along the axes of negation/acceleration and inertia/extrapolation, Virno occupies an axis that joins negation and extrapolation.[33] Multitude negates the people. Nature is extrapolated into natural history. The individual becomes a multitude. There are compelling interpretive strategies and world perspectives at stake in the theories of Wark and Virno, especially when these figures are read together. Their thought may be further articulated and spatialized when overlaid onto architecture.

I want to transpose onto architecture the concepts and methods put forward by Wark and Virno on language, social and natural history, the agency of the multitude and the hacker class, and the approach of negation and extrapolation. Those categories are the framework through which I interpret ideas of analogical thinking, bodies, nature, and territory in the thought and projects of Aldo Rossi and Diana Agrest. Revisiting Rossi and Agrest and reflecting on how their work makes contact with the ideas and practices of Wark and Virno might open some pathways through which to think from past examples

to present conditions, Anthropocene to multitude, architectural theory to critical practice.

ROSSI: ANALOGICAL THINKING, TERRITORY, AND COLLECTIVE LIFE

There are aspects of Rossi's thought on the question of nature that are prescient for understanding how architecture can be a critical tool to reflect on the relationship between human and natural forces; in other words, the Anthropocene. Some clues can be found in *The Architecture of the City*. In the section on "Typological Questions," Rossi writes that architecture and the city are a transformation of nature: "The city as above all else a human thing is constituted of its architecture and of all those works that constitute the true means of transforming nature."[34] Rossi followed with reflections on the formal, typological, and associative condition of nature: "Natural artifacts as well as civic ones become associated with the composition of the city" so that natural and constructed artifacts, and the permanence of the plan, "constitute a whole which is the physical structure of the city."[35] In sections on "Geography and History: The Human Creation" and "Urban Ecology and Psychology" Rossi speaks about nature as "ecology" and brings his reading of nature into contact with history, memory, and social relations.[36] It was part of how Rossi framed his idea of the city as the "locus" of collective memory. Rossi asked: "how does the environment influence the individual and the collective?"[37] He always returned to the question of the individual within the collective life and memory of the city. Consequently, nature was social; it was historically produced human nature. It coincides with Virno's notion of natural history.

One of Rossi's most compelling statements on nature can be found in a short essay entitled "My Designs and Analogous Architecture." Here Rossi develops his analogical thinking about the architecture of the city. Rossi writes: "The body of architecture evolves from a doctrinal body into a physical body of territorial construction, and it is a common experience just like the human body—art and life."[38] There is a chain of association that moves from architecture as a body of knowledge to architecture's spatial capacity for organizing a territory—the

architecture of nature, the nature of architecture. Scale telescopes from the body of individuals as a multitude to the occupation of territory as a common experience. Rossi repositions architecture beyond the design of individual buildings towards a collective approach to understanding how architecture structures the city extending into the territory. The chain of association is a knowledge practice and an example of "extrapolation." It is connective and analogical. It puts forward the possibility of architecture to extrapolate from individual to collective, from different ideas and practices, across fields and scales. It is a practice of making worldviews.

Those categories are related to a key statement by Rossi in the section on urban ecology in *The Architecture of the City*. Rossi reflected as follows: "I maintain that in art or science the principles and means of action are elaborated collectively or transmitted through a tradition in which all the sciences and arts are operating as collective phenomena. But at the same time they are not collective in all their essential parts; individuals carry them out."[39] Rossi's statement suggests a collaborative approach—he mentions the arts and sciences; we can also say the humanities—coupled with a sense of individual agency. It resonates with Virno's notion of the heterogeneity of the multitude as distinct individuals who form the potential for collective action without necessarily congealing into a static "people." It seems to suggest an open procedure that combines the knowledge that individuals accumulate from their specific approaches. It is about how new knowledge is created out of the old.

Such a project is collective and crosses disciplines, modes of interpretation, and diverse knowledge practices. It is close to the method adopted by Wark, which she describes variously as extrapolation as I highlighted earlier, and as a "common task."[40] That approach emphasizes the connective possibilities between subject and the world, thought and action, between different levels of critique and representation. Rossi always had an eye on the old, the familiar, but he made the familiar strange. He found ways to articulate continuities and differences,

transforming historical urban and architectural types and typological knowledge into something fresh. We need a project to transform collective life and support new ways of thinking, living, and working. The common task is to know the world and find ways to inhabit, think, and act in the world, differently from our current habits.

AGREST: CONSTRUCTIONS OF NATURE, REPRESENTATION, AND TRANSDISCURSIVITY

In *Architecture of Nature/Nature of Architecture,* Diana Agrest has reflected on the relationship between architecture and the Anthropocene. Agrest argues that nature has always been part of architectural discourse, from the relationship between nature and culture, to that between nature and architecture, to the "nature/urban continuum."[41] For Agrest, this interaction takes on a prominent position during the climate crisis.

Nature is the object of study in *Architecture of Nature* and Agrest explores the interaction with architecture, primarily in relation to scientific and philosophical discourse. Natural phenomena are addressed using drawing and writing to rethink the power of nature and the limits of architecture as a body of knowledge. Agrest writes: "We work with existing data, selected from the various fields of science where natural phenomena are explored, and re-theorize them within our own discourse."[42] Phenomena studied include canyons, deserts, glaciers, oceans, radioactive winds, and volcanoes. Plans and sections reveal nature's organization and articulate entanglements between natural and human forces, scientific data and modes of seeing. The drawings have an aura of both fact and a disquieting sense of the sublime, or even terror, as we confront the climate catastrophe.

For Agrest, rethinking the question of nature is not necessarily about identifying immediate answers, but reflecting on possible questions. It is about using architecture's tools—drawing and writing—and the creative use of representation as a tool for thought in the production of knowledge. She describes her approach as "transdiscursive," which is the "construction of, or articulation between

discourses."[43] It resonates with Rossi's analogical approach and Wark's practice of extrapolation where one field enters into dialogue with another. In so doing, the discourse of architecture expands.

Agrest engages with the notion of Anthropocene, but also rebuts it. She writes: "While the Anthropocene as a position has directed attention to critical environmental issues, as a construction of nature it also carries an ideology of problem-solving and object-making that serves the powers that be."[44] Agrest refers to the writings of Haraway and Jason Moore, and their term "Capitalocene" to identify the primary agent of exploitation of nature as capitalist development.[45] Agrest argues that from an architectural perspective, the idea of the Anthropocene is problematic as it places Anthropos as "man" at the center again, historically connoting male-dominated Western culture.

Agrest recounts the concept of nature in architecture, beginning with Vitruvius to Alberti and Laugier. She argues that nature was incorporated into architectural thought as a referent for "beauty" and the "body" until a break was articulated by Le Corbusier. Nature returned as a pragmatic element in modern architecture and urban discourse. Nature was light, air, view, fluid interior to exterior connections, and also a formal element in the ground and roof plane where nature is duplicated, geometricized, and constructed. Nature is captured, repressed, and represented by a controlled green plane. Le Corbusier's Radiant City project is one example, but the principle became typical of subsequent postwar urban schemes.

Architecture of Nature follows on from texts such as "The Return of the Repressed: Nature" and "Architecture from Without: Body, Logic, and Sex."[46] In those writings, Agrest argued that nature had been absent from urban discourse after modernism, replaced by a focus on object buildings and a confrontation between the machine and the forces of nature. Agrest interprets the confrontation as a taming of the "double image of woman/nature" and with it the suppression of women as urban subjects.[47] Agrest writes: "Nature is first suppressed, via a metaphorical maneuver representing it as a 'green
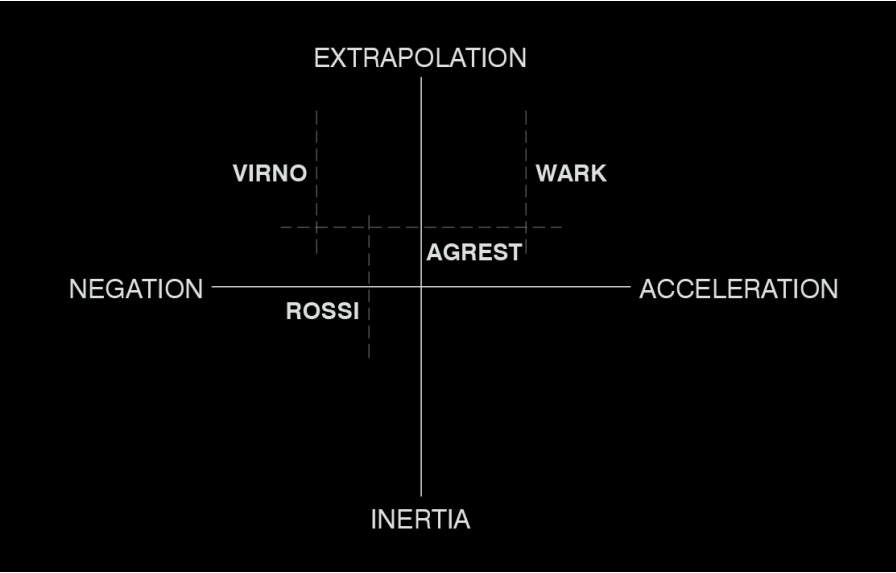

Figure 3: Mapping points of contact between figures, ideas, and methods of Wark, Virno, Rossi, and Agrest towards a discursive and materialist architectural theory for the Anthropocene.

plane,' as part of the urban machine; it is then relegated to a background, finally to be expelled by the economic-political forces of capitalism in a globalized market economy based on the exploitation and destruction of nature."[48] In Agrest's reflections, architecture has always been part of nature linked by a chain of association.

What characterizes Agrest's approach is its open-endedness. It is an extrapolative method that draws together subject and object, and multiple perspectives and approaches. Agrest allows questions to emerge, acquire depth, to open onto varied fields, and not to stop short by finding immediate answers. She uses architecture to expand the normative disciplinary boundaries and engage a spectrum of disciplines from the humanities to the sciences in a collaborative effort. It is a compelling strategy that allows a reflection on architecture's particular means of critique and representation, while also blurring the boundaries that would conventionally separate architectural theory from other practices.

CONCLUSION: TOWARDS AN ARCHITECTURAL THEORY FOR THE ANTHROPOCENE

Reading Wark and Virno with Rossi and Agrest offers new conceptual frameworks and methods of knowledge practice towards an architectural theory for the Anthropocene. They provide a toolkit of concepts and methods that can help shape the theoretical and practical efforts of architecture in the time of the Anthropocene. Wark and Virno argue that the language we use to describe capitalism and organize in resistance to capital must be reinvented. They are compelling figures because they scale thought and practice up, connecting historical, political, and technological regimes within a lucid theoretical framework. Thought transforms into action. Rossi and Agrest help to spatialize those efforts.

