

Climates: Architecture and the Planetary Imaginary

James Graham
Editor

Caitlin Blanchfield
Managing Editor

Alissa Anderson
Jordan H. Carver
Jacob Moore
Contributing Editors

Columbia Books on
Architecture and the City

Lars Müller Publishers

The Avery Review
www.averyreview.com

The Resilience Problem: Part 1

JESSE M. KEENAN

1

Andrea Wulf, *The Invention of Nature: Alexander von Humboldt's New World* (New York: Knopf, 2015).

2

Wolfgang Behringer, *A Cultural History of Climate* (Cambridge: Polity Press, 2010).

3

Neil W. Adger, et al., "Are There Social Limits to Adaptation to Climate Change?" *Climatic Change* 95 (2009): 335–354.

4

Pope Francis, *Encyclical Letter Laudato Si' of the Holy Father Francis on Care for Our Common Home* (Rome: Vatican Press, 2015).

5

See Michael Northcott and Peter M. Scott, *Systematic Theology and Climate Change: Ecumenical Perspectives* (New York: Routledge, 2014).

6

C. S. Holling, "Understanding the Complexity of Economic, Ecological, and Social Systems," *Ecosystems* 4 (2001): 390–405.

The universal nature of climate change dictates a collision of unanticipated connections between particles, people, and places across an endless array of scales. A diverse set of disciplines and perspectives is required to understand the impact of climate change and to exercise some measure of agency over its causes and ills. Climate Change and the Scales of Environment, a conference convened at Columbia University in December 2015, gathered such an assortment of thinkers. The scientists remarked at the depth of language and meaning that assailed their constrained empiricism. The designers responded to the overwhelming nature of socioecological stimuli from which one could analyze in physical terms. The humanists and historians provided a narrative of change and instability that has prevailed throughout human history. It is not just the parameters of uncertainty that animate such conversations around climate change, but also the tension between diverse constructions of the concept of "environment" and the manifested control or agency thereof.

The proceedings highlighted a broader popular struggle to construct an environment conceptualized through an anthropocentric reality tempered by the narrative appeal of equity and justice. The struggle is to make universal any randomized selection of ecologies. The problem with this type of narrative is that the characters of pollution and oppression are not so black and white and the divisions between human and natural ecologies are more or less allegorical. This incidental framing relates very closely to the current popular reexamination of Humboldt's "nature."¹ In this sense, one is needlessly repeating a long history of a "man-versus-nature" dichotomy that removes moral culpability and practical agency.² While ecology and evolutionary biology have disconnected the human experience in some form or another as a means to bring perspective, the socioecological frameworks for climate change are slow to recognize the tremendous status quo bias latent within the prevailing discourse of socioecological resilience.³

Dipesh Chakrabarty has noted the intellectual power of the recent papal encyclical that posited that humans are just one of many equals in a "common home."⁴ Have humans had any higher intrinsic value in the manifestation of God's likeness than ants or viruses? It seems odd that theology would be the source of a morally neutralizing agenda that conflicts with the history of paternalistic conservation.⁵ Perhaps removing human reality from ecological evolution is useful to home in on the absolute nature of extinction or the collapse of civilization as we know it. But one shouldn't forget that the world will be fine with climate change. The aggregate systems of the nonhuman world will follow their associated adaptive cycles along a series of evolutionary stable states continuously interrupted by the cosmos.⁶ It is humans (and polar bears) that are at risk. If the built environment is more fundamentally defined in ecological terms, then this dualism between humans and nature may no

longer be useful in a world where “old dualisms are being supplanted by transdisciplinary thinking, uneasy synergies, complex networks, and surprising collaborations.”⁷ Scholars such as Chris Reed and Nina-Marie Lister, Jack Ahern, and Donald Watson and Michele Adams all offer compelling and diverse perspectives that reflect the wide-ranging applications of design thinking within an ontologically and ecologically diverse landscape.⁸