One task for an architectural theory for the Anthropocene is to reflect on the critical tradition and appropriate the key terms and strategies with which new texts, theories, and knowledge practices may be developed. It may lead to the invention of new narratives, techniques, and collective imaginaries as a step towards thinking about how new spaces and places of inhabitation might be constructed.

For Wark, such a method is a collaborative approach to the sharing and organization of knowledge as *extrapolation* from one field to another, from one historical era to the present. She works on theory to unravel new terms and processes, linking them together to put pressure on norms and habits that have congealed into what she terms inertia. For Virno, the mode of contemporary production demands a variety of analyses with a cluster of social and political concepts framed as a *grammar of the multitude.* He articulates alternative readings of labor and technique and keeps language-work oriented towards current conditions. Rossi's *analogical thinking* is formal and associative, poetic and political. Rossi shows how individuals and individual ideas condense into collectives and collective ideas. The analogue stands for thinking beyond, thinking in a chain of association. It may help to move a grammar of the multitude into a grammar of the city in the time of the Anthropocene. For Agrest, the approach is a *transdiscursive* method to transpose critiques between different domains of knowledge and practice such as the sciences and philosophy to architecture and urbanism. It leads to the blurring of boundaries, the interaction of disciplines, and loosening the inertia of habit.

We need to change our habits, habitats, and forms of inhabitation. A common aim must be to push against the fracturing of individual and collective agency, habits of overconsumption, and unethical forms of capitalist development. The urgent collective task for architecture is to mobilize its formal and imaginal agency to articulate ways of thinking and living otherwise.[49] An architectural theory for the Anthropocene would be open-ended and discursive, collective and materialist. It needs to seek points of contact that link ideas, methods, and figures across perspectives and scales (Figure 3). The figures discussed here begin to show how concepts can be reworked into tools, tools may become design methodologies and thinking processes, which in turn might produce alternative actions, forms of thought, and forms of city that support collective life in the Anthropocene. ▪

ENDNOTES

1. John Bellamy Foster, Brett Clark, and Richard York, *The Ecological Rift: Capitalism's War on the Earth* (New York: Monthly Review Press, 2010).

2. It is one context amongst other interrelated contexts that include the housing crisis, social injustice, health and wealth inequalities, and a more general sense of a crisis of collective imagination that architects and architecture must find ways to engage.

3. Daniel A. Barber, "Architectural History in the Anthropocene," *The Journal of Architecture* 21, no. 8 (2016): 1165–70 (1165). Also see Daniel A. Barber, *Modern Architecture and Climate: Design before Air Conditioning* (Princeton: Princeton University Press, 2020).

4. Barber, "Architectural History in the Anthropocene," 1166.

5. Dean Hawkes, *The Environmental Imagination: Technics and Poetics of the Architectural Environment* (London: Routledge, 2008); James Graham et al., eds., *Climates: Architecture and the Planetary Imaginary* (New York: Lars Muller, 2016); Elisa Iturbe, "Architecture and the Death of Carbon Modernity," *Log* 47 (2019): 10–23; Susannah Hagan, *Revolution? Architecture and the Anthropocene* (London: Lund Humphries, 2022). From a theoretical design practice perspective see Design Earth, Rania Ghosn, and El Hadi Jazairy, *The Planet After Geoengineering* (New York; Barcelona: Actar, 2021).

6. Paolo Virno, *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life* [2001], trans. Isabella Bertoletti, James Cascaito, and Andrea Casson (Los Angeles, CA: Semiotext(e), 2004).

7. McKenzie Wark, *Sensoria: Thinkers for the Twenty-First Century* (New York: Verso, 2020), 7. Also see McKenzie Wark, *Molecular Red: Theory for the Anthropocene* (London; New York: Verso, 2016). There are other compelling interventions in this debate that help unpack the concepts and material consequences as a grammar of the Anthropocene. See for instance: Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013); Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso, 2015); Jussi Parikka, *A Geology of Media* (Minneapolis: University of Minnesota Press, 2015); Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016); Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History and Us* [2013], trans. David Fernbach (London; New York: Verso, 2016); Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago, 2021); Nancy Fraser, "Climates of Capital: For a Trans-Environmental Eco-Socialism," *New Left Review*, no. 127 (2021): 94–127.

8. Wark's work was brought to an architecture audience in McKenzie Wark, *50 Years of Recuperation of the Situationist International* (New York: Princeton Architectural Press, 2008). The book was part of a series on the relationship of architectural texts to politics and urban life edited by Joan Ockman. It included texts by Pier Vittorio Aureli on Aldo Rossi, Archizoom, and the politics of autonomy; and Sven-Olov Wallenstein on modern architecture and biopolitics. Indeed, there is even a brief reference to Rossi in McKenzie Wark, *Telesthesia: Communication, Culture & Class* (Cambridge: Polity, 2012), 53.

9. For a concise survey of nature in architecture see the entry in Adrian Forty, *Words and Buildings: A Vocabulary of Modern Architecture* (London: Thames & Hudson, 2012).

10. See the collection of writings in Diana Agrest, *Architecture from Without: Theoretical Framings for a Critical Practice* (Cambridge, MA: MIT Press, 1991).

11. McKenzie Wark, *A Hacker Manifesto* (Cambridge, MA: Harvard University Press, 2004).

12. Wark, *A Hacker Manifesto*, 20.

13. McKenzie Wark, *Capital Is Dead: Is This Something Worse?* (London; New York: Verso, 2019), 13.

14. Also see Parikka, *A Geology of Media* who analyzes the interplay of resource extraction and hard labor on the perceived "immateriality" of contemporary modes of production.

15. Wark, *Capital Is Dead*, 96.

16. For a survey of accelerationist thought see Robin Mackay and Armen Avanessian, eds., *#Accelerate: The Accelerationist Reader* (Falmouth: Urbanomic, 2014).

17. For a paradigm of negative thought see the essays collected in Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment* [1944], trans. John Cumming (London; New York: Verso, 2010).

18. Wark, *Capital Is Dead*, 127.

19. Donna J. Haraway, *Manifestly Haraway* (Minneapolis: University of Minnesota Press, 2016).

20. Wark, *Capital Is Dead*, 129.

21. Andreas Reckwitz, *The Society of Singularities*, trans. Valentine A. Pakis (Cambridge, MA: Polity, 2020).

22. Wark, *Capital Is Dead*, 142.

23. McKenzie Wark, *General Intellects: Twenty-One Thinkers for the Twenty-First Century* (New York: Verso, 2017). Chapter 3 "Paolo Virno: Grammars and Multitudes."

24. Wark, *General Intellects*, 51, 64.

25. Virno draws on Arendt's idea of plurality as "the twofold character of equality and distinction." Hannah Arendt, *The Human Condition* [1958] (Chicago: University of Chicago Press, 1989), 175.

26. Virno, *A Grammar of the Multitude*, 23.

27. Paolo Virno, *When the Word Becomes Flesh: Language and Human Nature* [2003], trans. Giuseppina Mecchia (South Pasadena, CA: Semiotext(e), 2015), 189, 199. Also see Paolo Virno, "Natural-Historical Diagrams: The 'New Global' Movement and the Biological Invariant," in *The Italian Difference: Between Nihilism and Biopolitics*, ed. Lorenzo Chiesa and Alberto Toscano, trans. Alberto Toscano (Melbourne: re.press, 2009), 131–47.

28. Virno, *When the Word Becomes Flesh*, 227.

29. Virno, *When the Word Becomes Flesh*, 172–173. Virno's italics.

30. Virno draws on the debate between Noam Chomsky and Michel Foucault to develop this line of thought. See Noam Chomsky and Michel Foucault, *The Chomsky-Foucault Debate: On Human Nature* (New York: The New Press, 2006).

31. Virno, *When the Word Becomes Flesh*, 191.

32. Wark, *Molecular Red*, xiv.

33. Paolo Virno, *Multitude: Between Innovation and Negation*, trans. Isabella Bertoletti, James Cascaito, and Andrea Casson (Los Angeles, CA: Cambridge, Mass: MIT Press, 2007).

34. Aldo Rossi, *The Architecture of the City* [1966], trans. Diane Ghirardo and Joan Ockman (Cambridge, Mass.: MIT Press, 1982), 35.

35. Rossi, *The Architecture of the City*, 51, 86.

36. Rossi, *The Architecture of the City*, 97–101, 112–114.

37. Rossi, *The Architecture of the City*, 112.

38. Aldo Rossi, "My Designs and the Analogous City," in *Aldo Rossi in America: 1976–1979*, trans. Diane Ghirardo (IAUS New York: MIT Press, 1979), 16–19 (19). In the paragraphs preceding this statement, Rossi writes: "This analogous architecture was already described in things, an accretion through time; it referred to different times and situations, ultimately dissolving into nature."

39. Rossi, *The Architecture of the City*, 113.

40. Wark, *Sensoria*. See the introduction entitled "Toward the Common Task."

41. Diana Agrest, *Architecture of Nature/Nature of Architecture* (Novato, CA: ORO Editions/Applied Research & Design, 2018), 8.

42. Agrest, *Architecture of Nature/Nature of Architecture*, 12.

43. Agrest, *Architecture of Nature/Nature of Architecture*, 9, 78.

44. Agrest, *Architecture of Nature/Nature of Architecture*, 11.

45. Moore, *Capitalism in the Web of Life*; Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin," *Environmental Humanities* 6, no. 1 (2015): 159–65.

46. Diana Agrest, "The Return of the Repressed: Nature," in *The Sex of Architecture*, ed. Diana Agrest, Patricia Conway, and Leslie Kanes Weisman (New York: Harry N. Abrams, 1996), 49–68; Diana Agrest, "Architecture from Without: Body, Logic, and Sex" [1988], in *Architecture from Without: Theoretical Framings for a Critical Practice* (Cambridge, MA: MIT Press, 1991), 173–95. To develop her argument Agrest refers to Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: Bravo, 1990). Also see Carolyn Merchant, *The Anthropocene and the Humanities: From Climate Change to a New Age of Sustainability* (New Haven: Yale University Press, 2020).

47. Agrest, "The Return of the Repressed: Nature," 53.

48. Agrest, "The Return of the Repressed: Nature," 59.

49. Chiara Bottici, *Imaginal Politics: Images Beyond Imagination and the Imaginary* [2014] (New York: Columbia University Press, 2019).

FROM GIS TO MARBLE CRAFTS: MUNDANE REPRESENTATIONS OF RENEWABLE ENERGY LANDSCAPES AND THEIR ROLES TOWARDS JUST TRANSITIONS

MARILENA MELA

Marilena Mela is a PhD candidate and lecturer at Vrije Universiteit Amsterdam. She studied architecture in Athens and Florence and worked as an architect in Spain and Greece, before joining the EU-funded project Heriland, a network of doctoral research that explores the relationships of cultural heritage to spatial planning. Her research interests range from critical heritage, place identity, and landscape adaptation, to grassroot activism, spatial planning cultures, and global networks. Her PhD project looks at the spatial complexities of the energy transition and is informed by fieldwork in islands around Europe, including the Cyclades in Greece, the Wadden Islands in the Netherlands, Shetland in Scotland, and the Aeolian islands in Italy. At VU Amsterdam, she teaches heritage and landscape related courses at a BA and MA level. She is also involved with participatory projects in Greece, aiming to the activation of local knowledge as a means to reclaim the largely abandoned Greek countryside.

ABSTRACT

This essay discusses the roles of spatial representations of renewable energy in shaping attitudes and action around the production of space amid the socio-environmental crisis. Central is the dispute around the production of renewable energy spaces. Renewable energy infrastructures such as wind farms and solar parks are important tools for the urgent transition of our societies to cleaner models of energy; at the same time, the territorial expansion of renewables usually happens within the existing neoliberal frameworks of spatial production, often reproducing inequalities and excluding human and non-human actors from their local landscapes. Architecture and architects can critically contribute to this dispute by employing their visualizing skills. Forefront architectural research already visually investigates matters of sustainability, spatial justice, and local rights; however, its engagement with real-life complexities of the energy transition remains limited. Greater affective power lies with the everyday spatial imagery that already forms part of renewable energy planning. Architectural materials, such as masterplans, construction drawings, diagrams, and models usually constitute formal requirements within the planning process. In some cases, the insufficiencies of the planning system account for the emergence of opposition movements, which spontaneously employ sketches, caricatures, landscape photography, and graphics as means of protest. An analysis of visual materials from my research in Scotland, the Netherlands, and Greece, and a focused case study of a wind-power conflict in the Aegean islands, shows how agencies of spatial representations vary greatly depending on sociopolitical contexts and planning cultures. "Mundane" imagery created both within the formal planning process and in opposition to it interacts with existing systems and ultimately affects the shaping of the landscape.

PRODUCTION OF RENEWABLE ENERGY SPACES

Sites of renewable energy production, such as wind farms and solar parks, are now ubiquitous presences on the landscape and will become more so in the coming years. For many, they fulfill humankind's long overdue need to stop depleting the finite resources of the earth. But no matter how intangible sun and wind might appear, their transformation into usable energy is not placeless. Capturing devices, electricity grids, conversion, and storage stations have their materiality—as do the landscapes that receive them. To (simplistically) quote Henri Lefebvre,

> When we evoke 'energy', we must immediately note that energy has to be deployed within a space. When we evoke 'space', we must immediately indicate: what occupies that space and how it does so: the deployment of energy in relation to 'points' and within a time frame. When we evoke 'time', we must immediately say what it is that moves or changes therein.[1]

Lefebvre employs "energy" in a much wider sense; however, the passage is effective in reminding that these sites are both agents to and reflections of the globalized production of space. In the era of what Neil Brenner and Christian Schmid describe as planetary urbanization, the infrastructural spaces of energy production cannot be absent from architectural and urban research.[2] Theorist Keller Easterling has contributed to our knowledge of such spaces by exploring their relationships to flows of capital, and their potential for resistance-building.[3] In the wide area of environmental humanities, anthropologist Anna Lowenhaupt Tsing and her colleagues look at the unintended consequences of industrial infrastructure that become interwoven with the biotechnological assemblage of place.[4]

Although academic attention on infrastructural spaces has risen, renewable energy projects remain a somewhat awkward subject for socio-spatial research. A potential reason is that, while they promise to build a less exploitative relationship between humans and earth, this promise is not necessarily embedded within a wider shift in the dominant economic principle of expansion and growth. Media theorist

Jussi Parikka reminds us that the geopolitics of the hunt for energy, as an aspect of contemporary digital capitalism, remains dependent on the relationships with the earth.[5] The energy transition has been essentially conceptualized as a program of state subsidies to energy companies; in other words, it is largely left up to the neoliberal market to regulate and implement this global project.[6] A report by TNI (Transnational Institute) and TUED (Trade Union for Energy Democracy) argues that this path is not sustainable: while the percentage of energy produced by renewable sources has risen, the overall energy needs and production have also risen, perpetuating the dependence on fossil fuels.[7] At a local level, privately led planning processes at times fail to take into account environmental and cultural characteristics. The right to the landscape of traditionally marginalized actors, such as rural or indigenous communities, or non-human life, is often disregarded.[8] The research of anthropologists Nicola Argenti and Richard Knight in Greece shows that locals often see renewable energy projects as parts of neo-extractivist agendas.[9] Building on their research in Mexico, anthropologists Cymene Howe and Dominic Boyer argue that sustainable energy projects "have the potential to imitate the political and institutional logics of coal, oil, and gas."[10]

Alternatively, they continue, such projects "might pursue different trajectories altogether." The energy transition can be perceived exactly as an opportunity to rethink and redesign dominant political and social institutions. The ubiquity of wind and sun, and their shorter supply chain, "favor local political sovereignty and authority, because they destabilize the translocal infrastructures and necessities of grid-based modernity."[11] A truly sustainable transition would feature the prioritizing of marginalized communities, attention to matters of social, spatial, and energy justice, and a claim for an overall shift in the modern narrative of growth and development.[12]

USES AND AGENCIES OF THE (ARCHITECTURAL) IMAGE

Such a shift, however, also requires alternative models of spatial production and governance. The notions of *landscape* and *territory* are useful to this pursuit.

For Antoine Picon, *territory* in its original conception saw space as a passive set of resources to be managed. *Landscape*, as developed in relation to painting, implied a similar detachment between human and space, and emphasized the aesthetic appreciation of the environment.[13] Cultural geographer Kenneth Olwig gives a different explanation of the term: *landscape* (the German *Landschaft*, appropriated by the Dutch) relates to a system of spatial governance from the inside, by communities who "know their things."[14] With the emergence of the environmental humanities, the *landscape* became an appropriate term to describe the ever-evolving assemblage of relationships between human and non-human actors.[15]

These different definitions reflect the roles of spatial disciplines, such as architecture and landscape architecture. The collective publication *The Feral Atlas* discusses the historic role architecture played in colonization and industrialization through the implementation of grand designs. Architect Feifei Zhou argues that architects addressing climate change should instead focus less on "large-scale infrastructure requiring scientific interventions to improve performance and efficiency," and more on alternative spatial analyses of the Anthropocene.

> Architects offer a particular set of skills of noticing, representing, and analyzing, especially in relation to the built environment and the structures humans have observed, designed, or occupied over time.[16]

In other words, the agency of architects might lie not only in designing territories but also in visualizing landscapes, in ways that allow to spatialize new imaginaries for space and place. Forefront architectural research and practice already work in this direction. In the 17th International Venice Architecture Biennale, curated by Hashim Sarkis and themed "How will we live together?", concepts of environmental, social, and political justice featured in powerful visualizations. Exhibits explored global financial flows, big-scale landscape transformations, and new models for inclusion and participation. The Polish contribution, titled *Trouble in Paradise*, specifically engaged with the future of rural landscapes, proposing to seek solutions to mitigate the effects of

migration, marginalization, and problematic planning by investigating the relevance of concepts of the commons.[17] The central installation, *Panorama of the Polish Countryside*, consisted of a printed collage which, hanging like a curtain that covered the entire perimeter and height of the exhibition pavilion, aimed to assimilate the experience of standing amid this post-productive Polish countryside—now featuring utility poles and arrays of wind turbines (Figures 1 & 2).

Figures 1 & 2: Panorama of the Polish Countryside created by Jan Domicz, Michał Sierakowski, Paweł Starzec, PROLOG +1. Exhibit in the Polish pavilion at the 17th International Venice Architecture Biennale, curated under the title Trouble in paradise by collective PROLOG+1. One out of few exhibits engaging with the everyday territorial complexities of the energy transition. More information in the publication Wojciech Mazan, ed., *Trouble in Paradise* (Warsaw: Zacheta — National Gallery of Art, 2020). Image source: author.

Architectural research has, in some cases, engaged with the complexities of the energy transition. However, it is perhaps more substantial to look beyond forefront architectural projects, which remain relatively detached from society and oriented toward

specific expert audiences, and turn instead towards the somewhat mundane spatial representations created around renewable energy projects. Drawings, maps, diagrams, sketches, photographs, and other visualizations already participate in the production of these spaces in various ways. Such materials are generated by engineers, landscape architects, planners, photographers, or simply contesting actors.[18] Their analysis shifts the focus from the intentions of the designers to the unintended consequences of spatial representations. The images circulate widely in the contemporary mediascape and, as cultural theorist E. Ann Kaplan describes, "construct what people know as reality."[19] Images become a tool for governing the territory, a way of seeing the landscape, and a means for its actors to establish common claims.