However, despite this plurality of viewpoints, urban ecology scholarship has consistently demonstrated the nonlinear and asymmetric—yet *coupled*—operations of socioeconomic and biophysical processes. This would lead one to believe that there is an opportunity for a designed agency—or agency of design.⁹ This may be true at one scale (e.g., toxic waste, individual household consumption, etc.), but at many scales these relationships are subject to the prevailing theory of panarchy, which is reliant in part on the continuous adaptive cycle being periodically broken by “creative destruction” of natural capital by forces unanticipated or unknown to the subject cycle.¹⁰ Therefore, one’s agency in an open system is inherently limited by forces that we are unlikely to anticipate or to apply probability to. This point was very clearly made by the climate scientists at the symposium who noted the limitations of using downscaled climate science for anything less than region-specific analysis. In addition, the scalability of designed mechanisms for change is limited by resource allocations. This is perhaps the great conundrum of sustainability of any given system and the sustainability of resources necessary to promote resilience of any given system. Sustainability at one scale comes at the cost of instability at another scale or system.¹¹

Therefore, the popular mantra that we designed climate change and that we can design our way out is of limited application. Unfortunately, it is too late to stop climate change, and it is impossible to sustain the resources necessary for any—let’s assume desirable—scalable design solutions that promote the status quo posited by socioecological resilience. Therefore, the more appropriate question might be: how can design intervene to lessen the burden of climate change for people and to minimize the deleterious impact to the natural environment (admittedly self-serving)? Unfortunately, the conventional paradigm of conservation and promoting stability in urban ecological systems is in conflict with many of the Western principles of urban design and planning that offer stability, hierarchy, and generalizable and scalable application for mass utility and/or universal aesthetics. If these open, dynamic, and adaptive systems are based on a heterogeneous intent, how does design develop a taxonomy that isn’t otherwise linear and homogenous in its application even though its origins are creative, iterative, and pluralistic? This is the central thesis of design and climate change. We didn’t design Fuller’s spaceship earth—we merely designed the fuel for the ship and the seatbelt to keep us in place.¹²

7

Chris Reed and Nina-Marie Lister, *Projective Ecologies* (New York: Harvard Graduate School of Design, 2014), 17.

8

See Reed and Lister, *Projective Ecologies*; Jack Ahern, “Urban Landscape Sustainability and Resilience: The Promise and Challenges of Integrating Ecology with Urban Planning and Design,” *Landscape Ecology*, vol. 28, no. 6 (2013): 1,205–1,212; Jack Ahern, “From Fail-safe to Safe-to-Fail: Sustainability and Resilience in the New Urban World,” *Landscape and Urban Planning*, vol. 100, no. 40 (2011): 341–345; and Donald Watson and Michele Adams, *Design for Flooding: Architecture, Landscape and Urban Design for Resilience to Flooding and Climate Change* (Hoboken, NJ: John Wiley & Sons, 2010).

9

Marina Alberti and J. V. M. Marzluff, “Ecological Resilience in Urban Ecosystems: Linking Urban Patterns to Human Functions,” *Urban Ecosystems* 7 (2004): 241–265.

10

Jianguo Wu and Tong Wu, “Ecological Resilience as a Foundation for Urban Design and Sustainability,” in *Ecological Resilience and Urban Design*, ed. Steward T. Pickett, Mary L. Cadenasso, and Brian McGrath (New York: Springer Publishers, 2012), 211–229.

11

See H. E. Daly, *Beyond Growth: the Economics of Sustainable Development* (Boston: Beacon Press, 1996).

12

R. Buckminster Fuller, *Operating Manual for Spaceship Earth* (Zurich: Lars Müller Publishers, 2008).

The metaphor of the seatbelt and stability is at the core of the “Resilience Problem.” Resilience is about the elastic function of a system to revert to its pre-stimulus domain of operation.^{13,14} By contrast, adaptation is about the capacity to transform to an alternative domain of operation. Resilience has a threshold and beyond that threshold one either adapts or fails. Today in the US, much of the discourse in design and planning is oriented toward the notion of resilience without fully contemplating the nature of adaptation. If only we can build a resilient city or a resilient building, then we can accommodate climate change. This trend fails to acknowledge the limitations of resilience and the limitation of the capacity to sustain resources to promote resilience. As Jianguo Wu and Tong Wu so precisely highlight,

13

Jesse M. Keenan, “Material and Social Construction: A Framework for the Adaptation of Buildings,” *Enquiry: Journal of Architectural Research*, vol. 11, no.1 (2014): 18–32.