ARCHITECTURAL DRAWINGS IN RENEWABLE ENERGY PLANNING

As in all engineering projects, drawings are important tools in planning for renewable energy projects. The planning process for wind farms and solar parks is relatively standardized in the context of European countries, although it presents important variations per place, project, and planning system. The case of the much-contested Viking windfarm in the windy Shetland islands in the north of Scotland presents a rich example of the various uses of formally required plans and drawings. The wind farm started as a joint project of the islands' council and an energy company, and the first Environmental Impact Assessment for a 150-turbine installation was prepared in 2009. The company described the process as a "design iteration" that aimed to the fulfillment of two sets of criteria: legal and technical on the one hand, and environmental on the other one.[20] To this aim, multiple studies were drafted and related, among others, to landscape impact, ornithology, or roads and traffic. These were accompanied by maps of designated areas, layout plans, rendered views, and construction details (Figure 3). These materials were produced by many different consulting firms, none of which held a specific design orientation. Instead, with a focus on assessment, real estate, or planning policies, the goal of their services was for the project to achieve planning consent after consultation by statutory
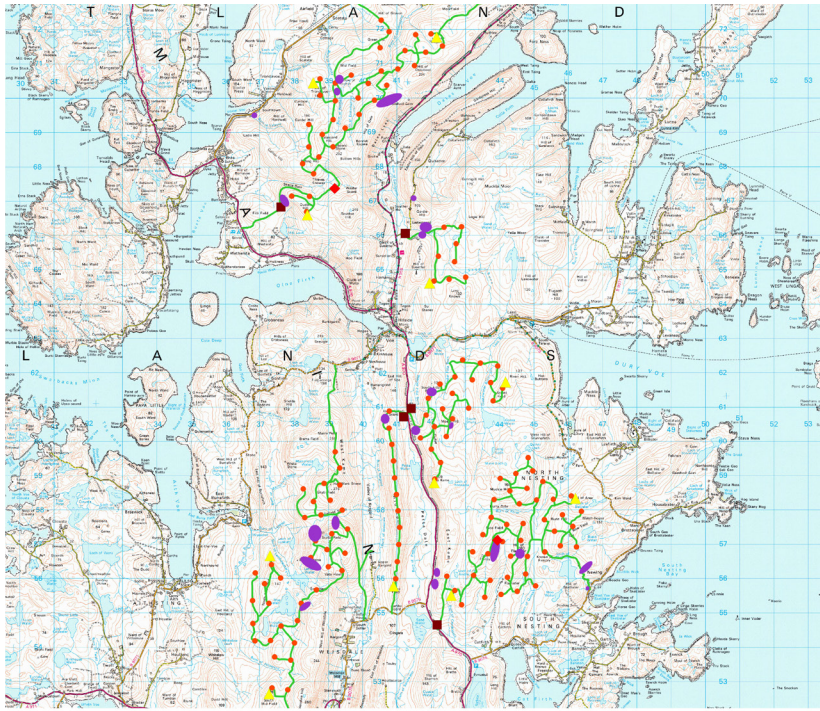
Figure 3: Maps and drawings related to the design of the Viking wind farm in the Shetland Islands. Above: Site layout of the project prepared by BMT Cordah as finalized in 2009. (Source: Viking Energy Archive, Environmental Impact Assessment 2009, Appendix Figures, in www.viking-energy.co.uk.) Bottom Right: Photomontage of the future wind farm in the landscape. (Source: Ash design and assessment- Viking Wind Farm, in www.ashdesignassessment.com/)
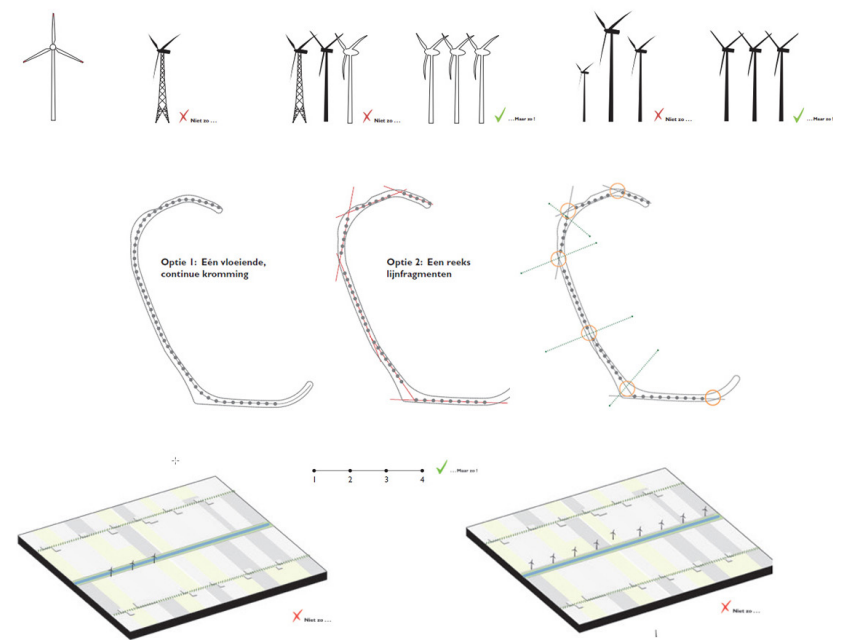

Figure 4: Visual extracts from the report prepared by H+N+S architects for the Wieringermeer polder. The diagrams illustrate guidelines for good practices in the spatial configuration of wind turbines. (Source: H+N+S Landschapsarchitecten, "Beeldkwaliteitsplan Windenergie Wieringermeer," Amersfoort, Oktober 2014)

authorities. The project was also presented to the neighboring communities in the form of drawings, an interactive 3D representation, and a physical model in scale 1:30000.[21] A period of statutory objections led to the modification of the layout, and eventually, planning consent was granted for a lightened wind-farm of 103 wind turbines.[22]

The project has since been described as divisive for the local community.[23] According to opponents, objections regarding the impact of the wind farm on the island landscape had barely any effect on the result. Overall, design materials were prepared primarily in response to formal requirements, or as essential threads in bureaucratic entanglements, rather than as tools in a creative design process. While the

multiple documents and images are easily accessible on the company's website, the lack of a readable masterplan makes it difficult for the non-expert to decipher the logic behind the project; the fragmented nature of images, their production by a wide range of specialists, and the heavy dependence on invisible boundary lines might have contributed to the detachment of the project from the lived island landscape. These materials make it clear that the project (as is the case with most renewable energy projects) was not conceived as part of an integrated design vision for place, but was run instead as a subject-less, bureaucratical process, defined by operational and financial factors. The island council has since drafted maps of territorial guidance for renewables, perhaps in an attempt to minimize future disputes.[24]

In other cases, designers have been invited to create spatial visions for the integration of landscapes with renewable energy devices. Some examples come from the Netherlands, a country described by Andrea Faludi as having "a soft spot for planning,"[25] where local and regional governments have often collaborated with landscape architects to define guiding principles for wind and sun power infrastructures. In 2011, landscape architecture studio H+N+S prepared a structural vision for wind energy in the Wieringermeer polder.[26] The vision responded to a need for upscaling the already existing wind power generation and a realization that the policy of fragmented assessments of individual windfarms would end up harming the spatial cohesion of the landscape. The project was commissioned by a partnership of wind farm owners and energy companies and was supported by the municipality and the province. The design approach, as one of the project managers describes, is based on a series of clear line arrangements that add a "recognizable new layer in the cultural landscape" and create the opportunity "to better reflect the essence of the polder."[27] The design team prepared an "image quality plan" (Beeldkwaliteitsplan or BKP) that comprises extensive visualizations of good and bad practices for the spatial configuration of wind turbines, and visually

examines scenarios for their siting in relation to existing urban patterns in many different scales; the plan was afterwards used to assess individual planning applications (Figure 4). Several architectural visual tools are present in the report: sketches, top-view plans, cross-sections, diagrams, axonometries, and collages. A follow-up article on the website of the Center for Monuments and Archaeology of North Holland argues that, despite the drastic upscaling, the employment of design work has led to an improvement of the visual qualities of the landscape.[28]

As is evident in this and other renewable energy projects in the Netherlands, design principles are generally employed early in renewable-energy planning. Urban designers and landscape architects engage with energy on many scales: they produce research projects referring to the energy transition in the entire European territory,[29] or design interventions for the integration of small projects in sensitive dunescapes.[30] In general, while conflicts around renewables are ever-present in the Dutch territory, the accessibility and ubiquity of design strategies and materials seem to be playing an important role in consensus building, perhaps in contrast with the reception of similar projects in many other places.

GREY SPATIAL REPRESENTATIONS IN THE AEGEAN ISLANDS

A different set of examples come from Greece, where recent years saw a rise in contestations around top-down renewable energy projects. These projects employ the drawings that are formally required for assessment and construction, although in many cases it is fairly hard for citizens to gain access to these materials. At the same time, an abundance of sketches, photographs, advertisements, caricatures, artworks, and other grey spatial representations have emerged as byproducts of conflicts. These images, created by promoters of renewable energy, such as energy companies, or protesters against it, such as local groups, appeal to the moral values of the viewer. Green fields, with almost picturesque
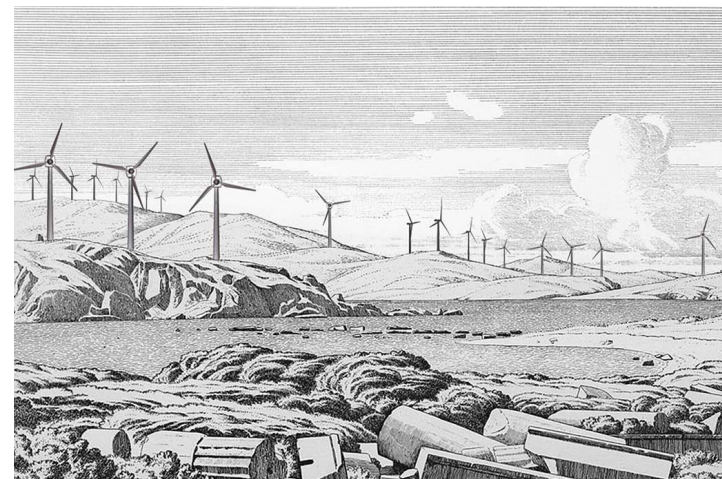
wind turbines on the one hand and wide obtrusive roads dug in formerly pristine landscapes on the other, attempt to convince the audience about their version of common good. Companies address the responsibility of the consumer to support sustainable forms of energy, and protesting groups aim to mobilize communities against the destruction of the landscape. The meaning of places and technological objects change depending on the staging, reception, and interpretation of the image (Figures 5 & 6).[31]

A closer look at some of these images allows an understanding of the formation of place out of a combination of physical and discursive forces. In his set of collages *Desecrations*, architect Kostas Manolidis reproduces familiar scenes of small harbors, hilly islets, sun-warmed rocks, and Doric order

architectural remnants (Figures 7 & 8). These are, unmistakably, scenes from the Aegean archipelago as portrayed by 19th century travelers, only different: dense forests of giant wind turbines have sprung all over the islandscape. In Manolidis' description we read:

> Rapidly growing numbers of absurdly large wind turbines are forced onto landscapes of rural Greece, irreparably ruining intact natural scenery and historical sites. These collages are trying to bring out this blight by inserting the giant machines into the idealizing gaze of antiquated landscape representations.[32]

Indeed, in the case of the Aegean islands, these and many other images add a new layer to a widely represented space. Since the end of the 19th century, the circulation of images of blue seas, white terraced settlements, and rocky hills gradually attributed a mythical status to the previously 'undiscovered' islands of the Cyclades and the Dodecanese complex. Architects of the modern movement—among them Sigfried Giedeon and Le Corbusier—contributed with sketches, photographs, and manifestos, projecting the unique equilibrium of form and function in island habitats.[33] In 1965, photographs of Santorini were featured in the exhibition Architecture Without Architects at New York's Museum of Modern Art, curated by Bernard Rudofsky.[34] Gradually, as these islands were rendered into mass-tourism destinations, the production of representations multiplied and indirectly affected the future shaping of the physical landscape. In parallel, big emigration waves after 1960 gradually converted the islands into peripheries within the national territory. In this spatial and discursive context, recent projects for extended wind farm developments, led by energy companies, aspire to capitalize on the abundance of wind and unbuilt space. The projects are being fiercely contested by local communities, environmental groups, heritage experts, and other people attached to the Aegean landscape, who put forward themes of landscape rights and stress the lack of a coherent policy for spatial energy planning. Artists, architects, craftspeople, photographers, and writers have participated in the mobilization against wind farm developments with the production of images or artefacts. A good example is the project Le vent et les immortelles, which employs artistic representations as urban activism through a wide-reaching poster-campaign (Figure 9). In urban and rural areas, such representations circulate in social media, are distributed as printed leaflets, or are hung in walls, aspiring to act as reminders of what is to be lost and as invitations to action.

These affective roles of the image can perhaps be better understood in a local context. On the Cycladic island of Tinos, the anti-wind movement is linked to a wide circulation, both in situ and online, of photographs, graphics, artworks, and documentaries. The photographs of architect Ioanna Papastathopoulou

Figure 9: One collage from the *Desecrations* series and other posters on a city wall, inviting action and solidarity; the image was later circulated on social media. Part of the project Le vent et les immortelles. Photo credit: Ianna Andréadis

Lefteris Naftis carved the anti-wind claims in marble; his sculpted plaques portray turbines, disoriented birds, and and two policemen symbolizing state repression of the anti-wind movement (Figures 11 & 12). Tinos has been a historic artistic center of marble craft since the 17th century and preserves this character through the continued existence of a sculpting school and the omnipresence of elegant marble objects in all public spaces. The artworks of Naftis do not function only as visual representations. It can be assumed that for islanders they assume a highly symbolic function, playfully weaving together practices of land, heritage, and craft. They render the anti-wind struggle into a lasting legacy, among other episodes that have been constitutive to the identity of place.

The collages, photographs, and sculpted artworks illuminate, and perhaps affect, the links between landscapes, communities, and globalized spatial change. They create associations between the discursive past and the planned future of the archipelago. Through their reproductions and their wide circulation in digital or printed forms, images become entangled with embodied manifestations and multidisciplinary research and are employed towards the attraction of attention and solidarity. In terms of spatial planning, these spontaneous visualizations of collective claims become a means in the multilevel resistance of protesters against an institutional process that initially excluded them. Members of the opposition movement can hardly be characterized as NIMBYs—a term commonly used to describe local opposition to generally beneficial projects.[36] As a close look at visual materials shows, windfarm opposition is instead often linked to acts of care and place-protection. At the same time, through the coalitions of protesters with other environmental groups, this opposition performs a wider critique of profit-based environmental destruction, disguised under the cloak of sustainability.

FROM REPRESENTATION TO ACTION (?)

In the age of its digital reproducibility, the image often escapes the intentions of its creator and exerts its own agency in socio-spatial assemblages. As Doreen Massey might have put it, renewable energy
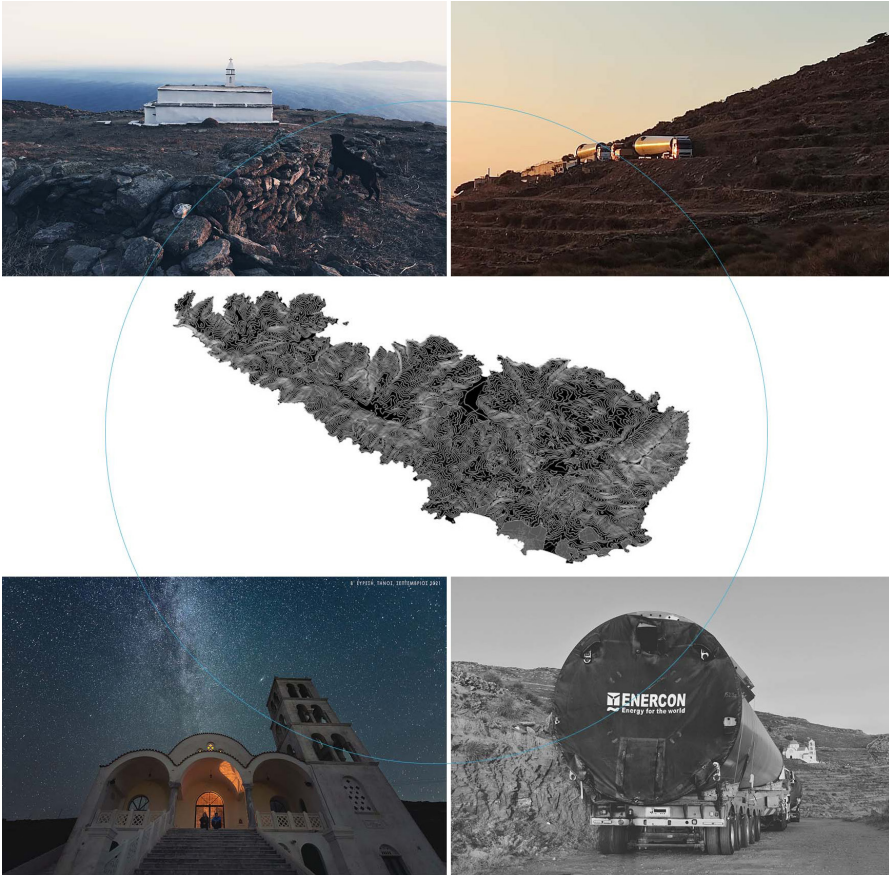

Figure 10: Three photographs by architect Ioanna Papastathopoulou (up right, bottom left, bottom right) and one by photographer Rita Filipousi (up left) picturing the site of future wind farm development on the island of Tinos, and the arrival of trucks carrying parts of wind turbines. The emphasis is on the landscape as a unique assemblage of human and geological agencies, and on this new event as a disruption to its balance. The photographs are reproduced with the permission of the photographers and overlayed over a map of the island. Edited by the author.

and photographer Rita Filipousi attempt to convey the threat that the terraced landscape with small churches faces by the installation of wind turbines (Figure 10). These photographs, revealing, as Walter Benjamin describes it, "hidden details of familiar objects" are captured as one last documentation of a soon-to-be-altered environment.[35] But their role goes beyond a mere commemoration; they also testify to the embodied nature of protesters' action. As Papastathopoulou comments (in personal communication), these photographs were taken during the "shifts" that protesters' groups held on the site of an unwanted wind farm, in their attempt to stop the transfer of the machine parts. Images were directly posted on social media, making claims to local rights and attracting support from sympathizing groups.

At the same time, the anti-wind action in Tinos went beyond the digital sphere and undertook material dimensions, activating links to local practice. Sculptor

apparatuses and their representations participate in the constellations of social relationships that constitute place.[37] Representations are not external to the process of spatial production; to paraphrase the definition of *affect* by Ali Rahim, they have the capacity "to instigate new outcomes and behaviors in users."[38] This is particularly evident in a process as wide and sudden as the territorial expansion of renewable energy infrastructures. The power of the examined images lies in their ability to engage individuals and communities in the complexities of achieving a just transition.

I have examined two types of "everyday" spatial representations: drawings that participate in formal planning, and images spontaneously created in the margins of it. The differences in the density and function of each category testify to the planning culture and the sociopolitical situation of the different

countries. However, we should not be quick to deem the seamless incorporation of design in the planning process a success, and the use of the image as resistance to it a failure. In a sense, the second category is also a successful mechanism of correction: by drawing attention to the malfunctions of the process, it invites countervailing action. The inefficacies of the current model of the energy transition are exposed, and concerned communities realize their identification with landscapes and invent practices to defend them(selves). These actions can be perceived as islands of what Anna Tsing describes as patchy hope, one that comes in contrast to trust in "technotheocratic geoengineering fixes." She writes:

> Hope in the Anthropocene (…) tends to take the shape of a hopeful politics of technological transcendence, the zombie version of modernist hope. Transhumanism, "green capitalism,"

Figures 11 & 12: The anti-wind movement as captured in marble by Tinian sculptor Lefteris Naftis. The artefact activates links between tradition, craft, place, and planned futures.

the Singularity University in Silicon Valley, and the ecomodernist movement are all versions of this revived modernist hope for capitalism and humanity to reinvent itself in a "greener" and "better" form in the face of crisis and disruption.[39]

A truly sustainable future cannot be produced out of quick fixes and innovative ideas. Instead, the sustainability of everything—as defined by anthropologist Tim Ingold—is based on the quest for new forms of citizenship and democracy.[40] Architectural work can have different agencies in this project.[41] Architects who wish to contribute to this sustainability of everything can analyze spatial dynamics; they can imagine new prototypes; and they can work with communities to ensure any transition is improving their livelihood. When the system does not include them, they must assume their roles as spatial intellectuals, nevertheless, by joining communities that are already acting within patches of hope in their rightful claims.[42] ■

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14. See Kenneth R Olwig, "Recovering the Substantive Nature of Landscape," *Annals of the Association of American Geographers* 86, no. 4 (1996): 630–53, and Kenneth R. Olwig, "Heidegger, Latour and the Reificaticion of Things: The Inversion and Spatial Enclosure of the Substantive Landscape of Things – the Lake District Case." *Geografiska Annaler.* Series B, Human Geography 95, no. 3 (2013): 251–73.

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PHILOSOPHY OF RADICAL BALANCE

THOMASINA PIDGEON

Thomasina Pidgeon is a writer, photographer, and climber. Based out of the traditional, ancestral and unceded Skwxwú7mesh Territory, she balances motherhood, full-time political science studies, her responsibilities as a gym owner and passions for social and environmental justice. Originally from Newfoundland, she has been "nomading" on different continents for over 25 years, exploring the intricacies of land and connection as a former professional climber and long time vehicle resident. Her life experiences shaped her to value the "good life" over material wealth and cultivate a deep respect for nature, culture and community. Thomasina draws from her studies and personal experiences, which push her to reflect on systemic structures and culturally held beliefs within Western society and asks: how much do we really need and is this really the best that we can do? Through use of words and images, Thomasina shares personal experiences and perspectives with the hope to fundamentally connect to people and deepen resolve about the kind of future we are creating.

EDITORS' NOTE: This unconventional contribution to our journal features a highly personal but nevetheless scholarly paper accompanied by a photographic essay with lengthy captions. We have arranged these two parts in parallel on adjacent pages rather than letting one take priority over the other and therefore betraying the "radical balance" aimed for herein. The written component begins on the next page. Both components feature notes, with notes from the photo captions starting at number 49. All photographs are by Thomasina Pidgeon.

Figure 1: How would development change if we recognized that taking care of each other and the planet was a moral and practical requirement of our existence? This mindset contrasts with Euro-centric models of development that situate mankind at the top and classify nature as something to be commoditized, controlled, and "othered." These standards are often dominated by economic terms rather than what cost they may represent to the affected human and non-human relations.