14

Resilience is a process and not an outcome. One may be resilient along a continuum of the process of resilience. One can only be resilient to known stimuli to which the process of resilience is engaged with.

It is crucial to note that there can also be a negative dimension of having high resilience. A system can sometimes become resilient in a less desirable regime. For instance, urban regions besieged by impoverishment may be stuck in “poverty traps,” where a suite of socioeconomic factors have induced a highly robust state of squalor ... The same genre of dynamics can also affect rural regions, urban fringes, and other socio-ecological systems, manifesting in environmental degradation and the depletion of valuable ecosystem services. This is the case in many urban areas of the developing world, and illustrates that resilience can work as *both a vehicle of sustainability and an agent of destitution*.¹⁵

15

Wu and Wu, “Ecological Resilience as a Foundation for Urban Design and Sustainability,” 224. Emphasis added.

As the authors cite, if we focus on perpetuating the operations of the status quo, then we run the risk of perpetuating inequality and the less desirable aspects of society and environment. Consumption is in many ways predicated on the status quo. One needs a stable job in order to afford things to consume and a stable place in which to store them. However, when we attempt to make resilient aspects of excessive or perilous consumption—whose costs are borne by the collective—we overlook the central danger of resilience in that it does not allow us to challenge the institutions that have created our vulnerabilities.

In recent months, consumer bath products have been utilizing the word “resilient” in their packaging and marketing. There is a Resilience Bar in Hong Kong, and NPR has daily resilience reporting—or so they say. Nike has a resilience line of shoes, and nearly every car marketed in America is resilient—either to one’s lifestyle or to the rugged everyday terrain of America’s deteriorating infrastructural landscape. Actors receive awards for their resilient performances, and refugees are lauded for their resilient character. According to Google Trends, since 2004, online searches for the term “resilience” have more than doubled. For some reason, Australians, New Yorkers, and Kenyans can’t get enough. The number one search query by a margin of 2:1 to the second most queried phrase is the “definition of resilience.”

This highlights the extent to which resilience has morphed into just another buzzword with very little substantive popular meaning.¹⁶ Yet, resilience is the call-to-arms for people around the US as they struggle to recover from disasters and build capacities to accommodate future storms and climate change. However, resilience has precise technical and scientific meanings and applications in psychology, engineering, ecology, anthropology, computer science, and climate science. While resilience is important, we also need to acknowledge the necessity for adaptation. In applied terms, adaptation is about the transformative capacity to shift to alternative modes of consumption

16

Eva-Maria Stumpp, “New in Town? On Resilience and ‘Resilient Cities,’” *Cities* 23 (2013): 164–166.

and production. If we focus on resilience, then we are setting ourselves up for investing resources into modes of consumption and a way of life that simply isn't sustainable in the future. Adaptation isn't going to be easy, and there will be winners and losers. Some aspects of the built environment need to be resilient, but other aspects will simply need to creatively destruct and adapt.

Politicians and foundations love to frame the world through the lens of resilience because it speaks to the present interests of their respective constituencies. No politician wants to be the one who stands up to advocate for disinvesting in a high-risk neighborhood. However, with climate change, there aren't enough public and private resources to support universal resilience. It is incumbent upon society to acknowledge that we can't do it all. At best, one can promote the resilience of vulnerable populations and help facilitate long-term adaptations. However, this task won't be easy. Resilience at one scale might be maladaptive at another and vice versa. The subjective application of these concepts belies new governance institutions and techniques that adjudicate matters of justice and equity.¹⁷ The struggle for the status quo is not entirely about excess consumption. Elements of culture, identity, and place are as critical to the climate change discourse as economics and resource allocation.¹⁸ So, it is that one comes full circle to the narrative techniques of the humanities and jurisprudence highlighted at the previously mentioned symposium.