ABSTRACT

This paper questions the idea that unconscious growth is a solution to our economic and social problems and argues that the climate crisis is not simply environmental damage, but a symptom of colonial violence in relation to land. I argue that in order to decolonize design and create a just world, refusing capitalism and colonialism is morally and ecologically necessary. Through analyzing practical Indigenous-led solutions to our social and environmental problems, this paper draws on the work of scholars, like Robin Wall Krimmerer, and asks us to reevaluate the needs of the planet and ourselves, and to see the earth not as a commodity to be exploited or dominated, but as something that, as part of us, deserves respect. I argue that through broadening our cultural lens, we can fundamentally rewire our economic, political, and social spheres and shift from a taking culture focused on profit to one of reciprocity and respect that honors all our relations, human and non-human.

This paper is intended for town planners, architects, investors and developers who influence our world and those who continue to uphold the current economic and political structure. I intend to uplift Indigenous voices that have been historically oppressed in the face of a dominant Euro-centric worldview and those who believe that another world is possible. I write from my experiences as a climber, vehicle resident, and environmental and social activist, and from an academic position as a political science student. My interests lie in how dominant political theories and culture have helped shape, reinforce, and maintain the colonial and capital systems and I question if just solutions can be found within this system. Alternatively, I imagine that the next step in our collective evolution are communities where people reclaim control of land and resources to ensure a future for all our relations. This paper is a call to action that asks people to unite on common values, reclaim their power, and learn to live in a good way that creates a just world for people and land.

We live in capitalism. Its power seems inescapable. So did the divine right of kings. Any human power can be resisted and changed by human beings. Resistance and change often begin in art and very often in the art of words.

– Ursula Le Guin

What would happen if we realized that the one solution required to address pollution and climate change was a fundamental change in relationships to each other and the earth? Imagine a relationship where we are here for the land, just as much as the land is here for us. This world may seem like a far cry from our current reality—ideal, even, a dreamer's dream. Yet, it is through my lived experiences that I have come to understand that the stories we tell and are told shape and create the way we understand and behave in the world. My life as a mixed-race, lower social-economic working class, single parent woman who has strived to be in good relation with Indigenous peoples on whose lands I live, and my life on the road as a long-time climber and vehicle resident has formed my relationship to places and people in a way that contrasts with the norms society taught: that more wealth meant a higher quality of life, people should be sedentary and live only in houses, cars are just for transportation, and anyone outside of this "box" has in some way failed.

It did not take me long to realize the fallacy behind these dominant ideas when I first learned about the nomadic Innu of Nitassinan (Labrador) who, until their forced sedentarization in 1960, lived a life of mobility and in "good relation" with their land and community. For the Innu, tents are homes and borders are imaginary lines that conflict with the Innu's relationship with the land. Meanwhile, the sedentary society in which I find myself attempts to teach me that my mobile lifestyle as a vehicle resident is not only a threat to security and economics, but unworthy. To be clear, I am not equating vehicle residency to some essentializing (and at worst, racist) notion of "Indigenous nomadism," but rather pointing to the fact that Innu ways and worldviews have shaped my own perspectives on the world and taught me that Indigenous perspectives and ways of being offer us other ways to

Figure 2: For capitalism to succeed, industries are intended to run with limited regulations except those that ensure that the market is the only organizing power in the economic world. Since we live on a finite planet, the economy's reliance on growth signifies its eventual death. Put simply, the free market, empowered with technology, a growing population, and limitless capitalism, conflicts with environmental and social sustainability.[49, 50] While some argue that the pace must be slowed down to protect our community and environment, I argue that rather than delay disaster, we must change the trajectory completely. This requires critical thinking, challenging power structures, and reevaluating the needs of ourselves and our non-human relatives. It also requires self-reflection. Healing our relationship to the land and each other requires radical systemic and personal change.

be in this world that can make things better. My lifestyle as a vehicle resident and climber, and my relationships with some Indigenous peoples, have led me to value a relationship to place over material wealth, and reflects my ethics of respect and responsibility for the land.

As I navigate my own class position as a working-class settler of mixed race and as a single parent and acknowledge that people live in vehicles for different reasons, I write this paper through the lens of a vehicle resident who chooses this lifestyle and who also finds Squamish housing rates unaffordable. I often say that even if I could afford Squamish rental rates, I would still prefer vehicle residency.

I draw on the method of autoethnography (my anecdotal and personal experiences) through Changing Squamish, a photographic documentation of my hometown Sḵwx̱wú7mesh (Squamish), British Columbia, to highlight what I see and learn as a vehicle resident. I draw on my own experiences as a vehicle resident, a way of living that is often stigmatized as derelict and unworthy, yet studies show that many vehicle residents see their lifestyle as a "culture of resistance" because of the ways it can challenge power dynamics and the dominant sedentary and capitalist worldviews that prioritize economics over basic human rights and diversity. As well, I am informed by Indigenous approaches to radical balance and draw on the scholarship work of the Red Nation, Mordecai Ogada, Robin Wall Kimmerer, John Borrows, Leanne Betasamosake Simpson, Glen Coulthard and more, as well as personal relationships formed within my own life with Indigenous peoples.

In my analysis, I question what I am calling unconscious growth, which is taken as a solution to economic and social problems (such as rising housing costs combined with a lack of affordable housing and low wages) by government, investors, and developers. By unconscious growth, I mean the commonly held idea that more economic growth will solve our problems, an approach that often takes inappropriate heed to the effects that such projects have on people and place, including its effectiveness in addressing problems. I take an ethical approach, and by drawing on a rich body of Indigenous work, I examine why

creating more radical balance between humans and ecological life requires a rejection of capitalism and colonialism. In particular, I identify three aspects of development in Canada and other settler states that threaten this balance and cause the current climate crisis: the commodification of land and life, the expansionist approach of colonialism and resultant violence towards land, and the dominant Western culture, which requires a disconnect from each other and nonhuman life. I contend that the climate crisis is not simply environmental damage, but a symptom of profit-driven capitalism and colonial violence in relation to land.

For transformation, I urge those who make design decisions for cities to follow Indigenous people (community members, activists and scholars) who live for radical balance between humans and the earth. This is a project of decoloniality, which requires a shift in dominant cultural and political values. In this "decolonial" world, we live in balance with all our relations and work as caretakers for the human and non-human world. Colonialism is defined as control by one power over a dependent area or people.[1] The processes of decoloniality seek to disrupt the colonial and settler colonial logic, the "naturalness" of racial capitalism, and delink from the state in order to link to the revitalization, reparation and renewal of the lives, cultures, and knowledge of Indigenous people, people of color and colonized people, and works to decenter hierarchies and racial privilege (Figure 1).[2]

LAND AND LIFE AS COMMODITY

Before considering what a decolonial world may look like, understanding the foundations of the colonial economic system that is driving development—capitalism—is essential. We live on a finite planet, yet for its success, capitalism depends on continuous economic expansion, increasing differentials of wealth and power, and global exploitation of the environment and society.[3] As Polanyi asserts, capitalism is built on a false pretense that land and labor are commodities to be bought and sold.[4] This, in turn, helps shape and reproduce the colonial myth that the self-regulating market economy is the best path to benefit society. Yet the devastating impacts of capitalism are visible: mass disparity of wealth and poverty, oppression,

Figure 3: (Location near the Carbon Engineering Plant, Squamish.) Mordecai Ogada and Cayte Bosler critique "green" technologies as mere reproductions of an already broken system that only deepens the wealth and power of transnational corporations that continue to place profit over human and environmental rights.[51] Green technologies create the false impression that market solutions will solve our problems, when the reality is that the current socio-economic system can steal the future just as easily with renewable energy.

racism, environmental destruction, and dependence on systemic colonial economic and imperial forces (Figure 2).[5,6]

As S̲k̲w̲x̲wú7mesh undergoes the processes of gentrification, I witness the destruction of place and watch community members being displaced by those more able to afford the colonial commodification game. This includes Indigenous and non-Indigenous people, especially those unhoused. We are on Indigenous peoples' traditional lands that were dispossessed by white Europeans for the purpose of settlement and economic exploitation. This continues today through market-driven real estate and the much-debated, large-scale economic projects like the Wood-Fiber LNG terminal proposed for Howe Sound. As the land is sanitized and homogenized to meet the latest trends in modernity and market demands, the familiar, deemed derelict, is ripped down. The ongoing expansion contrasts with my understanding of progress and what being in "good relation" means. According to Michi Saagiig Nishnaabeg scholar Leanne Betasamosake Simpson, being in "good relation" means all relationships, human and non-human, lack coercion, hierarchy, or authoritarian power, and are based on responsibility and connectivity with the land and people, as well as reciprocity, respect, noninterference, self-determination, and freedom.[7]

In terms of my own relationship to land, I view an undeveloped plot of land not as potential real estate, but as green space where people and animals can play among the trees and harvest blackberries in August. I see S̲k̲w̲x̲wú7mesh territory and the sacred view of the Stawamus Chief as deserving of protection, something to be honored rather than commoditized for a wealth-driven, privatized environment. I understand land not as an investment, accessible to only those who can afford market rates, but a responsibility and gift held in common; this understanding is rooted in my own experiences as a climber who has learned to respect and give back to the environment, as well as in Indigenous approaches to land and place.

I see "non-pristine" land as deserving of healing, rather than as an excuse for more development. I hear a great disconnect between discourses of "progress"

and "sustainability" used by city planners and council members, and their actions in making unsustainable design choices, such as the Oceanfront Development that requires raising the land six meters to avoid sinking into the neighbouring ocean, and the much-objected Garibaldi at Squamish ski resort, which so far will require bringing in water from the town itself since its own water supply is insufficient. It makes me wonder where people and land matter in their decision making. Perhaps our individual understanding of these words differs, or their relationship to the land is not the same as mine. Either way, how do we, namely settlers, learn to be here in a way that respects all life, if there is not a respect for human relationship to land and place that existed in the first place? Simpson argues that to support the integrity of the land, we should give more than we take and practice responsibility to all our relations.[8] One way to unlearn commodified conceptions of land is to turn to stories, as Indigenous peoples state. Indigenous stories help us see the intrinsic value of land, and through this understanding, we can move forward with creating a more radically balanced world. However, with the government constantly choosing the economy over life itself, through punitive bylaws that marginalize vehicle residents so as to clean up the streets and improve property value to their ongoing investment in fossil fuel projects, I question if their solutions are going to be radical enough to find the balance needed to create a just world.

As the Indigenous-led Red Deal states, what creates crisis cannot solve it.[9] Working through the same capital and colonial system that got us in a state of climate crisis will not save us. Take the growing popularity of electric cars. Bosler argues that marketing electric cars as a climate solution is based on a flawed assumption that suggests inherently unsustainable levels of consumption can be maintained by "green" energy.[10]

The proposed 17,933-acre, open-pit lithium mine in Thacker Pass, Nevada is located on sacred Indigenous desert territory that is already experiencing massive droughts. The mine is expected to burn hundreds of tons of sulfur trucked in from as far away as the Alberta oil sands, use 1.7 billion gallons of wa-

Figure 4: In Squamish, million-dollar, single-family homes are encroaching into the forest, the remaining old growth forests are under threat, and a proposed LNG terminal is slated for Howe Sound. Ch'íiwes, a former marshland where the S̲k̲w̲x̲wú7mesh Nation once harvested herring roe, was destroyed to make room for the extractive pulp and paper industry and its former Chlor-Alkali Plant that filled Ch'íiwes veins with toxic waste of caustic soda, hydrochloric acid and chlorine.[52]

ter, and emit 152,713 tons of carbon dioxide annually, which is equivalent to the emissions of a small city.[11] Production at Thacker Pass is projected to last 46 years, but will only meet 8.5% of global demand by 2025. About 353 million tons of mining waste would need a permanent, lined storage facility and will risk seeping uranium, mercury, and arsenic into the groundwater. Viewed as the latest gold rush, local authorities are preparing for the associated problems, such as "man camps" and an increase in missing and murdered Indigenous women, that extractive economies bring into an area.[12] Given that driving electric vehicles results in just a 6 percent reduction of the required 80% of industrialized countries' greenhouse gas emissions, and the additional problems outside the spectrum of carbon, it seems clear that electric energy is not a radical enough change to slow climate change. As Kenyan carnivore ecologist Dr. Mordecai Ogada argues, the idea that capitalism can be used to mitigate the damage it has caused is the height of hypocrisy and contradiction that he understands as mere attempts to save us from changing our Western high-consumption lifestyle.[13]

As someone who relies on a vehicle, my opposition to electric cars may seem hypocritical. Yet, despite the green marketing, I do not see a sustainable future with electric cars because their manufacturing process relies on the same destructive extractive industries and the unequal nature of capitalism, while completely avoiding the problem of unsustainable consumption levels. Rather than rush into the next "technological fix" and the "less bad" approach, I argue we need to slow down, look beyond the spectrum of carbon and address the underlying causes head on. Radical balance must include our earth and all its inhabitants, human and non-human (Figure 3).

For radical balance or justice to be realized, something must fundamentally change in how we connect to each other and the land. Drawing on the work of Coulthard and his notion of "grounded normativity," I resonate with Coulthard's acknowledgement that Indigenous issues around land are not merely a struggle for land, but are more deeply about a reciprocal relationship to land.[14] Such a relationship is informed by Indigenous place-based practices and related

knowledge that teaches one how to live in relation to one another and the land in a respectful, non-dominating and non-exploitive way. In other words, land is an ontological framework that can help us understand relationships and how to be in this world.[15]

Robin Wall Kimmerer uses traditional teachings of her Potawatomi heritage, such as the honorable harvest, to address the environmental crises. The honorable harvest includes taking only what is given, only what is needed, and aligning the economic system with ecological law and human values. For Kimmerer, honor requires us to educate and activate each other to reject business, which is stealing our future, and to find justice for all of life.[16] As Max Wilbert, an activist working to protect Thacker Pass, says, "We're here because our allegiance is to the land. It's not to cars. It's not to high-energy, modern lifestyle. It's to this place."[17]

In Squamish, a colonial dualism is apparent, one that reflects Western cultural norms that man is separate from nature. This is reflected when developers squander what's left of unbuilt land for their own financial gain, while political leaders simultaneously claim that people who sleep in vehicles are a threat to the environment. This is the height of hypocrisy, and moreover, enforces a worldview of disconnection. It makes me wonder if I could somehow build a bridge to help the District of Squamish understand that living in a small space ensures that I consume less energy and resources. How could I convey that vehicle residency deepens my relationship to land, helps me be more aware of something larger, and to see land as something that is part of me, and a personal and collective responsibility? That living closer to outdoors guides me in my actions and thoughts and helps me to be in good relation with local place? I am not claiming that this decoloniality is the same way that the Innu traditionally lived their lives, but as Anishinaabe/Ojibway academic John Borrows argues, by "akinnoomaagwin," which means "paying attention to the land," we learn that the world has its own rules, precedents, and agency that can guide laws and paths to help people live better lives and form enduring connections and relationships with the earth indiscriminately (Figure 4).[18]

Figure 5: Ch'íiẉes is now undergoing a more sanitized form of industrialization: commercialization and tourism. The Oceanfront SquaDevelopment is a "waterfront renaissance" aimed at "professional, creative and knowledge class workers," and is meant to house 6,500 people with zero affordable housing.[53] People justify this development by arguing for the need for more growth, jobs, and housing, and because "it is already a wasteland." However, being classified as a wasteland doesn't grant permission for its ongoing destruction. Earthly wounds need love and attention just like human scars. If the focus were changed from extractive economics to revitalization, Western society could build a more authentic relationship of respect and responsibility to land, community and ourselves. As Kimmerer holds, it means giving more than is taken and renewing the life stolen.[54]

EXPANSIONIST APPROACH OF THE WEST VERSUS DECOLONIZATION

In order to promote decoloniality through radical balance between humans and the natural world, we must consider our relationships to Indigenous people and land, not only because we are on Indigenous land wherever we live, but also because they have a different ontology than Europeans that centers the value of balance. Indigenous people and their knowledge offer ways to attend to the human and ecological imbalance, as I discuss later. This imbalance has become ever more pressing under the current colonial-capitalist expansionist approach to design/development in cities and rural areas. Understanding the logics of colonial and economic domination helps us to locate the problem that is causing ecological crises. According to McEwan, colonialism operated not only as a form of military and economic domination, but also as a discourse of domination through a sense of superiority of the West upon the non-West that justified racism and various political interventions.[19] This Western superiority has been a justification for colonial-capitalism. Federici contends that capitalism is not possible without primitive accumulation, which is the violent and unjust seizure of collectively owned resources through exploitation, expansion, and enslavement by larger states and the elite.[20] Using the plantation system as an example, Federici argues that racism and the patriarchal order were socially constructed, legislated, and enforced in order to keep black and white enslaved people from joining together in collaborative dissent against their masters, while also allowing capitalism to profit from lower wages and free labor of the enslaved. For Coulthard, primitive accumulation establishes and furthers the structure of capitalist and colonial social relations, and significantly shapes the historical and ongoing dispossession of Indigenous land by the Canadian State, thus disciplining Indigenous life to the rationality of market principles (Figure 5).[21]

In Northern British Columbia, for example, the Wet'suwet'en people have found themselves victims of surveillance and violence from the colonial state of Canada as they work to prevent the construction of fossil fuel gas pipelines going through their un-

ceded Indigenous territory. At the core of the conflict is what defines critical infrastructure. For the Canadian government and corporations committed to asserting neoliberal economics, critical infrastructure is oil and gas infrastructure. On the other hand, for the Wet'suwet'en, critical infrastructure is a healthy ecosystem that facilitates hunting, fishing and berry picking.[22] The Wet'suwet'en understand that the most effective way to protect their critical infrastructure is through a revitalization and resurgence of their own culture, in which the land, water, plants, animals, and inanimate beings are kin. The Wet'suwet'en go beyond addressing climate change and attack the core of the problem: colonial-capitalism. They are doing this from the ground up by upholding their Indigenous laws in the face of colonial violence. For example, through implementation of localized energy sources such as solar power, and food through permaculture gardens, they are reclaiming their rightful position on the land and dismantling the abusive political systems and the violence of extractive economies.[23] They are also centering Indigenous ceremonies rooted in their cultural teachings; these cultural teachings are not separate from their governance structures. The Wet'suwet'en are, as Leanne Betasamosake Simpson describes, rebuilding their communities to reflect their Indigenous values of reciprocity and a promotion of life.[24] The actions of the Wet'suwet'en support Coulthard's argument that primitive accumulation is not necessary for creating alternatives to capitalism in the settler colonial context.[25] As Borrows states, by obeying and strengthening their own laws, Indigenous people can strengthen their relationships to the earth and each other.[26] These are important lessons for the rest of society if there is to be radical balance between humans and the rest of the earth.

To further illustrate, Jacobs compares the unequal and violent relationship of colonialism to the abusive relationships she experienced as an Indigenous woman.[27] However, by reconnecting with the Haudenosaunee teachings of her ancestors, Jacobs learned to shift the language and actions of violence against Indigenous women from blame and victimhood to responsibility for relationships going forward. She learned that a relationship does not need to be based around power and control, but quality and respect

Figure 6: In regard to rising real estate prices, a comment that my Skwx̱wú7mesh Nation friend Charlene Williams made is quickly becoming a reality: "In ten years there are only going to be Skwx̱wú7mesh peoples and millionaires, and we don't even have enough land for our own people."[55] While the Skwx̱wú7mesh Nation are often consulted on large projects, this consultation is often just bureaucratic, while their opposition to projects, such as the Woodfibre LNG or the proposed ski hill, Garibaldi at Squamish, remain stifled, or forced into agreement through coercion.

more appropriately called partnership. Jacobs states that her personal pathway to decolonization could be something that every individual, community, and state could learn in order to create a safer environment of mutual respect and responsibility, where all relationships are honored.

Another way to move towards relationships of ecological stewardship and valuing Indigenous knowledge is to put land management back in the hands of Indigenous peoples. For example, Brenden Mercer, from the Little Grand Rapids First Nation, notes that before colonial practices took over, traditional Indigenous fire keepers treated dry forests with regular cultural burns, which are low-intensity fires that help rebalance ecosystems and decrease the chances of a high-intensity burn occurring in the hotter months.[28] As Reder and McCall argue, the strength to oppose forces of colonialism and extraction can be found in the recovery of non-Western epistemologies.[29]

By focusing and strengthening the cultures that have been colonized against the rigid institution and academic norms of Western culture, Indigenous people use the power of reclamation and the act of listening as the basis for creating meaningful relationships and change. As the Wet'suwet'en, Mercer, and Jacobs show, it is through sharing knowledge and values from their own Indigenous cultures that challenges the larger oppressive power structures of colonialism and capitalism, and paves a path forward that is more likely to create radical balance.