Advancing the role of designers and planners in the built environment in the accommodation and mitigation of climate change must be based on principles that acknowledge the dynamism between socioeconomic and biophysical processes. Equilibrium-seeking notions of conservation are no longer adequate as they do not represent our empirical understanding of the built and natural environments under contemporary ecologically framed knowledge. However, design cannot be bound by, nor can it rely blindly on, scientific understandings, projections, and probabilities. The complexity of our world is beyond our capacity to accommodate through the conventional economic decision-making necessary to allocate resources to one iterative design decision over the other. This isn't to say that under many circumstances probabilistic approaches to design and risk cannot be harmonized. Rather, it is to say that designers will never find a panacea in scientific knowledge. Sensitivity to people and place is of equal weighting if mechanisms are in place to reflect upon the nature of excess or perilous consumption. However, weighting is not the same thing as optimization. The built environment generally tends to reject optimization in favor of a qualitatively panarchic and messy state.¹⁹ This seemingly transitive state is where the iteration and mediation of design work best. Designers and planners have an opportunity to translate scientific and social scientific knowledge for application in the construction of the built environment. From translation to taxonomy, this will be many generations in the making. However, a critical first step is to develop consistent meanings for resilience, acknowledge its conceptual and actual limitations, and make productive its counterpoint by promoting a robust capacity to adapt.

17

Ferenc L. Toth, *Fair Weather: Equity Concerns in Climate Change* (London: Earthscan, 2009).

18

Neil W. Adger, et al., "This Must Be the Place: Underrepresentation of Identity and Meaning in Climate Change Decision-Making," *Global Environmental Politics*, vol. 11, no. 2 (2011): 1–25.

19

Joan Iverson Nassauer, "Messy Ecosystems, Orderly Frames," *Landscape Journal*, vol. 14, no. 2 (1995): 161–170.



**Climates: Architecture and
the Planetary Imaginary**

**Columbia Books on
Architecture and the City**

An imprint of the Graduate
School of Architecture,
Planning and Preservation
Columbia University
407 Avery Hall
1172 Amsterdam Avenue
New York, NY 10027
arch.columbia.edu/books

The Avery Review

A digital periodical of critical
essays on architecture
www.averyreview.com

Lars Müller Publishers

Zurich, Switzerland
www.lars-mueller-publishers.com

© 2016 Lars Müller Publishers
and the Trustees of Columbia
University in the City of New York
Essays © the authors
All rights reserved

ISBN 978-3-03778-494-5

Printed in Germany

No part of this book may be used
or reproduced in any manner with-
out the written permission of the
publisher, except in the context of
reviews. Every reasonable attempt has
been made to identify the owners of
copyright. Errors or omissions will be
corrected in subsequent editions.

This book has been produced
through the Office of the Dean,
Amale Andraos and the Office of
Publications at Columbia University
GSAPP.

Director of Publications

James Graham

Managing Editor

Caitlin Blanchfield

Associate Editor

Alissa Anderson

Copyeditor

Ellen Tarlin

Designed by

Neil Donnelly
Sean Yendrys

Printing and Binding

Kösel, Altusried-Krugzell, Germany

Paper

Munken Polar
170 g/m², 150 g/m², 130 g/m²,
120 g/m², 100 g/m², 80 g/m²

Avery Review website and
identity designed by Eric Hu,
Nothing in Common

**Library of Congress Cataloging-
in-Publication Data**

Title: *Climates : architecture and
the planetary imaginary* / edited
by James Graham with Caitlin
Blanchfield, Alissa Anderson, Jordan
Carver, and Jacob Moore.

Description: New York : Columbia
Books on Architecture and the City,
2016. |

Includes bibliographical references
and index.

Identifiers: LCCN 2016015773 |
ISBN 9783037784945 (alk. paper)

Subjects: LCSH: Architecture and
climate.

Classification: LCC NA2541 .C544
2016 | DDC 720/.47—dc23

LC record available at [https://lccn.
loc.gov/2016015773](https://lccn.loc.gov/2016015773)