CULTURE

Relationships and ideas rooted in Indigenous cultures can work synergistically to cultivate change towards radical balance (Figure 6). In "The Great Transformation," Polanyi argued that essential to the development of the modern state and market economies of western culture was the altering of human economic mentalities where societies transitioned from being based around the local needs and values of society, into globalized economies idealized as rational and separate from their immediate social context. This has had serious consequences for the Euro-centric social system. Since the very fabric of Western society relies on the idea that we must pursue individual-

ism and material wealth in order to succeed, if capitalism should fail, society is left vulnerable.[30] This fundamental shift in thinking shaped Western culture to consume far beyond individual needs, resulting in destruction of nature driven by the profit motive.[31] As I understand Coulthard's notions of grounded normativity, what is missing in Western culture is the underlying relationship to land that cultivates the knowledge that teaches us how to live in right relationship in this world.[32] This lack of connection can be linked to the ecological crises and to Indigenous dispossession directly, and as I will argue, indirectly by controlling how settlers use the land as well, which are both about dispossession in the service of profit (Figure 7). This pursuit of profit is witnessed in the branding of Squamish as a "renaissance" or "adventure hub" community, as seen in the marketing brochures of new developments and the rising costs of housing. This can lead to exclusionary environments and the reinforcement of inequalities that are often based on race and class.[33] In addition, with the increase in urban development and changing demographics (with a higher density of people), aesthetics is considered a priority by Squamish District Council members, especially in terms of wanting to increase property values. Consequently, in the District's efforts to "clean up the streets," Squamish's unhoused population has been negatively impacted by an increasing number of no-camping signs and a no-camping bylaw. These punitive policies are premised on the notion that the unhoused population, including vehicle residents, undermines the rules governing the use of public space and are deviant and a threat to the housed community in terms of safety and public image, as well as to the environment.[34] Moreover, the District maintains that vehicle residency is an inappropriate way of living, adhering to the limited definitions of "suitable housing" set out by provincial and federal agencies that oversee housing.[35]

Yet, who gets to decide what is an appropriate way of living? Such reasoning is paternalistic and denies the diversity of situations and worldviews that people have, robbing individuals of their ability to self-determine if they are precariously housed or not, and what type of life they want to lead. Moreover, it punishes those for whom vehicle residency is a matter of survival. Here, we can learn from the Nishnaabewin

Figure 7: Leading up to developments, words such as "renaissance" and "community" contrast with "derelict" and "eyesore." In the process, people are displaced, inequality grows, and the meaning and connection of places, like the pictured Squamish Youth Center, are replaced with a sterile, often beige-colored, homogenous monoculture that does not reflect local needs, and misses their original character, culture, and appeal.[56] While "out with the old, in with the new" is the motto among politicians, developers are "more concerned with boosting real estate values and tourism and less about community and environmental concerns."[57]

political orders. Simpson argues that any attempts to regulate the body, mind, relationships and decisions that an individual makes are attacks on body autonomy and self-determination, no matter the intent.[36] My own experience with the bylaw is increased surveillance, unwarranted judgement, and increased stress and anxiety. The bylaw changed what was once a life of freedom into a life of hiding. It attempts to control my behavior and actions, such as if I get out of my van, and impacts my ability to lead a life that I know is best for me: mentally, physically, socially, and economically.

The bylaw is an all-lose situation because the underlying tensions are unresolved; the stigma against unhoused peoples is (variously) legitimized and it discriminates on the basis of social class, no matter the circumstance. This includes those who live in vehicles out of necessity due to systemic injustices such as a lack of affordable housing, and those like me who want to relieve financial stress and/or lead a lower consumption lifestyle.

In relation to Indigeneity and radical balance, the no-camping bylaw reinforces Western cultural norms and hierarchies of individualism, wealth-making, commodification of land, and conventional housing that is subject to property taxes for the state and profit-making for corporations, all of which contrast with what I know being in right relationship means. In the process, vehicle residents experience what Dahmoor calls an indirect form of dispossession, whereby the state controls how settlers use the land in the service of profit (Figure 8).[37]

When I first started to live in a vehicle, my ideas around freedom and private property changed. I discovered that vehicle residency freed me from the over-priced rental market and allowed me time to live in a minimal way that aligns with my values and outlook on life. It allowed me to connect to the world in a way where I find renewal and meaning. Material items became less important, and the freedom to move something that I cherished deep within my soul. To be able to change scenes each night, and to fall asleep to the sound of rain on the roof, continues to inspire me and deepen my connection to the natural

world. Despite the challenges of inclement weather or parking issues, vehicle residency gives me balance materially, economically, and socially. I prefer this simple lifestyle over relationships of consumption, the pursuit of social status and a sedentary living situation. It is important to note that anthropological studies show that vehicle residents often refuse shelters and traditional housing and express contentment with their lifestyle, insisting that their vehicle is their home that offers them privacy, independence, and freedom from economic pressures and the mundanity of living in a fixed location.[38,39] It could even be argued that by creating alternatives to the norms of society, vehicle residents pose a threat to the Western homogeneous monoculture, where society is normalized and shaped towards particular ends, mainly to suit the economy and assimilate people into liberal ideologies of freedom and wealth.

Being subject to stigma and punitive public policy not only renders vehicle residents invisible and impedes our rights to live as free and equal citizens, it further marginalizes those for whom vehicle residency is a matter of survival. Is it right to punish people for how they handle an ongoing housing crisis and/or deciding an alternative type of roof they want or need over their heads? If policy makers and city planners realize that there is a diversity of reasons people live in vehicles, from systemic failures to choosing their autonomous, mobile, lifestyles for the freedom and constant connection it provides them to the outside world, would they still deem vehicle residency, as some Squamish council members put it, "undignified"? Marginalizing an entire subsect of the population does not resolve the problems. While I acknowledge that vehicle residency is a last resort for some, for others, vehicle residency provides economic, personal, and material freedom from an otherwise material-oriented society. Regardless of reasons, a life worth living is a life that endorses the principles of human dignity. As Simpson contends, in order to create agency, self-determination, and diversity, families and communities are responsible to support individuals and their diverse life paths, as opposed to judging and discouraging individual growth and actualization (Figure 9).[40] Mascarenhas-Swan states that we can transition from the current profit-driven, growth-dependent

Figure 8: In Squamish, the outdoor adventure lifestyle is marketed in new developments such as Jumar's "Live the Adventure," or Redbridge's "Adventure connected, community driven." The idea that human behavior is centered around attaining more wealth is seen in fish-bait marketing discourse like "mutually beneficial" and "contemporary" that aim to gain support for their projects. In reality, they are manufacturing human wants and shaping human behavior into high-impact consumption lifestyles. We must ask: With all that is gained, what have we lost? Will we experience a "collective amnesia" of what land and life was like before?

capitalist economy to an ecologically sustainable one that is just for everyone through community-focused action that accounts for the well-being of people and the planet.[41] Rather than using the marketing power of the elite that emphasizes material wealth, communities can shape neighborhoods to be equitable and influence positive lifestyle choices where quality of life is the focus. From a Red Deal perspective, this begins with divesting money from an area that reinforces the capital and colonial powers that cause harm such as the continued investment in fossil fuels, and reinvesting in solutions that put humanity and the planet first, such as health care, education, and housing.[42]

For vehicle residents, measures can include divesting from the classic punitive and exclusionary "no camping" policy and investing in inclusive options such as a permit system, where vehicle residents pay a nominal fee so they can legally roam on public land, as well as "safe lots" for those who want more stability, access to facilities, and supportive services if needed. These residents would operate under a "code of conduct" that emphasizes individual behavior and accountability and responsibility to the community, while creating a society where everyone belongs. Sharing the approach of Indigenous philosophy, Leroy Little Bear contends that differences in worldviews are at the heart of social control and result in oppression, discrimination, and the denial of harmony and diversity.[43] To overcome these differences, Little Bear argues that we must support diversity and recognize that beyond these differences is the interconnectedness of what he calls our "spider web of relations."[44] He explains that through sharing stories and worldviews, minds can be opened and values of honesty and kindness can prevail. Little Bear encourages challenging the deep-rooted assumptions about what life and reality are all about so we can learn to appreciate an alternative way of thinking and behaving. As Little Bear proposes, if everyone does their part, social order and wholeness will result.

These ideas challenge the logic and dominant power hierarchies created by colonialism that independently decide what is an appropriate type of housing, let alone what type of life is worth living. I am not claiming that this is structurally decolonial, but that there needs to be recognition that Indigenous disposses-

sion occurs by regulating Indigenous people and others who do not follow hegemonic norms, and that vehicle residents, like me, are targeted because we do not strictly follow the colonizing plan to center profit-making and ideas about what is "civilized."

CONCLUSION

By reflecting on our own positions within the colonial system, we could realize, as Dene scholar Glen Coulthard argues, that decolonization is a beneficial process where Indigenous and settler people alike could gain access to their own right to self-determination.[45] Colonial power affects all areas of life and thought and creates imbalance in the world. We can challenge power hierarchies by paying attention to where the power lies and the money flows and asking simple questions such as why the definition of housing is limited to that determined by the State, and how this reinforces settler colonialism and Indigenous dispossession. Challenging the system can ensure that any political and economic systems are in-line with community interests and values rather than developers and corporate interests.

If town planners, architects, investors, and developers can incorporate and respect local Indigenous worldviews into their daily discourse and policy making, as well as those change-makers working from the ground up and oppressed due to systemic inequalities and discrimination, Western societies can learn to be in a position of respect and reciprocity with the land and each other, rather than continuing to accommodate relationships of consumption and domination. In situations where people are "othered," such as the unhoused population, the "other" could be viewed as someone resilient and self-determining in their own world. Instead of perpetuating inequalities and injustice through punitive bylaws, society can strive to make space for them and recognize the diversity of worldviews and situations.

Change is possible, but the question remains: do we have the will to fundamentally change and to respect the rights of the human and non-human world? So long as the dominant colonial worldview continues to put economics before our very existence and planet, we must change fundamentally and radically. We

Figure 9: Vehicle residents are often subject to exclusionary public policy such as no camping bylaws. However, studies show that they have a good understanding of economic inequality and many see their alternative lifestyle as participation in a "culture of resistance" from the capitalist system.[58] There is a growing recognition that vehicle residency is an important aspect of the environmental justice movement, which is now understood as being just as much about people and their lifestyles and work as it is with environmental protection programs.[59]

must talk about radical balance. For Simpson, resistance to capitalism and finding a way of living in the world that is not based on violence and exploitation paves the path to radical balance.[46] Simpson argues that the Nishnaabeg find this balance not in accumulated capital or individualism, which signifies an imbalance within the larger system of life, but within meaningful relationships of trust.[47] As the Indigenous voices here have pointed to, notions of radical balance are found in the refusal of domination and systemic inequalities, while decentralized political and governing structures facilitate living as self-determining individuals in right relation with all life around us, including the land, water, and each other.[48] Shifts in mindset, power, and ways of living are morally and ecologically necessary for the future of the planet, and the wellbeing of all people. Anything less could be disastrous, and certainly, as our Indigenous relatives teach us, another world is possible (Figure 10). ▪

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Figure 10: Reconnecting can change our relationships to land and each other, and lead to an understanding that land as kin isn't a commodity to be dominated, exploited, and managed, but something that must be respected. Seeing other worldviews opens up possibilities and provides a chance to create a more just world that respects all our relations, human and non-human. Western culture can change from a taking culture to one of reciprocity and respect. ▪

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